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# Factors Affecting Contraceptive Use Among College Students

## Abstract

*This study examines the effect of education on the contraceptive behaviour of college women and the relationship between circumstances of exposure (that is, conditions under which suspected pregnancies take place) and pregnancy test results. Circumstances of exposure examined in this study include risk-taking behaviours with regard to contraception, contraceptive method failure, and misuse of contraception. Results indicate that clinic-based contraceptive education may have an effective role in stimulating use of a birth control method. Of the three circumstances of exposure (risk-taking, misuse, and method failure), positive pregnancy test results seem to be the most associated with risk-taking.*

## Résumé

*Dans cette étude, les auteurs s'interrogent sur les effets de l'éducation sur le comportement des étudiantes d'université en matière de contraception et sur le rapport entre les circonstances de l'exposition (c'est-à-dire les conditions dans lesquelles certaines grossesses soupçonnées ont lieu) et le test de grossesse qui en résulte. Parmi les conditions d'exposition analysées ici, mentionnons les comportements à risque en matière de contraception, l'échec du moyen de contraception et le mauvais usage des contraceptifs. Il ressort des constatations que l'éducation en matière de contraception contribue de manière efficace à stimuler le recours à un moyen de contrôle des naissances. Parmi les trois conditions d'exposition (risques, mauvais usage et échec du moyen), ce sont les résultats positifs au test de grossesse qui semblent les plus corrélés avec la prise de risques.*

Many studies have examined the effects of sex education, feelings of guilt, attitudes toward risk, and other cognitive and affective factors in explaining why well educated college students fail to apply their knowledge

of contraception to their sexual practices. None have considered how the circumstances of exposure, that is, the conditions under which suspected pregnancies take place, affect rates of contraception usage and pregnancy test results.

This study attempts to fill this gap by examining (a) the relationship between circumstances of exposure and pregnancy test results and (b) the effects of birth control education on the contraceptive behaviour of college women. Data were drawn from the Dartmouth College Health Service's records of undergraduate women who requested pregnancy tests between the fall of 1979 and the fall of 1985. The subjects' requests identified them as women who had recently engaged in sexual activity and had some reason to suspect pregnancy. Records were composed of the women's evaluation of the conditions under which the suspected pregnancy took place, including risk-taking, method-failure, and/or misuse of contraception. The clinical records also included results of interviews addressing whether contraceptive education had influenced actual contraceptive use and reduced pregnancies.

### **Background: Contraceptive Behaviour Among College Students**

At best, existing evidence of cognitive factors changing contraceptive behaviour is inconclusive. Godow and La Fave (1979) found that while education changed the sexual attitudes of students in a human sexuality course, it did not affect the types of sexual interactions that students reported. While Dignan, Denson, Anspugh, and C'mich (1985) reported just the opposite, Kirby (1984, 1985) made observations which were similar to Godow and La Fave. He also found that academic educational programs were less effective in changing the contraceptive practices of high school students and reducing pregnancy than were clinic-based programs with an experiential component.

Affective factors such as acceptance of self and others as sexual creatures seem to reflect the developmental issues underlying sexual behaviour. Fisher, Byrne, Edmunds, Miller, Kelley, and White (1979), Byrne, Jazwinski, DeNinno, and Fisher (1977), Gold and Berger (1983), and Rindskopf (1981) suggest that contraceptive use requires an emotional orientation. Byrne (1977), studying women, proposed the "sexual behaviour sequence" model. The four steps of this model require a woman to accept her sexuality by admitting that sexual intercourse is likely to occur and, as a result, taking some public action to acquire contraceptives. The model also stipulates communication with the partner regarding contraception, and the actual employment of a birth control technique. The erotophile, in this model, is able to accept these four conditions and is more likely to actually employ a contraceptive method. Conversely, the erotophobe is unable to accept herself as a sexual being and is more likely to engage in risk-taking in the form of unprotected intercourse.

