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College Women and Personal Goals: Cognitive Dimensions that Differentiate Risk-Reduction Sexual Decisions

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As the twenty-first century begins, a high level of participation in premarital sexual intercourse by college women is well-documented. But, in the research exploring risk-reduction sexual behaviors, the relationship of cognitive abilities to responsible sexual behavior has been under-researched. Anonymous questionnaires were administered to 626 never-married, heterosexual women at a mid-western university to examine personal goal-setting, a cognitive variable postulated to be related to risk-reduction sexual behavior. Women who frequently set goals were more religious, optimistic about life, conservative in sexual attitudes, comfortable with their sexuality, and more psychologically sexually satisfied. Those who less often set goals were more likely to drink alcohol prior to sexual intercourse, become more intoxicated, and less likely to ask if new sex partners had STI(s). The cognitive variable, goal-setting, did differentiate college women who made responsible sexual decisions from those who engaged in risk-taking sexual behaviors.

KEY WORDS: personal goals; risk-reduction sexual behaviors; religiosity and sexual satisfaction.

INTRODUCTION

At the beginning of the twenty-first century, a high level of participation in premarital sexual intercourse among college women is much in evidence, as is the controversy surrounding this trend and the concomitant rise of sexual risk-taking (Moore and Davidson, 2000). In the wake of recent educational and media campaigns to enhance awareness of risk-reduction sexual behavior, some have suggested that college women are changing their sexual behavior patterns, while others maintain that no substantial changes are occurring (Christopher and Sprecher, 2001). Factually, there is limited research to support either of these positions and a paucity of recent studies that focus on specific circumstances surrounding sexual risk-taking. What has been established, however, is that living in an information age has not solved all of the age-old problems of youth. Just being well-informed about sexual risks does not necessarily result in behavioral change (Bon *et al*., 2001). A disproportionate number of today's young women are failing to cope with their developing sexual maturity responsibly by engaging in unsafe sexual practices that enhance the risks of STIs, unintended pregnancy, and alcohol-related date rape (Davidson *et al*., 2004). The questions become, why? And, why not?

In the midst of such sexual dilemmas, the fact is that not all young people are inept at coping with their developing sexuality. Some say no. Others are protected from pregnancy and STIs by the appropriate use of contraceptives and other precautionary measures. But, what differentiates the responsible from the irresponsible? To answer this question, the variables of education, family, and

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social/cultural milieus have been subjected to scrutiny and found to be important, but significant pieces of the puzzle are still missing.

Research has advanced several perspectives that may furnish clues in this mystery surrounding the use of one's sexual freedom. Baumrind (1988) speculated that young persons who fail to use their sexuality responsibly have not yet fully developed the cognitive concept of cause and effect. Others view risk-taking behaviors in young adults as evidence of the latent adolescent characteristics of invulnerability, which is typically observed during the transitional stage from adolescence to full adult status (Schneider and Morris, 1991). The belief that one is invulnerable to the consequences of her/his actions has been related to the failure to use appropriate contraception (Brown *et al*., 1992). And, some note that the escalation of risk-taking behaviors occurs at the time when young adults begin to cognitively perceive parents and teachers as fallible beings and society as less than fair (Schneider and Morris, 1991). Further, it is suggested that some young persons may be less than adept in applying a "future time perspective" necessary to take preventive measures to avoid STIs and unintended pregnancy (Manning *et al*., 1989). Certainly, college women have the cognitive ability to imagine the future, but the future may seem less than pressing when attempting to cope with normative developmental tasks, not the least of which include burgeoning sexual needs. While considering all of these perspectives as valid possibilities, the researchers conducting this study found it compelling that the role of cognitive development in sexual decision-making has been an understudied area.

Cognitive developmental models for understanding interpersonal relationships grew out of the 1970s, but the significance of levels of cognitive development in decision-making was introduced much earlier by Piaget (1928/1962) and Kohlberg (1969). Piaget's theory that a person's behavior and attitudes are highly dependent on cognitive skills and the way they are used was the basis for Kohlberg's moral development framework. Kohlberg (1976) viewed moral reasoning as a cognitive developmental variable that emerged from structural changes in a person's logic-value system, contingent upon interactions within the social environment. Using Kohlberg's method of assessing cognitive moral development, Jurich and Jurich (1974) found a strong relationship between premarital sexual standards and cognitive moral development. Although developmentalists have proposed important links between sexual decision-making and moral development (Juhasz and Sonnenshein-Schneider, 1979) as well as the ability to apply formal operational thinking (Sandler *et al*., 1992), there is a dearth of recently published research on such relationships. Because lack of planning has been implied as a cause of unwanted pregnancy (Balassone, 1989), and goal-setting is believed to be a motivational factor in learning (Hilgard and Bower, 1975), logically, the ability to set goals, a manifestation of formal operational thinking, may be positively related to risk-reduction sexual decisions.

