Knowledge and Attitudes of College Students About Venereal Disease and its Prevention

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THE "VD SCENE" is changing dramatically. The large numbers of syphilis and gonorrhea cases are not the only concern. Gonococcal resistance to penicillin and other antibiotics is increasing; more men with asymptomatic gonorrhea are being identified; gonococcal pharyngitis is mounting; once relatively rare complications from untreated gonorrhea are being seen more frequently; and the incidence of congenital syphilis is on the upswing (*1*). Systemic gonorrhea is becoming more common; both symptomatic and asymptomatic rectal gonorrhea are appearing; and some strains of gonorrhea are showing increased resistance to antibiotics (*2*). "Reported epidemics of gonococcal ophthalmia neonatorum, case reports of gonococcal arthritis, and the increasing numbers of women with chronic pelvic inflammatory disease secondary to previous gonococcal infection" (*3*) also indicate the seriousness of the situation. And the focus of educational efforts directed at the venereal disease scene is also changing. More emphasis has been placed on prevention, although a 1972 report indicates that this aspect generally is still inadequately covered in educational materials (*4*).

The education given health professionals about venereal disease needs to be revamped so that they will find it easier to accommodate to the changing venereal disease scene. Still a new approach to this aspect of their education is not likely to prevent the occurrence of new cases of disease or lead to disease control. If, however, these professionals are prepared to participate in meaningful communication with students at the various educational levels and with other members of the community while sharing their newly

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acquired information, they may serve as catalysts in helping themselves and others to form the personal and societal attitudes that will be needed to make disease-free sexual activity a reality some day. A step in this direction would be the provision of practical information about condoms. People need to be informed about the use of these preventive devices and "the wise selection of partners" (*5*). Further, health professionals need to broaden their understanding of human sexuality and of the natural and wide variations in sexual lifestyles if educational communication is to remain meaningful.

The Survey

My study was designed to examine the knowledge and attitudes of college students about venereal disease and its prevention. I sought insights into ways to provide information about prevention that would be helpful for persons planning venereal disease educational programs. A questionnaire was therefore devised, pretested, evaluated, and reconstructed. It had five sections, designed to obtain information on the student's background, his or her knowledge of venereal disease and its prevention, the student's attitudes, and sexual activity. In the sections on background information and prevention information, the questions were multiple-choice, while in the attitudes section, the students were required to respond to statements that were measured by semantic differential scales. In the other two sections, the students filled in and checked appropriate boxes.

Study Sample

Under my direction, six psychology research students conducted the sampling at Ventura College, Ventura, Calif. Since a truly random sample of the college population could not be drawn because of administrative constraints, I decided to draw students from a wide variety of classes (in folk dance, in the agricultural, behavioral, and social sciences, in the hard sciences, in mathematics, in police science, in the political sciences, and in health and physical education courses). Arrangements were made with instructors of the classes to permit the six psychology research students to enter class sessions as they began and introduce the questionnaires without mentioning the subject of concern. The students in the classes were informed that completion of the question-

naires was voluntary, but that it would be appreciated if they would fill out the questionnaires as completely as possible. The questionnaires were then passed out; they were collected after completion (15-20 minutes later). Students who had already been given the questionnaire in another class were asked not to participate a second time.

Of the 322 questionnaires collected, 30 were rejected for grossly incomplete data; 292 questionnaires were available for general study (156 from men and 136 from women). On the basis of the information supplied by the students on the questionnaires, I grouped the students according to sex, educational level, sexual experience, and whether or not they had had a venereal disease; nonspecific vaginitis and nonspecific urethritis were included under the heading "venereal disease." The number in each of the groups varied depending on the completeness of the answers in the applicable sections of the questionnaire.

The background data supplied by the sample students indicated that they were fairly representative of the population under study. The majority were Anglos, with Mexican Americans, blacks, Asians, and American Indians also represented. Fairly similar proportions of the respondents anticipated completion of 2 years of college (27 percent), 4 years of college (39 percent), and graduate study (34 percent). They had a wide range of religious backgrounds. Seventy-one percent were 18 or 19 years old, 23 percent were 20-25, and the others were either over 26 or were 17.