Similarly, Luker (1975) states that obtaining contraception means acknowledging intercourse; that having contraception means planning intercourse; that continuing contraception over time means to men that the woman is "available"; and that contraception means sexual activities are planned and not spontaneous. Luker further suggests that many women do not feel that they will become pregnant without a contraceptive method. If they do become pregnant, she feels, the advent of legalized abortion makes it easier for both men and women to escape the consequences of their decision not to use contraception.

Studies available in the literature have focused primarily on college students recruited from the student body at large or from human sexuality or psychology courses. While a study conducted at Stanford University in 1978 by Dorman and a follow-up in 1981 by the same researcher (Dorman, 1978, 1981) looked at graduate and undergraduate students who came to the student health center, the emphasis was on contraceptive trends and pregnancy planning. While these studies can provide some insight into the effects of education on behaviour, they do not reveal previous contraceptive behaviour and the consequences of that behaviour.

The study described in this paper is unique in that it examines the actual contraceptive use of college-age women. It looks at why contraception fails and how pregnancy test results relate to students' reported risk-taking, contraceptive-method failure, or contraceptive misuse. It also takes into account the part played by contraceptive education programs.

## Method

### *Subjects*

The study sample was composed of 224 female undergraduate college students who came to the Dartmouth College Health Service between 1979 and 1985 for pregnancy tests. The average age was 20 years.

### *Instruments*

The pregnancy inquiry (included as Appendix One) was developed by the Dartmouth College Health Service to record the circumstances of the suspected pregnancy; circumstances of exposure; whether intercourse was the student's choice and/or alcohol-related; the student's history of contraceptive use; the student's current method of contraception, where contraception was obtained, any difficulties with the contraceptive method; and specific dates of unprotected intercourse. The inquiry also recorded whether or not the student had attended a clinician-taught Contraceptive Clinic or a peer-taught Contraception Road Show. In the case of a positive pregnancy test, the

inquiry recorded the student's decision whether or not to terminate the pregnancy, and it recorded follow-up by clinicians, including counselling, a birth control plan, and referral for prenatal care. In the case of a negative pregnancy test, the inquiry recorded the clinician's and student's review of contraceptive problems and a new contraceptive plan.

### **Data Collection**

This is an archival study that examined the pregnancy inquiry forms which were completed from the fall of 1979 through the fall of 1985. The inquiry was filled out by either the student's clinician or the Health Educator during the initial counselling session at the time of the pregnancy test.

### **Data Analysis**

Given the categorical nature of the data and the multiple variables involved in the study, a hierarchical log-linear analysis, as described by Norusis (1985), was conducted to identify the best model to fit the data. The hierarchical log-linear analysis was performed on the following variables: (a) Pregnancy Test Results (PT) – Positive or Negative, (b) Circumstances of Exposure (CE) – Risk, Misuse, or Method Failure, (c) Attendance at the Contraceptive Clinic (CC) – Yes or No, (d) Symptoms of Pregnancy (SP) – Yes or No, (e) Contraceptive Method Used (CM) – Yes or No, (f) Unprotected Intercourse (UP) – Yes or No.

The three major categories of circumstances of exposure (risk-taking, misuse of method, and method-failure) were condensed from 24 separate items listed in Table 1. This was determined by expert judges (health educator, psychologist, and nurse practitioner), who were in agreement on all items.

### **Results**

Using a saturated-model approach, it was found that the second-order interaction terms were significant. The partial *chi*-squares of all the second-order interaction terms were then tested for significance. Seven of the interaction terms were found to be significant at the *alpha* .05 level. The partial *chi*-square values, percentage and frequencies of all the significant second-order terms involving 2 x 2 interactions are presented in Tables 2 - 6. The significant terms for 2 x 3 interactions are presented in Tables 7 and 8.