REVIEW OF LITERATURE

Sexual Behavior Among College Women

Masturbation

Decades ago, it was predicted that as college women received psychological permission and support in learning about their own bodies, they would become more accepting of masturbation, a physically risk-free sexual outlet. This prediction has not materialized. During the 1980s, the percentage of women reporting masturbation ranged from 46% (Davidson, 1984) to 58% (Darling *et al*., 1992) and, more recently, from 47% (Weinberg *et al*., 1997) to 64% (Pinkerton *et al*., 2002). Not all college women feel psychologically comfortable with masturbation as illustrated in research where 30% reported "shame" as the major reason for not engaging in the practice (Atwood and Gagnon, 1987) and only 50% believed that masturbation was "healthy" (Weiss *et al*., 1992). College women who masturbate are likely to consider masturbation to be a pleasurable activity, but they do so less frequently than men: only 14.2 times per three months in comparison to 36.0 times for men (Pinkerton *et al*., 2002).

Partner-Related Sexual Behavior

Numerous studies have chronicled the rising incidence of premarital sexual intercourse among college women. A review of 30 studies from the 1980s revealed a wide variance of percentages for premarital sexual intercourse, depending on the college/university's geographical location, size, and public/religiously-affiliated status. The percentage reporting premarital sexual intercourse in the 1980s ranged from 53% (Earle and Perricone, 1986) to 88% (Murstein *et al*., 1989) and in the 1990s, from 82% (Corbin *et al*., 2001) to 94% (Flannery *et al*., 2003). Oral-genital stimulation also became more prevalent during the 1990s. The reported range among women for cunnilingus varied from 72% (Weiss *et al*., 1992) to 86% (Weinberg *et al*., 1997), while the rate for participation in fellatio fluctuated from 73% (Weiss *et al*., 1992) to 94% (Gilbert and Alexander, 1998). Participation in anal intercourse ranged

from 12% (Siegel *et al*., 1999) to 32% (Flannery *et al*., 2003). That young women have become increasingly sexually active can in part be attributed to two factors: the delay in marriage and the overall acceptance of sexual intercourse prior to marriage (Christopher and Sprecher, 2001).

Risk-Related Sexual Behavior Variables

Resistance to Change in Sexual Behavior

Due to rising rates of some STIs, "safer sex" campaigns recommended changing sexual practices: limiting the number of sex partners; choosing sex partners carefully; using condoms; and avoiding high-risk sexual behaviors such as anal intercourse. However, risk-taking sexual practices among college women during the 1990s appear to have changed very little, with a mean range of 4.6 (Davidson and Moore, 1999) to 7.5 lifetime sex partners (Flannery *et al*., 2003). Further, 26% of college women in one study reported having been treated for an STI (Flannery *et al*., 2003). And, the percentage of college women whose partners regularly use a condom varies from 30% (Flannery *et al*., 2003) to 68% (Siegel *et al*., 1999), with 68% indicating they "Never" used a condom during anal intercourse (Flannery *et al*., 2003). Alcohol consumption is also a key factor in sexual risk-taking behaviors: a condom is seldom used if the woman is either drunk or high during oral sex, sexual intercourse, or anal intercourse (Bon *et al*., 2001) and 50% of women in one study experienced sexual intercourse while intoxicated (Flannery *et al*., 2003). That lack of change in the sexual practices of women is related to a low sense of self control was confirmed by Carroll (1991) who found that condom use was perceived as a male prerogative by women who lacked a sense of personal power.

Education

Sexuality education has long been considered to be important in the promotion of safer sexual behavior although the evidence of its efficacy remains mixed. Recent research on program effectiveness suggests that sexuality education can be effective but often is not (Olson, 2005). Contrary to popular opinion, becoming knowledgeable about sexual risks, including AIDS, does not necessarily lead college women to implement behavioral changes (Bon *et al*., 2001). Carroll (1991) found that knowledge about AIDS was not correlated with condom use during sexual intercourse, less frequent sexual intercourse, or fewer sex partners.

Religion

Religion is also a variable influencing risk-related sexual practices. Arnett (2000) suggested that religious attitudes are more influential during emerging adulthood because a task of young adults is to explore new world views. Although attendance at religious services decreases during the transition from adolescence to adulthood, individuals become more committed to their beliefs (De Haan and Schlenberg, 1997). College women with a low degree of religiosity are more likely to report a greater number of lifetime sexual partners (Lefkowitz *et al*., 2004) and more sexual partners during the past year than women with a high degree of religiosity (Davidson *et al*., 2004). Lefkowitz *et al*. (2004) found no correlation between regularity of condom usage and degree of religiosity, but Davidson *et al*. (2004) found that, among college women, the higher their degree of religiosity, the less likely that a condom would be used during oral-genital sex. Zaleski and Schiaffino (2000) suggested reference group theory to explain the relationship between religiosity and sexual attitudes and behaviors. Some argue that religious behavior i.e., frequent attendance at religious services, is a better predictor of sexual behaviors and attitudes than religious group membership. That is, while both denomination and church attendance affect attitudes about sexuality, church attendance is a better predicter of whether or not an adolescent has experienced premarital sexual intercourse (Thornton and Camburn, 1989).