Table 1. Respondents' knowledge of venereal disease, by sources of information and by sex

Sources of information	Men		Women	
	Knowledge [1]	Prevention [2]	Knowledge [1]	Prevention [2]
Schools plus group (high school and college classes)	14.7	6.1	14.5	4.5
Diseased group (persons who have had venereal disease)	14.5	5.4	14.3	4.2
Schools group (predominantly school classes)	13.8	5.2	13.5	5.2
Self-learning group (TV, radio, reading materials)	13.5	5.3	13.0	4.3
Interpersonal group (predominantly friends and parents)	12.1	5.1	11.2	4.1

[1] Possible score of 21.0, based on mean number of questions correctly answered.
[2] Possible score of 9.0, based on mean number of questions correctly answered.

Results

Table 1 shows the respondents' knowledge of venereal disease, by sex and source of information, based on the mean numbers of correct answers on the questionnaire. The levels of knowledge of the general facts about venereal disease were consistently low. As I found in earlier studies (*6,7*), the better sources of information appeared to be schools and the communications media. This observation was especially true for respondents who reported their source of information as "schools plus" (that is, schools plus college). They scored the highest among all groupings. Nevertheless gaping holes in their knowledge about prevention of the venereal diseases were apparent for the respondents who gave schools and communications media as their sources of information. The same was true for students who gave other information sources.

Tables 2 and 3 were constructed to provide more details about the respondents' knowledge of specific aspects of venereal disease. They show the percentage of the respondents, by sex, choosing incorrect statements about venereal diseases as true and the percentage not choosing correct statements as true.

Of the five groups classified by source of information, the group that chose wrong answers most often was the one that obtained its information through interpersonal communication with friends and parents. There was no significant difference among the other four groups in the percentage of incorrect answers. The average number of incorrect answers chosen by men was 3.1 in respect to knowledge of venereal disease and 0.7 in respect to prevention; by women, 3.0 in respect to knowledge and 0.8 in respect to prevention.

Respondents were asked to rank five "helpful" methods of venereal disease prevention from a given list according to the way they felt about using the methods themselves (table 4). The men more often ranked selection of partners at the top of the list (51 percent), while the women more often put abstinence in first place (53 percent); both sexes put urination last (32 percent of the men and 61 percent of the women).

Table 5 shows male and female students' attitudes about venereal disease prevention in terms

Table 2. Incorrect statements about venereal disease with percentage of respondents choosing them as correct, by sex

Statements	Men	Women
1. The VD blood test is used to help identify syphilis and gonorrhea	45	32
2. The VD blood test will prove whether a person has VD or not	29	24
3. Persons who have recently acquired a venereal disease that has not been diagnosed or treated have persistent pains in their genital organs and pelvic region	31	21
4. Syphilis when untreated in its early stage may create a body rash and sores on several parts of the body 2 weeks after infection begins	54	21
5. Gonorrhea which remains untreated could seriously disable a person within a couple of years	42	23

of their agreement or disagreement with 11 statements about prevention, as depicted in the means from differential scales.

Analysis of the questionnaires also revealed the following attitudes:

1. Virgins, especially female ones, expressed an unwillingness to be vaccinated against venereal disease were a vaccine available (80 percent of the men, 84 percent of the women).

2. Persons who have had sexual intercourse (73 percent of the men, 60 percent of the women), as opposed to virgins (82 percent of the men, 82 percent of the women) think that they are more likely to get a venereal disease, are more accepting of it and of prevention, and would be much more willing to be vaccinated. The virgins think they are not likely to get venereal disease, are less accepting of it and of prevention, and are unwilling to be vaccinated.

3. Virgins, especially male ones, would not expect a condom to prevent disease, to be convenient to use, or to be sensitive tactually (89 percent of the men, 70 percent of the women).