As indicated in Table 2, the first interaction term was concerned with students' attendance at a contraception clinic (CC) and the results of the Pregnancy Test (PT) ( $X^2 = 3.84, p = .0499$ ). The data indicated that students who had not been to the CC were more likely to obtain a positive than a negative test result.

**Table 1**  
***Categorization of the circumstances of exposure to pregnancy***

Category	Number of Undergraduate Women Who Report Circumstance*
<b>Risk-taking</b>	
• Had primary method available – did not use because of side effects for either partner; no back-up method used	2
• Primary method left somewhere else; no back-up method used	7
• No penetration; ejaculation near vagina	3
• No intercourse; late or missed menses	6
• Lost, misplaced or ran out of primary method; no back-up method used	5
• Thought “It can’t happen to me”	7
• Had no method – first intercourse	11
• Thought “safe time of the month”	20
• Had no method – not first intercourse	21
• Simply took a risk; became careless	19
• Had primary method available – did not use; conscious decision not to contracept	42
<b>Presumed Method Failure</b>	
• Presumed method failure – IUD	1
• Presumed method failure – BCP’s	1
• Used foam and condoms with each intercourse	2
• Gave history of using cervical cap with each intercourse	1
• Primary method somewhere else; used back-up method	4
• Used spermicidal suppository with intercourse	5
• Used sponge each time	5
• Late or missed menses – on BCP’s	22
• Gave history of using correctly with each intercourse; late or missed menses	32
• Used condom with each intercourse	31
<b>Misuse of Method/Ignorance</b>	
• Used diaphragm without spermicide in dome	4
• Removed diaphragm too soon	4
• Used diaphragm without adding more spermicide for additional intercourse(s)	7

\* Note: Some subjects gave more than one circumstance of exposure to pregnancy.

The second significant interaction, described in Table 3, examined the relationship between CC attendance and students' report of engaging in sexual activity with or without a contraceptive method (CM) ( $X^2 = 6.508$ ,  $p = .007$ ). The results indicated that 88 percent of the students who went to the Contraception Clinic employed a method, while only 75 percent of the students who did not go to the clinic employed a method.

**Table 2**  
*The relationship between contraceptive clinic attendance and pregnancy test result*

Contraceptive Clinic Attendance?		
Comparison Variable:	Yes	No
Pregnancy Test Result		
Positive	40 (49%)	72 (53%)
Negative	41 (51%)	63 (47%)
	81 (100%)	135 (100%)

$n = 216^*$ ,  $X^2 = 3.84$ ,  $p < .05$

\*Frequencies are less than the total sample size of 224 due to the fact that some subjects did not answer all questions.

**Table 3**  
*The relationship between contraceptive clinic attendance and use of a contraceptive method*

Contraceptive Clinic Attendance?		
Comparison Variable:	Yes	No
Contraceptive Method Used?		
Yes	72 (88%)	102 (75%)
No	9 (12%)	33 (25%)
	81 (100%)	135 (100%)

$n = 216^*$ ,  $X^2 = 6.51$ ,  $p < .05$

\*Frequencies are less than the total sample size of 224 due to the fact that some subjects did not answer all questions.

The third interaction term, illustrated in Table 4, was concerned with symptoms of pregnancy (SP) and pregnancy test results (PT) ( $X^2 = 51.99$ ,  $p = .0001$ ). As would be expected, 68% of the students who had symptoms of pregnancy had positive test results while 86% of students who had no symptoms of pregnancy had negative test results.

**Table 4*****The relationship between pregnancy symptoms and pregnancy test results***

Presence of Pregnancy Symptoms?		
Comparison Variable: Pregnancy test result	Yes	No
Yes	97 (68%)	10 (14%)
No	44 (32%)	60 (86%)
	141 (100%)	70 (100%)

$n = 211^*$ ,  $X^2 = 51.99$ ,  $p < .01$

\*Frequencies are less than the total sample size of 224 due to the fact that some subjects did not answer all questions.