Cognitive Development

Cognition, a three-dimensional complex relationship of cognitive capacity, knowledge, and motivation has been widely studied (Adelson, 1982), but cognitive research has focused more on the formative years than adolescence, and the adult years least of all. According to Inhelder and Piaget (1958), the adolescent differs from the child in that she/he thinks beyond the present, development made possible by the growth of formal operational thought which depends on both social and neurological factors. In adulthood, a further restructuring occurs in which intellectual transformations compliment affective ones, effecting a reconciliation of thought and experience, a prerequisite for life planning.

The adolescent period of life is characterized as one in which there is an inordinate sense of infallibility, causing adolescents to underappraise the actual risks of their sexual experiences (Weiss and Koch, 1997). Lacking adult experiences, adolescents incorporate sex-related cognitive changes, including social cognitions, into their

self-definitions (O'Sullivan *et al*., 2000; Schnirer, 2001). Other cognitive-related factors, an external locus of control and a less well-developed future time perspective, have been found to differentiate teen mothers from never-pregnant, sexually active adolescents (Blum and Resnick, 1982). Sandler *et al*. (1992) also found a relationship between contraceptive use and higher scores on verbal reasoning ability, sex knowledge, and internal locus of control. In summary, it could be argued from a developmentalist perspective that many adolescents may lack sufficient cognitive development that would enable them to make rational sexual decisions about such matters as choosing to use effective methods of contraception (Weiss and Koch, 1997).

In the young adult years, cognition is heightened when development signals a significant shift in thought processes that become more abstract, logical, and idealistic, enabling one to critically examine their thoughts and more clearly interpret the social world (Santrock and Yussen, 1989). This change from a personalized egocentric mode of understanding of social and moral issues to a sociocentric one marks the rite of passage from adolescence to adulthood. For college students who are in transition from adolescence to adulthood while surrounded by new social, political, and religious milieus, such change can be a challenge. And, according to Arnett (2000), individuals engage in their most extensive identity exploration during emerging adulthood rather than early adolescence as previously claimed. Schnirer (2001) also discovered that a sense of infallibility is not limited to the period of adolescence, but that 10% of the variance in sexual activity among undergraduate college students was attributed to the personal fable construct of omnipotence. Thus, although the normative college age is the time when cognitive reorganization typically occurs in ways that life issues are perceived and interpreted, wide variations exist. And, while it cannot be assumed that all college-age women are intellectually and/or psychologically capable of life planning, for most, goal-setting would be developmentally appropriate cognitive behavior.

D'Augelli and D'Augelli (1977) defined relationship reasoning as a cognitive variable in decision-making that pertains to the current and future quality of a person's interpersonal life, in which long-term planning is more relevant than behaviors leading to immediate costs and rewards. Thus, relationship reasoning is the person's interpersonal plan or cognitive schema for constructing a personally rewarding life in which sexual decision-making is based on the partners' sexual philosophic/moral reasoning, mediated by sexual guilt.

Psychodynamic Concepts and Goals

The interaction of mental and emotional processes raises psychodynamic issues related to motives or drives (Morris, 1979). In seeking a "science of living," Alfred Adler concluded that life is characterized by movement in the direction of growth and that the "life-goal" is the individual's secret striving to achieve superiority (Hinsie and Campbell, 1970). According to Adler's goal-oriented individual psychology theory, the cause of behavior is subordinated to values and goals, with goals furnishing criteria for making choices, and values serving as guideposts (Ansbacher, 1974). Thus, the most important question concerning the healthy and unhealthy choices in life was not "from what place" but "to whatever," a change of perspective viewed by some as Adler's greatest contribution (Frankl, 1970). Individuals no longer were viewed as victims but as masters of drives and instincts, which then became the material for action.

Though values are not synonymous with goals, values represent potential goals (Buhler, 1962). How motives and values are organized within the individual is relevant to attaining long-range goals that are affected by short-range activities such as unplanned sexual intercourse (Hilgard and Bower, 1975: 609). Knox *et al*. (2001) found that college women were guided in sexual decision-making by the values of either relativism ("what you do depends on the person you are with") or absolutism ("strict codes, usually based on religion, dictating right or wrong") rather than hedonism ("if it feels good, do it").

Shostrom's (1966) earlier work illustrates the interaction effects of personality characteristics and cognitive factors in goal-setting behaviors. Drawing on the work of Reisman *et al*. (1950), he constructed a Personality Orientation Inventory (POI) that differentiated inner-directed and other-directed characteristics as a measure of self-actualization. Accordingly, inner-directed persons possess a psychic "gyroscope" that originates with parental influences and becomes further developed by later authority figures before being generalized into principles and character traits. Other-directed persons appear to receive signals from a wider circle of social agents such as school authorities and peers, with approval of others, as evidenced by external conformity, their highest goal. Lacking an internal ballast, feelings of anxiety are generalized as an insatiable need for affection or reassurance of love. The self-actualizing person's orientation to life lies between the possible extremes of inner and other-directed behavior: other-directed to the degree that they are sensitive to people's approval and affection, but inner-directed to the degree that their direction is from within (Shostrom,

1966). Using these parameters, one who sets personal goals could be characterized as more inner-directed than other-directed. In one college sample, a correlation was found between inner-directedness and time competence, a variable related to goal-setting (Shostrom, 1966). The need to tie the present and future meaningfully together is a hallmark of the self-actualizing person who realizes the desirability of goals to pursue future well-being. Logically, the interaction of personality variables and cognitive dimensions cannot be overlooked when explaining differences in sexual behavior. Cognitive factors, as operationalized in personal goals, appear to be important variables affecting life decisions among college women in issues pertaining to sexuality. Personal goal setting may be more critical for women today who are faced with fewer societal imperatives concerning sexuality at a time when the consequences of sexual decisions are more grave than ever before. However, of all the avenues that have been explored concerning risk-reduction sexual behaviors, the question perhaps least pursued has been the relationship of cognitive skills to responsible sexual behavior. Therefore, this investigation examines the relationship, if any, between one cognitive variable, personal goal-setting, and risk-reduction sexual behavior.