4. As measures for prevention, virgins indicated a preference for abstinence rather consistently (62 percent of the men, 91 percent of the women), whereas sexually active respondents preferred to use selectivity in sexual partners and condoms (85 percent of the men, 74 percent of the women).

5. In responses to open-ended questions, a substantial number of respondents indicated that there was a need for periodic testing of the sexually active to prevent spread of venereal disease (44 percent of the men, 53 percent of the women).

Table 3. Correct statements about venereal disease with percentage of male and female respondents not choosing them as correct

Statements	Men	Women
1. The VD blood test is used to help identify only syphilis	83	48
2. The VD blood test cannot be relied on to be correct each time	83	58
3. Syphilis can be passed or caught during sexual, oral, or anal intercourse, close physical contact, and by kissing under certain circumstances	29	30
4. Gonorrhea is usually caught or passed during sexual and anal intercourse	38	22
5. Venereal diseases are treated usually with penicillin injected into the hips	63	40
6. Syphilis when untreated in its early stage may create an open sore at the place the organisms entered the body 10–90 days after infection begins	42	27
7. Once the first signs of syphilis or gonorrhea have gone away and the person has not been treated, the organisms causing these diseases may be "silently" damaging the body	33	21
8. Syphilis which remains untreated has generally different sets of symptoms that come and go at different times within the first 2 years of infection	60	43
9. Gonorrhea when untreated and in its very early stage is usually not noticed by women	44	15
10. Gonorrhea when untreated, and in its very early stage is usually noticed in males by a pus-like discharge from the end of the penis	38	24
11. Gonorrhea which remains untreated may cause no serious problems whatsoever	96	62
12. Venereal diseases can be prevented by using certain methods	37	29
13. Venereal diseases are sometimes prevented when males wear a rubber during intercourse	35	31
14. Helpful and safe methods to use for preventing venereal diseases: *for syphilis*—washing of the genitals (possibly the body) with warm water and soap immediately following intercourse or close physical contact (mainly for males); *for gonorrhea*—urinating immediately (as soon as possible) after intercourse (helpful for males, rarely for females)	70	51

Discussion

Just as a person's attitudes and behavioral patterns contribute to his or her misuse or rejection of contraception (*8*), the misuse and rejection of methods for prevention of venereal disease may arise from a person's denial of the possibility of infection, of the effectiveness of preventive methods, or of his or her personal responsibility for prevention.

Conflicts about love, sex, and venereal disease, doubts as to whether or not such disease is some-

thing even to worry about preventing, feelings of guilt about premeditated sexual activity or about any sexual activity, the use of sex or venereal disease to get attention, and all the myriad reasons for sexual expression affect the use or misuse of methods for venereal disease prevention. Whether or not people can be better oriented to prevention in the future depends on many factors; one seemingly important one is their sexual lifestyles. The openness and ease with which people experience their sexuality greatly influence their attitudes toward venereal disease prevention and, for example, the purchase of condoms. Even if people move in the direction of greater acceptance of their sexuality, the social context of the purchase of the condom requires urgent attention. One man pointed out his dilemma this way: "Admittedly, it is still embarrassing for me at age 31 to buy condoms at a drugstore where very often there is a mixed crowd waiting behind me, or where the cashier is a middle-aged women with a readily called-on dirty look" (*9*). And despite the good intentions of health professionals, some people have a fear of "being hassled" by pharmacists and others (*10*).

In venereal disease prevention, Porter has observed that "Knowledge alone is not sufficient . . ." (*11*). Goldsmith and his co-workers concluded that "An attitude accepting one's own sexuality is a more important correlate with contraceptive use [which is in many respects similar to venereal disease prevention] than such other factors as exposure to sex education, knowledge of sex and contraception or religious background" (*10*). There are, however, misconceptions that need to be countered and divergent attitudes to be acknowledged when education programs are being planned. As one respondent put it, and the point was echoed by others, "By using a rubber (or asking a guy to use one), you're implying there's something wrong with the other person, that maybe they're dirty." Perhaps these statements reflect the myth that only dirty people get venereal disease.