The fourth interaction term, described in Table 5, showed that more students who had no contraceptive method (CM) (25%) had symptoms of pregnancy than students who had a contraceptive method (15%) ( $X^2 = 4.16$ ,  $p = .04$ ). The fifth interaction term, Table 6, showed that more students who had attended the CC had symptoms of pregnancy (SP) (40%) than students who had not attended the clinic (29%).

**Table 5*****The relationship between use of a contraceptive method and pregnancy symptoms***

Presence of Pregnancy Symptoms?		
Comparison Variable: Contraceptive Method Used?	Yes	No
Yes	120 (85%)	53 (75%)
No	21 (15%)	17 (25%)
	141(100%)	70 (100%)

$n = 211^*$ ,  $X^2 = 4.16$ ,  $p < .05$

\*Frequencies are less than the total sample size of 224 due to the fact that some subjects did not answer all questions.

As for the 2 x 3 interaction terms in Tables 7 and 8, the sixth interaction term (Table 7) involved the relationship between students' self-reported circumstances of exposure (CE) and the outcome of the pregnancy test ( $X^2 = 8.024$ ,  $p = .0181$ ). The results indicated that positive pregnancy test results were more likely to be associated with risk-taking (60% of all positive

test results) while negative test results were more likely to be associated with method failure (58% of all negative test results).

**Table 6**

*The relationship between contraceptive clinic attendance and pregnancy symptoms*

Presence of pregnancy symptoms?		
Comparison Variable: Contraceptive Clinic Attendance?	Yes	No
Yes	55 (40%)	20 (29%)
No	82 (60%)	47 (61%)
	187 (100%)	67 (100%)

$n = 204^*$ ,  $X^2 = 4.39$ ,  $p < .05$

\*Frequencies are less than the total sample size of 224 due to the fact that some subjects did not answer all questions.

**Table 7**

*The relationship between circumstances of exposure and pregnancy test result*

Pregnancy Test Result		
Comparison Variable: Circumstances of exposure	Positive	Negative
Risk	69 (60%)	38 (35%)
Misuse	6 (5%)	8 (7%)
Failure	40 (35%)	63 (58%)
	169 (100%)	109 (100%)

$n = 278^*$ ,  $X^2 = 8.02$ ,  $p < .05$

\*Frequencies are less than the total sample size of 224 due to the fact that some subjects did not answer all questions.

The final interaction term analysis, in Table 8, examined the role of circumstances of exposure (CE) and whether students used a contraceptive method (CM) ( $X^2 = 48.02$ ,  $p = .0001$ ). Ninety-two percent of the students who had no contraceptive method (CM) attributed the circumstances of exposure to risk-taking, while only 37% of those who had a method attributed their circumstances of exposure to risk-taking.



**Table 8**

*The relationship between circumstances of exposure and whether a contraceptive method was used*

Comparison Variable: Circumstances of exposure	Contraceptive Method Used?	
	Yes	No
Risk	68 (38%)	39 (93%)
Misuse	14 (7%)	0 (0%)
Failure	100 (55%)	3 (7%)
	182 (100%)	42 (100%)

$n = 224$ ,  $X^2 = 48.02$ ,  $p < .01$

Another interaction, although it did not meet conventional levels of significance ( $X^2 = 5.845$ ,  $p = .0538$ ), provides an interesting relationship which bears further discussion. It suggests that during the pregnancy test inquiry, students with positive symptoms of pregnancy (SP) were more likely to report risk-taking as their circumstances of exposure (CE) (52%, or 74 students out of 141), while students reporting no symptoms were more likely to indicate method failure (60%, or 42 students out of 70) as their circumstances of exposure.