METHODOLOGY

Procedure

An anonymous questionnaire was administered during regular university classes to volunteer respondents enrolled in select lower and upper division courses in the Schools of Arts and Sciences, Business, and Nursing at a midwestern, residential state university. The questionnaire consisted of 127 open-form and closed-form questions in the following areas: sexual history, recent changes in sexual behavior, contraceptive practices, sexually-transmitted disease history, sexual attitudes, sexual guilt, and sexual satisfaction.

Sample

This investigation was part of a larger research project designed to assess whether or not any significant changes in the sexual behaviors and attitudes of college students have occurred in recent years. Given the nature of the research question, the respondents included in this investigation were limited to 644 never-married women. In the interest of creating a more homogeneous sample, those individuals who indicated their sexual orientation as bisexual ($N = 4$) or lesbian ($N = 2$) were not included in the data analyses. Those respondents over age 23 ($N = 12$) were also excluded. The final sub-sample of 626 never-married women included: 32.7%—freshmen ($N = 205$), 15.3%—sophomores ($N = 96$), 24.0%—juniors ($N = 150$), and 28.0%–seniors ($N = 175$).

Statistical Analysis

Given the nonrandom manner in which respondents were obtained and the levels of measurement developed for the data collection process, the chi square test was chosen to ascertain any group differences for nominal data, while one-way analysis of variance was used for ordinal and interval data. For this investigation, the significance level was established at $p < 0.05$. It also should be noted that p values of 0.000 have been reported in those instances where the p value is zero to three decimal places using 0.5 or greater as the basis for rounding values upward.

RESULTS

Goal-setting was assessed using a 6-category Likert scale variable concerning how often goals are set for self ("Always"—"Never"). Initial data analysis disclosed that 19.6% ($N = 122$) of the women "occasionally," 32.9% ($N = 206$)—"Frequently," 26.1% ($N = 163$)—"Very Frequently," and 21.4% ($N = 134$)—"Always" set goals for themselves. Due to small "Ns," the categories of "Never" ($N = 1$) and "Rarely" ($N = 18$) were declared as missing values. For ease of reporting the remaining data analyses, four respondent groups were established: A Group = Always set goals, VF Group = Very Frequently set goals, F Group = Frequently set goals, and O Group = Occasionally set goals.

Values/Philosophy of Life

Because religion is a primary source of values and philosophy of life, the respondent's religious affiliation and religiosity were determined. The denominations most often represented among these women were Mainline Protestant (O Group—45.5%, F Group—38.2%, VF Group—41.3%, and A Group—41.4%) and Catholic (O Group—39.7%, F Group—49.0%, VF Group—49.4%, and A Group—46.6%). No religious affiliation was

Table I. Values/Philosophy of Life Variables By How Often Set Goals

Values/philosophy of life variables[a]	O group (*M*)	F group (*M*)	VF group (*M*)	A group (*M*)	Group mean (*M*)	Group differences		
						F	*df*	*p*
Degree of religiosity	1.56	1.89	1.83	1.91	1.92	7.353	3,618	0.000*
Sexual decisions/by own values/thoughts	3.06	3.05	3.22	3.54	3.20	9.188	3,622	0.000*
Feel optimistic about life	1.97	2.40	2.67	3.03	2.52	34.527	3,621	0.000*
Level of self-esteem	2.70	3.13	3.47	3.58	3.23	24.292	3,622	0.000*
Overall/satisfied w/self	2.38	2.63	2.79	2.85	2.67	10.047	3,622	0.000*
Respect/self	3.80	4.03	4.37	4.48	4.17	9.525	3,621	0.000*

[a]Highest Numeric Value = Most Positive Response.
*Significant at $p < .05$.

reported by 8.3% in O Group, 6.4%—F Group, 3.8%—VF Group, and 7.5%—A Group. These differences between groups were not significant. However, A Group and F Group women considered themselves to be more religious than VF Group and O Group women (see Table I).

The sexual decisions of A Group and VF Group women were more likely to be determined by their own values and thoughts in comparison to the other respondent groups (see Table I). Further, they were more likely to feel optimistic about life. In addition, A Group and VF Group women more often indicated a higher level of self-esteem, being more satisfied with self, and possessing more respect for themselves when compared to the other women (see Table I).

Family Background

No significant differences were identified for the family background variables of mother/daughter attachment, father/daughter attachment, discussion of sexually-related topics with mother or father, or communication with father. However, A Group and VF Group women were more communicative with their mother when compared to the other women [$F(3, 621) = 3.782; p < 0.010$].