Table 4. Respondents' preference for venereal disease prevention methods as shown by their ranking of five helpful but not absolute methods

Prevention methods	Mean value of preferences (1–5) [1]	Percentage specifying this rank
Ranking by men [1]		
1. Selection of partners	1.7	51
2. Condom	2.6	36
3. Washing	3.0	29
4. Abstinence	3.4	36
5. Urination	3.8	32
Ranking by women [1]		
1. Abstinence	2.0	53
2. Selection	2.2	40
3. Condom	2.7	39
4. Washing	3.0	47
5. Urination	4.0	61

[1] The number 1 is the highest preference, 5 the lowest.
NOTE: Prevention methods were explained in survey questions.

A venereal disease prevention message may have to be changed to deal with varying attitudes. Fears related to buying condoms, expectations that condoms will not be tactually sensitive, and ambivalence about introducing a condom into a relationship can be approached in a frank and factual one-to-one relationship or in small group settings. These are vital areas of concern in presenting the message about condoms since these devices relate so directly to the sexual behavior and emotions of people who are contemplating actions to prevent the contraction or transmission of disease.

Although there is some opposition to using condoms, evidence indicates that young men will use them when they are free and easily accessible (*12*). Darrow, in reporting on their use, says that men prefer lubricated to nonlubricated brands (*13*). Sixty-three percent of the male respondents in my study favored the use of condoms if they were available at no cost, while only 39 percent of the female respondents expressed enthusiasm at this prospect. Both sexes, however, had favorable attitudes about the importance and usefulness of disease prevention methods.

The attitudes and preferences of the men and women in this study, as revealed by their responses to the questionnaire (see Results section and tables 4 and 5), reflect what has been called the sexism in our society. It is becoming trite to say that men and women are encouraged to form different sexual attitudes and behavioral patterns based entirely on their biological sex. The issue of sexism is complex. It is important, however, that health professionals, when devising educational programs, acknowledge their own sexist bias and that of their target populations. I believe that we should try to eradicate rather than encourage

Table 5. Attitudes of respondents toward venereal disease prevention as revealed in their reactions to statements about venereal disease

Statements	Means of attitudes [1]	
	Men	Women
1. It is very hard to tell when a rubber is being used during intercourse	3.9	4.7
2. Prevention methods are time consuming and bothersome	4.2	5.4
3. I expect to contract a venereal disease this year	5.4	5.9
4. I would be very worried if I contracted a venereal disease this year	2.5	2.3
5. VD prevention methods are not realistic	4.8	5.7
I don't think they'll work	4.9	5.3
6. Rubbers are too expensive to use or ask someone to buy	4.4	5.3
7. I would use, or have used, rubbers if they were available at no cost	2.1	3.9
8 Rubbers are not very sensitive and this is why I don't like them during intercourse	2.9	2.4
9. Rubbers can be purchased easily with little embarrassment at the drug store.	2.7	2.4
10. Rubbers should be carried in wallets and purses as a disease preventer	2.6	3.1
11. If there were a vaccine for all venereal diseases, I would get it immediately	2.2	2.1

[1] The attitude range was 1–6, with 1 indicating strong agreement and 6 strong disagreement.

or perpetuate the sexism that affects venereal disease education programs, because sexism seems to be a deterrent to effective preventive action.