### Discussion

Contraceptive behaviour is determined by multiple factors. Results from this study suggest that at least two factors affect college students' contraceptive behaviour. These can be labeled as cognitive and affective. The cognitive factor involves acquisition of knowledge about appropriate contraceptive use, and the affective factor involves feelings which may influence contraceptive behaviour. The cognitive factor may include problem-solving abilities and decision-making regarding whether to take a risk. The affective factor may include feelings of ambivalence, anxiety, and guilt. The use of alcohol and other drugs may suppress cognitive functioning and alter affective feelings, further confusing decision-making behaviour.

The first set of results is concerned primarily with cognitive factors. This study shows that there was a significant relationship between contraceptive clinic attendance and contraceptive use ( $X^2 = 6.508$ ,  $p < .007$ ). The mere fact that a student attended the clinic seemed to imply that the student was ready to accept contraceptive responsibility. Moreover, the data indicate that students who attended the contraceptive clinic were significantly more likely to employ a method than those who had not attended. Effectiveness of the contraceptive clinic may be responsible for this increased contraceptive use. This finding differs from other studies which examined students enrolled in

sex- education courses or workshops (Dignan et al., 1985; Godow & La Fave, 1979; Kilmann, Wanlass, Sabales, & Sullivan, 1981; Kirby, 1985; Voss & McKillip, 1979). These investigators found that sex-education classes increased knowledge and liberalized attitudes, but had no effects on sexual behaviour and contraceptive practices of participants.

Part of the reason for the success of the contraceptive clinic reported in this study may be that the clinic combines education about contraception with one-on-one conferences about actual contraceptive behaviour. Clinicians teach the contraceptive clinics in group sessions, which are used to introduce all contraceptive methods, how the methods work, how to use them and the side effects of each. One-on-one consultations are then used to help students make decisions concerning which method is best for them and to demonstrate how to use that particular method. By providing the experiential component of actually choosing a method most suitable for the student, the contraceptive clinic appears to be more likely to influence actual contraceptive behaviour. This supports the finding of Kirby (1984), that clinically-based educational programs are effective in increasing use of birth control and reducing pregnancies, while purely academically-oriented programs are ineffective in achieving the same goals.

Another reason that this study found contraceptive clinic attendance to affect contraceptive use may have been that attendance at a contraceptive clinic is a prerequisite for obtaining prescription contraception from the college health service. The students who attended the clinic, therefore, were already interested in learning about and using an effective contraceptive method. They were probably more open to learning and more likely to change their contraceptive behaviour than students examined in other studies, who were simply attending a sex-education class to fulfill a course requirement or to obtain general information about human sexuality. It is likely that clinic attendees were in the midst of making decisions about their own contraception and sexuality, which meant that they were ready to directly apply contraception information to real-life experience. This issue of readiness-to-apply-information and how individual experience affects the success of contraceptive education seems to be an important element in the cognitive factor which should be researched further.

As another indication of the cognitive factor, this study found a significant negative relationship between contraceptive clinic attendance and pregnancy test results ( $X^2 = 3.84, p < .0499$ ). This indicates that students who attended the contraceptive clinic were more likely to have negative pregnancy test results. This finding is inconsistent with the work of Kirby (1984), who examined several clinical programs and found that they were not able to reduce pregnancy rates. Our finding might be partially explained by the fact that students who attend contraceptive clinics are more likely not only to use a method, but to use it correctly and consistently.

The contraceptive clinic attendees in this study may fit the description of Byrne's (1977) erotophile. They may have been demonstrating acceptance of their sexuality, having taken the public step of attending a contraceptive clinic to acquire a contraceptive method. Additionally, Rosenstock's Health Belief Model (Hester & Macrina, 1985; Rosenstock, 1974) could also describe the contraceptive clinic attendees as being individuals who had thought through the possible consequences of their sexuality and had taken steps to reduce the risk of becoming pregnant. Another possible explanation involves the idea of the "base-rate fallacy," which is that when people fail to use information in making decisions about the likelihood of the occurrence of an event, they either underestimate or overestimate. It is possible that non-participants in the contraceptive clinic may have committed a "base-rate fallacy" by underestimating the likelihood of pregnancy as a result of unprotected intercourse. Contraceptive clinic participants, conversely, may have had a more realistic view of the possibilities of pregnancy resulting from unprotected intercourse.