Sexual Attitudes

Examining the sexual attitudes of the respondents, A Group women were found to be more likely to expect love as a prerequisite for sexual intercourse and disapprove of cohabitation while A Group and F Group women were more likely to desire to marry a virgin (see Table II).

With regard to acceptance of premarital sexual intercourse during different dating stages, O Group and F Group women were more likely to indicate acceptance of premarital sexual intercourse during casual, occasional, and regular dating than VF Group and A Group women (see Table II). Further, the data are suggestive that O Group women were also more likely to be accepting of premarital sexual intercourse if the sex partners were engaged to be married.

Sexual History

The sexual histories of these women revealed only three significant group differences (see Table III). No significant group differences were found for the following variables: ever masturbated, experienced oral-genital sex, experienced sexual intercourse, experienced orgasm, age/first masturbation, number/lifetime sex partners, times per year/masturbation, and times per year/sexual intercourse. A Group and VF Group women were more likely to feel comfortable with their sexuality than other respondent groups and indicated greater current levels of psychological sexual satisfaction. F and VF Group women reported greater current levels of physiological sexual satisfaction.

First Sexual Intercourse

The F Group and A Group women were, in comparison with other women, more likely to give implied consent for their first sexual intercourse, rather than verbal consent (see Table IV). No significant differences were found for the variables of age at first intercourse, age of first sex partner, relationship to sex partner at time, under influence of alcohol or drugs, contraceptive usage, or physiological or psychological sexual satisfaction with first intercourse (see Table IV). A Group women were more likely to have feelings of guilt after their first intercourse experience in contrast to the other respondent groups (see Table IV).

Table II. Sexual Attitudes By How Often Set Goals

Sexual attitudes	O group (*M*)	F group (*M*)	VF group (*M*)	A group (*M*)	Group mean (*M*)	Group differences		
						F	*df*	*p*
No sexual intercourse w/o love[a]	3.02	3.05	3.04	3.34	3.10	5.096	3,618	0.002*
Approval/cohabitation[a]	3.25	3.01	3.06	2.88	3.04	3.869	3,621	0.009*
Desire/marry virgin[a]	1.74	2.22	2.10	2.31	2.11	4.450	3,568	0.004*
Premarital sex/acceptable/casual acquaintance[b]	3.97	4.00	4.04	4.37	4.08	5.426	3,622	0.001*
Premarital sex/acceptable/occasional dating[b]	3.38	3.59	3.54	3.90	3.60	4.411	3,622	0.004*
Premarital sex/acceptable/regular dating[b]	2.63	3.01	2.91	3.40	3.01	9.031	3,622	0.000*
Premarital sex/acceptable/serious relationship[b]	2.13	2.24	2.32	2.46	2.29	1.536	3,622	0.204
Premarital sex/acceptable/engaged[b]	1.71	2.07	1.93	2.02	1.96	2.588	3,622	0.052

[a]Highest Numeric Value: Most Agreement.
[b]Highest Numeric Value: Most Disagreement.
*Significant at $p < .05$.

Risk-Related Sexual Behaviors

The data strongly suggest that VF Group and A Group women were more likely than either O Group or F Group women to have planned their most recent sexual intercourse experience (see Table V). No significant differences were identified regarding use of contraceptive/most recent sexual intercourse, ever provided a condom to sex partner, use of condom with oral contraceptive, use of condom during oral-genital sex, effect of AIDS/current sexual activity, number of sex partners/past year, or discussed their number of lifetime sex partners (see Table V). A Group and VF Group women, in contrast to O and F Group women, were more likely to ask a new sex partner whether or not he had an STI.

O Group and VF Group women perceived themselves as being at a greater risk of contracting an STI; consumed alcoholic beverages more often; and became more intoxicated when drinking than either A Group or F Group women (see Table V). Despite these risk-taking

Table III. Sexual History Variables By How Often Set Goals

Sexual history variables	O group		F group		VF group		A group		Group total		Group differences		
	(%)	*N*	(%)	*N*	(%)	*N*	(%)	*N*	(%)	*N*	X^2	*df*	*p*
Ever masturbated	43.0	52	47.1	97	49.1	80	53.0	70	48.1	299	2.710	3	.439
Experienced oral-genital sex	78.3	94	76.2	154	78.0	124	83.2	109	78.6	481	2.444	3	.486
Experienced sexual intercourse	74.6	91	69.1	143	71.2	116	75.4	101	72.0	451	2.103	3	.551
Experienced orgasm	68.9	84	77.1	158	75.5	123	78.2	104	75.3	469	3.559	3	.313

	O group (*M*)	F group (*M*)	VF group (*M*)	A group (*M*)	Group mean (*M*)	Group differences		
						F	*df*	*p*
Age/first masturbation	15.06	14.79	15.57	14.48	14.97	1.407	3,268	0.241
Number/lifetime sex partners	3.82	3.56	3.71	3.16	3.57	0.551	3,441	0.648
Times per year/masturbation	52.87	40.64	33.61	35.42	39.98	1.656	3,243	0.177
Times per year/sexual intercourse	81.27	87.95	84.69	104.22	89.22	1.294	3,403	0.276
Level of comfort/sexuality[a]	3.03	3.21	3.28	3.38	3.23	4.813	3,622	0.003*
Physiological sexual satisfaction[a]	2.62	2.71	2.80	2.68	2.71	2.872	3,606	.036*
Psychological sexual satisfaction[a]	2.41	2.58	2.66	2.63	2.58	3.682	3,606	.012*

[a]Highest Numeric Value: Most Positive Response.
*Significant at $p < .05$.

Table IV. Circumstances Related to First Sexual Intercourse By How Often Set Goals

Circumstances/first sexual intercourse	O group (%)	O group *N*	F group (%)	F group *N*	VF group (%)	VF group *N*	A group (%)	A group *N*	Group total (%)	Group total *N*	Group differences X^2	*df*	*p*
Relationship to partner at time													
Steady dating partner	41.6	37	43.2	60	43.9	50	50.5	49	44.6	196	19.099	15	.209
Committed love relationship	37.1	33	37.4	52	37.7	43	39.2	38	37.8	166			
Occasional dating partner	9.0	8	8.6	12	5.3	6	4.1	4	6.8	30			
Casual acquaintance	1.1	1	4.3	6	5.3	6	4.1	4	3.9	17			
Friend	10.1	9	2.9	4	4.4	5	1.0	1	4.3	19			
Person just met	1.1	1	3.6	5	3.5	4	1.0	1	2.5	11			
Voluntarily consented													
Yes—implied consent	30.5	25	49.6	65	29.2	33	35.6	32	37.3	155	13.298	3	.004′
Yes—verbal consent	69.5	57	50.4	66	70.8	80	64.4	58	62.7	261			
Under influence/alcohol or drugs	20.9	19	18.4	26	21.9	25	13.0	13	18.6	83	3.368	3	.338
Used contraceptive	84.6	77	83.0	117	81.6	93	83.0	83	83.0	370	.332	3	.954

	O group (*M*)	F group (*M*)	VF group (*M*)	A group (*M*)	Group mean (*M*)	Group differences *F*	*df*	*p*
Age/first intercourse	17.03	17.04	16.95	16.95	17.00	.097	3, 443	.961
Age/first intercourse partner	18.24	17.99	17.94	18.23	18.08	.644	3, 427	.587
Anxiety/ first intercourse[a]	2.85	2.89	2.91	2.54	2.81	2.231	3,442	084
First intercourse/ physiological satisfaction[a]	2.36	2.61	2.64	2.36	2.51	1.597	3,443	.189
First intercourse/ psychological satisfaction[a]	2.91	2.88	3.16	2.69	2.91	2.324	3,442	.074
Guilt/first intercourse[a]	3.78	3.59	3.87	3.31	3.64	3.833	3,442	.010

[a]Highest Numeric Value: Most Positive Response.
*Significant at $p < 0.05$.

Table V. Risk–Related Sexual Behaviors By How Often Set Goals

Risk-related sexual behaviors/outcomes	O group		F group		VF group		A group		Group Total			Group differences	
	(%)	*N*	(%)	*N*	(%)	*N*	(%)	*N*	(%)	*N*	X^2	*df*	*p*
Planned most recent sexual intercourse	44.9	40	56.2	77	62.6	72	61.7	58	56.8	247	7.589	3	0.055
Ever provided condom/sex partner	68.5	61	69.6	96	58.6	68	64.3	63	65.3	288	3.819	3	0.282
Used contraceptive/most recent sexual intercourse	89.7	78	91.9	125	89.6	103	83.7	82	89.0	388	3.876	3	0.275
Ever used condom/oral–genital sex	37.2	35	31.8	49	33.1	41	33.0	36	33.5	161	.797	3	0.850
Effect AIDS/current sexual activity													
No effect	34.6	28	33.8	44	32.4	35	34.1	30	33.7	137	10.965	9	.278
More selective/sex partners	30.9	25	33.1	43	33.3	36	34.1	30	32.9	134			
Less activity and more selective/sex partners	27.2	22	31.5	41	32.4	35	31.8	28	31.0	126			
Less sexual activity	7.4	6	1.5	2	1.9	2	0.0	0	2.5	10			
Ever diagnosed w/STI	9.1	8	4.3	6	9.6	11	6.1	6	7.0	31	3.442	3	.328
Ever pregnant	4.5	4	5.1	7	2.7	3	7.2	7	4.8	21	2.419	3	.490
Told partner/total number/sex partners													
Yes, actual	70.5	62	72.3	99	67.8	78	79.8	75	72.4	314	14.077	9	.136
Yes, fewer	2.3	2	8.0	11	7.8	9	7.4	7	6.7	29			
Have not discussed	27.0	24	19.7	27	24.3	28	12.8	12	21.0	91			

	O group (*M*)	F group (*M*)	VF group (*M*)	A group (*M*)	Group mean (*M*)	Group differences		
						F	*df*	*p*
Number/different sex partners past year	1.76	1.74	1.65	1.57	1.69	.434	3,405	0.729
Times drink/per year	72.38	61.69	73.86	61.06	66.86	2.749	3,587	0.042*
How drunk usually get[a]	2.33	2.52	2.49	2.72	2.51	5.768	3,588	0.001*
Ask new sex partner/have STI[a]	3.13	3.33	3.44	3.81	3.42	2.726	3,429	0.044*
Liklihood/contracting STI[a]	3.59	3.92	3.78	4.09	3.86	4.573	3,620	0.004*
Use/condom/w/oral contraceptive[a]	2.61	3.02	2.98	2.65	2.85	1.468	3,297	223

[a]Highest Numeric Value: Most Positive Response.