This study divided the circumstances of exposure to pregnancy into three categories of risk-taking, misuse of contraception, and method failure (Table 2), and found a significant relationship between circumstances of exposure and pregnancy test ( $X^2 = 8.024, p < .0181$ ). This finding indicates that positive pregnancy test results were more likely to be associated with risk-taking (60% of all positive tests) while negative test results were more likely to be associated with method failure (58% of all negative tests). Furthermore, a finding that was not statistically significant ( $X^2 = 5.845, p < .0538$ ), but was noteworthy, was that circumstances of exposure were related to no symptoms. This suggests that students with pregnancy symptoms were more likely to indicate risk-taking as their circumstance of exposure. The data also suggest that students who reported pregnancy symptoms and had positive pregnancy tests were more likely to have engaged in risk-taking sexual practices. Risk-taking behaviour seems to be an important component in the cognitive factor and bears further investigation.

Due to the archival nature of this study, it is limited to available clinical data. While the results indicate that students who had positive pregnancy tests or pregnancy symptoms engaged in risk-taking activities, we cannot conclusively determine the cause of the risk-taking. Several explanations exist to explain why intelligent students who have contraceptive knowledge do not apply their knowledge to actual use (risk-taking). Byrne (1977) and Luker (1975) suggest that risk-taking is a decision-making phenomenon. They suggest that an important step toward using an effective contraceptive method involves acknowledging to oneself that intercourse is likely to occur, and that contraception is needed to prevent a pregnancy. The risk-taker engages in self-deception and self-denial by not accepting that intercourse will happen and that pregnancy could result if contraception is not used. The use of alcohol and other drugs can also influence the decision-making process of the risk-taker, and needs to be studied further.

Other researchers, including Michael Scheier and Charles Carver (1985), have observed that there are individual differences in optimism and pessimism concerning life's events, but that very little attention has been paid to how these differences influence actual behaviour. Kulik and Mahler (1987) have begun to address this issue. Their research has shown that individuals often demonstrate a tendency to underestimate their own risk for various illnesses and negative life events. This is particularly true of individuals who are basically healthy, as opposed to those who are ill. This tendency, termed "unrealistic optimism," seems to indicate that individuals feel less susceptible to illness or other negative events (such as unintended pregnancy) the more they perceive that event to be controllable. How this theory of unrealistic optimism might relate to contraceptive behaviour is an intriguing subject for future research.

Furthermore, studies have indicated that students are unlikely to be protected by a contraceptive device at first intercourse (Bauman, 1971). (Only 12 out of 224 students in this study, however, indicated that this was their first intercourse.) A number of researchers have also concluded that effective contraception is associated with steady and serious relationships (Fisher, Byrne, Edmunds, Miller, Kelley, & White, 1979; Foreit & Foreit, 1978). Others have gone on to suggest that as sexual partners develop a more serious relationship, they develop a certain degree of communication and openness which results in discussion about the consequences of sexual activity and more effective contraception (Burger & Inderbitzen, 1985; Gold & Berger, 1983; Hill, Peplau, & Rubin, 1983). It is possible that students not involved in a serious relationship tend to be uncomfortable discussing contraception with their partners and therefore use their contraceptive method sporadically. This, again, bears further research.

Affective factors influencing contraceptive behaviour suggest that there are certain feelings closely associated with sexuality and contraception. This study found a significant relationship between pregnancy symptoms and pregnancy test results ( $\chi^2 = 51.99, p < .0001$ ). The data indicated that students with pregnancy symptoms were more likely to have positive pregnancy test results than were those with no symptoms. What is interesting, however, is that students who had no symptoms of pregnancy and who were probably protected by an effective or consistently used contraceptive method were still concerned enough to request a pregnancy test. Although some of these students had late menstrual periods and were concerned about pregnancy for this reason, others had no physical reason to suspect pregnancy at all.