*Significant at $p < .05$.

sexual behaviors, no significant differences were found regarding having contracted an STI or having been pregnant. Of these women, only 7.0% had ever been diagnosed with an STI, with chlamydia, genital herpes, and genital warts, respectively, being most prevalent. And, 4.8% reported having an unintended pregnancy, with 89.1% choosing induced abortion to terminate the pregnancy.

DISCUSSION

The differences that emerged from this study offer a revealing portrait of those most likely to set goals. In terms of philosophy and values, A Group and VF Group women were more religious, optimistic, independent, and self-confident, as can be inferred by higher levels of self-esteem, self-satisfaction, and self-respect. More conservative in sexual attitudes and behavior than O Group and F Group women, they were more comfortable with their sexuality and indicated more psychological sexual satisfaction. They also displayed fewer risk-related sexual behaviors related to alcohol and STIs. This cluster of findings confirming that the cognitive variable of goal-setting behaviors differentiates the sexually responsible college women from those less responsible appears to substantiate Sandler *et al*. (1992) who found sexual decision-making and formal operational thinking to be related.

Philosophy/Values

Linking sexual decisions and moral development, Juhasz and Sonnenshein-Schneider (1987) identified values as the foundation of moral behavior that enables the setting of goals. This research supported their findings when those most likely to set goals evidenced a heightened sense of self-efficacy by determining their own moral values and making sexual decisions based on their own thoughts and values. Respondents who always set goals were more religious and indicated greater optimism about life in comparison to the other women. By all measures, whether greater self-esteem, self-satisfaction, or self-respect, these women seemed to possess the power to produce the desired effect in their lives, an operational definition of self-efficacy. One could wonder if they were merely further along in the adult task of restructuring their personalities so that intellectual and affective transformations compliment each other, Inhelder and Piaget's (1958) prerequisite for life-planning. Or were there other individual character traits in these respondents that were evidenced as an inner-directed personality, confirming Shostrom's (1966) findings? The fact that women who most often set goals and determined their own moral values were also more religious underscores the work of Rest (1993) who identified religious participation as one of the three most important life experiences that facilitate moral development. He cited "making decisions on my own" and "making decisions for the future" as significant variables in the moral development process. These data suggest, however, that the causes of moral development are likely to be multiple and that different life experiences will affect different people in various ways.

Family Background

It was noteworthy that women who most frequently set goals were more likely to have communicative mothers while growing up, the only significant family background variable. Such results confirm the work of Propper and Brown (1986) who found that moral development and decision-making do not simply move in a linear fashion away from parental influence toward independent rational choices. For these women, who demonstrated more independence by determining their own moral values and making their own sexual decisions, there were apparently many mitigating background factors at work in addition to family variables.

Sex Attitudes

While sexual attitudes and sexual behavior are not always significantly correlated, they appear somewhat related in this study. Conservative sexual attitudes were reflected by A Group women, more of whom were religious and supported traditional beliefs. They embraced concepts of love before sexual intercourse, disapproval of cohabitation, and the desire to marry a virgin or at least someone with whom only they had experienced sexual intercourse. That these same women were less supportive of premarital sexual intercourse with a casual acquaintance, occasional dating partner, or regular dating partner was not unexpected.

Sexual History

In terms of sexual history, why were women who most often set goals more comfortable with their sexuality and more psychologically sexually satisfied? The answer may be that more of them were engaged to be married, suggesting that relationship reasoning was likely to be their cognitive schema for sexual decision-making, supporting the D'Augelli and D'Augelli (1977) model. For these more thoughtful goal-setting respondents, this approach to relationships may have translated into more

comfort and satisfaction with their sexuality. The fact that the most religious women were less physiologically sexually satisfied may relate to the role that religiosity plays in guilt about sexual behavior, as found by Davidson *et al.* (2004). That more of the goal-setting women were engaged also supports the seemingly confounding results of fewer lifetime sex partners but more times per year for sexual intercourse.