It is also intriguing that more students who had attended the contraception clinic had symptoms of pregnancy (40%) than did those who had not attended (29%).

These results, taken together, point to a group of students who seem to feel excessively worried or guilty about their recent sexual activity and the possibility of becoming pregnant. Even though they employed effective methods and had no pregnancy symptoms, they still requested a pregnancy test. In the case of those who had unprotected intercourse, they also requested pregnancy tests even in the absence of any symptoms. Such a pattern of results would be very difficult to explain on the basis of the cognitive factor alone. While it was never tested directly in this study, it is possible that two feelings responsible for the observed behaviour are worry and guilt. It is also possible that these students lacked confidence about whether their birth control method would work. When faced with a late menstrual period or even in the absence of any symptoms, they requested a pregnancy test "to be sure". Future research is needed to test this worry/guilt hypothesis.

### Conclusion

This study revealed a number of interesting patterns in college students' contraceptive behaviours. First, the study found that educational programs, (in this case, the Dartmouth Contraceptive Clinic) can help to increase effective contraceptive use and negative pregnancy test results among college students. The key factor seems to be that clinicians and educators need to take into account what influences contraceptive behaviour when counselling and educating about birth control. Dartmouth's program appears to succeed because it is a clinic-based educational program that is attuned to student needs. After this study was completed, in fact, the Health Service decided to add special decision-making and problem-solving components to the contraceptive clinics. These additional components teach students to combine all available information to assess their contraceptive problems and take appropriate action. A program is also being developed to help students learn reproductive health issues interactively via a personal computer.

The issue of readiness to apply educational information may also be a critical factor in influencing actual contraceptive behaviour. In this study, students who attended a contraceptive clinic were probably those who were already interested in learning about a contraceptive method. It may be that, in the absence of readiness to apply information, even the most interactive and innovative contraception education program is not effective. This question is an important topic for further research.

It is also clear from this study that risk-taking is an important factor in the contraceptive behaviour of college students; one that bears further research. Risk-taking behaviour brings up issues such as: how the seriousness of relationships, communication between partners, and frequency of intercourse influences contraceptive use; how emotional maturity and readiness to accept sexuality can affect responsible contraceptive behaviour; how locus of

contraceptive control is developed; how individual characteristics such as levels of optimism or pessimism can affect contraceptive behaviours; how male and female attitudes toward contraceptive use may differ; how attitudes toward and availability of legalized abortion affect contraceptive behaviour; and how peer pressure and the role of alcohol and other drugs can complicate the issue of contraception and unintended pregnancy for a college population.

Lastly, this study's results pointed to the existence of a group of students who may feel excessively worried or guilty about their recent sexual activity and the possibilities of becoming pregnant. This is an important issue, given the fact that at least a part of the task of college and university contraceptive clinics, human sexuality courses, and contraceptive counselling is to help young adults develop security and maturity about their own sexuality. The other point is to provide students with reliable methods of contraception and safer sex techniques so that they will not become pregnant, develop sexually transmitted diseases, or be excessively worried about their sexual activities. Further research is needed to explore the hypothesis that many college students may feel worried and/or guilty about their sexual activity. Work in this area would be useful in helping health educators, clinicians, and peer educators to: increase students' levels of communication about sexuality and birth control; help students decide if and when to be sexually active; help students negotiate how to share contraceptive responsibility and feel secure about the methods they choose; and counsel students about the often difficult task of developing their own sexual identities as responsible young adults.

## NOTE

The "Pregnancy Inquiry", a two-page questionnaire, may be obtained when writing for reprints to Dr. B. Conant Sloane, Health Education Department, Dartmouth College, 7 Rope Ferry Rd., Hanover, NH, USA 03755.

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