First Sexual Intercourse

Although there were no significant differences for first sexual intercourse and contraceptive use, data were suggestive that those women most likely to set goals were less likely to have used alcohol. That consent for first sexual intercourse was implied rather than verbal flies in the face of logic since these women were more cognitively inclined respondents, and less likely to have been influenced by alcohol consumption. However, given the only significant finding for first sexual intercourse variables, that A Group women felt more guilty than the others, a clear picture emerges that implicates religion. As Arnett (2000) suggested, religious attitudes are particularly important for this age cohort who are in the process of exploring new world views, and as Davidson *et al.* (2004) found, religion and sexual guilt were positively related for college women. The contraceptive question is indeed a puzzling reminder that our knowledge is far from complete in any research endeavor. Why would these more assertive, inner-directive women who planned their most recent sexual intercourse experience have been less likely to have used a contraceptive at first intercourse? One conjecture for this conundrum relates to the findings that these same women were more religious and held more traditional attitudes about premarital sexual intercourse. Such circumstances point to the lack of progress in changing sexual attitudes to match sexual behaviors in the two decades since Carol Cassell (1984) first popularized the "swept away" phenomenon. Accordingly, planned premarital sexual intercourse incurs more guilt than when one is simply "swept away by the moment." These results beg another question. Has the stereotypical nineteenth century view of femininity, with its emphasis on female submissiveness to males really disappeared (Person, 1993)? Since gendered sexual inhibitions often resolve themselves when women achieve a sense of personal autonomy and self-assertiveness, what happened in the case of these more assertive women? In all probability, their long-held traditional, conservative, religious attitudes superceded the self-assertiveness required for autonomous sexual choices such as giving verbal consent and using contraceptives.

Risk-Taking Sexual Behavior

Perhaps the women who always set goals were most likely to have planned their most recent sexual activity because more of these respondents were engaged and less likely to have sexual intercourse with a casual acquaintance, occasional dating partner, or regular dating partner. When with a new partner they were, however, more likely to ask about STIs and, therefore, less likely to perceive themselves at risk than those who set goals less frequently. Surprisingly then, no differences between groups surfaced for having been pregnant or having had a STI, although data suggest that A Group women were less likely to have had STIs. But the risk-taking sexual behaviors of O Group women differed markedly from their more goal-oriented counterparts: they less often asked if a new sex partner had a sexually transmitted infection prior to having sexual intercourse; consumed alcoholic beverages more often; and became more intoxicated when drinking. These facts support O Group women's perceptions and, perhaps, the reality of a higher risk for contracting STIs.

SUMMARY AND CONCLUSIONS

Characteristics of these women who most often set goals reveal the following profile: inner-directed behaviors such as determining own moral values and decisions; optimism about life; comfort with own sexuality; psychological sexual satisfaction; religious attitudes; conservative sexual attitudes; and safer sex behaviors. Thus, the cognitive variable of goal-setting does appear to differentiate those who are neither dependent nor deficient-oriented in sexual decision-making from those who are, corroborating earlier correlations between inner-directedness and time competence (Shostrom, 1966). These time-competent persons appeared to live more freely in the here-and-now, better able to tie the past and future to the present in meaningful continuity, qualities that were documented in goal-setting behaviors. In Adlerian terms, these women did not view themselves as victims of drives, but their instincts were used in action to form goals. Their behavior was guided by values and goals as well as relationship reasoning. In terms of sexual health, they apparently used their capacity to anticipate the future to make choices, and to create ideals and goals toward which to develop.

Implications

These findings have significant implications for sexuality educators, counselors, and therapists who seek to ameliorate the root causes of sexuality-based problems. The fact that college women who evidenced more sexually responsible behavior were more likely to set goals, a cognitive function, speaks to the need to emphasize cognitive factors in comprehensive sex education programs. In order to promote sexual health and risk-reduction sexual behaviors, new models are called for that acknowledge not only the influence of theories such as reference group and social learning, but cognitive theories as well.

But the transition from theory to practice is not easy. In order to move soundly from basic research to practice, a theory of application is needed, one described by Jerome Bruner (1966) as a theory of instruction. Such a theory differs in goals and content from a theory of learning because it moves beyond the descriptive to the prescriptive by recommending practice procedures (Hilgard and Bower, 1975). Barth *et al*. (1992) called for such programs. Accordingly, programs should provide activities to personalize information about sexuality, reproduction, and contraceptives; training in decision-making, assertiveness, and communication skills; and practice in applying those skills in personally difficult situations. This research suggests that cognitive functions related to goal-setting should also be included in the training process. Models are needed that acknowledge two realities: that myriad factors contribute to making responsible decisions about the use of one's sexuality and that knowledge is necessary for making responsible sexual decisions, but not sufficient, in and of itself (Engel *et al*., 1993). For information to be used, it must be personalized. And, learning to set goals appears to be one way to personalize knowledge about alternatives and their benefits and/or consequences. The process of sexual decision-making involves the use of sophisticated cognitive skills to conceptualize alternatives and long-range impacts. Clear personal norms, as well as social and cognitive competence, are important variables in the equation of responsible sexuality. In summary, concerns about the components of personal, social, and cognitive competence are certainly age-old. And, that the research literature abounds with data proclaiming the consequences of irresponsible sexual behaviors is more than evident. Perhaps the problem facing sexuality professionals who are seeking solutions lies in the conspicuous absence of conceptual frameworks that demonstrate relationships between these two factors: the components of competence and responsible sexuality. Without testable frameworks, theories cannot be formulated with which to establish the needed links between responsible sexuality and causative factors. This study makes one small step toward the development of such a framework with its findings that cognitive developmental factors must be included in any such theory of instruction. But, to effect needed change in future programs and practices, all sexuality professionals, whether theorists, researchers, therapists, or educators, must join together in order to accomplish the thus far elusive goal: purposeful responsible sexuality.

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