Extensive examination of the gaps in knowledge about venereal disease and its eradication revealed in my study and in previous work (*5–7, 14, 15*) suggests that a key factor is the subject matter in question and the attitudes and value orientation of the "information givers." The personal and societal attitudes of the persons supplying the information about sexuality and venereal disease sometimes hinder free-flowing discussion. As a result, the amount of information that the target of the information internalizes and retains is often small. Although people usually engage in freer discussions with their peers and many of the respondents listed their friends as the sources of their venereal disease information, polarized attitudes often characterize peer group discussions of this subject. Many of the peers may well express the attitude that venereal disease is "no big deal;" others may not want to be identified with it (do not want to talk about the possibility of contracting it, let alone have to be tested for it or take measures to prevent it). Thus the information-givers need to provide opportunities for the information recipients to share and exchange their knowledge—even their misconceptions—with others in an atmosphere in which misconceptions can be knowledgeably and postively corrected. To foster such an atmosphere, the information-giver needs not only adequate information but the ability to communicate factually and openly without pronouncing judgment.

A single venereal disease education session or a series of sessions in junior high school, high school, or college or at a clinic or the reading of a pamphlet is not an adequate way for a person to become informed about venereal disease. As the scores of the respondents in this survey (based on their venereal disease knowledge) indicate, people seem to retain and comprehend better the facts about venereal disease when their education about it has come in "waves" over an extended period—with each wave at a more sophisticated level than the previous one. The secret of successful venereal disease education, I believe, lies in effective time structuring and in the prevention of "learned" misconceptions.

Results of my survey indicating that the persons who had had a venereal disease knew little, if any, more about venereal disease prevention than virgins suggest that education about prevention in public clinics is inadequate. Even though tight schedules limit the time that the clinic staff can spend with a patient, something in the line of prevention could be done for each person. That "something" might be only a customized "with it" pamphlet on prevention with an attached package of condoms or a discussion with a trained nonmedical person.

Conclusions

Schools, especially when providing followup information at various grade levels, along with books, pamphlets, radio, television, newspapers, magazines, and other agents for self-learning about venereal disease, appear to have been the best sources of venereal disease information for respondents in this study.

Respondents who had had a venereal disease understood what causes venereal disease, that infectiousness can last longer than apparent symptoms, that a disease can be caught over and over, and that venereal disease can cause serious damage. They were confused, however, about the specific late effects or complications.

Female respondents were more aware than male respondents of the existence of asymptomatic infections and the effects of venereal disease on pregnancy and birth. Respondents did not understand the broad symptomatology of syphilis and gonorrhea, their diagnosis and treatment, contraction and transmission, the dynamics of their progression, or prevention. In terms of sexual experience, current sexual activity, knowledge of venereal disease, sex group, and whether or not they had ever had had a venereal disease, nonspecific urethritis, or vaginitis, the respondents had divergent attitudes about prevention, and their choice of preventive methods also varied.

How generalizable the data from my survey are is not clear. The following implications of the survey would, however, seem to have widespread application.

1. Venereal disease education should incorporate the latest thinking on prevention (especially in respect to the use, cost, and tactual sensitivity afforded by various condoms). Diagnostic and treatment facilities need to be convenient for the target population to reach. Printed information should be readable and word games avoided (*16*).

2. Venereal disease clinics need to provide information covering the specifics of prevention and assist clients in its practice, for example, by distribution of condoms.

3. More exploration of men's and women's responsibilities in sexual relationships seems needed. Examples of this approach might include discussions of each person's emotional commitment, each person's separateness or share in pregnancy and birth, and the responsibilities of each for the prevention of disease and pregnancy.

4. Prevention programs have a greater likelihood of success if they provide young people with opportunities for discussion focusing on the relationship between different sexual lifestyles and the feasibility of different prevention alternatives. Learning opportunities to facilitate people's acceptance and understanding of their own sexuality not only seem long overdue, but would complement such efforts.

5. The staffs of public health clinics and other facilities for young people should encourage the sexually active to get periodic checks for syphilis and gonorrhea. The staffs should not make clients feel that they have needlessly bothered them if such periodic checks reveal no infection.

6. Free distribution of condoms may be feasible. Information on their proper use, availability, variety, and cost should be distributed at the same time.

7. Pharmacists and others engaged in the sale of condoms will aid their customers if they exhibit supportive attitudes and provide them with meaningful information about venereal disease and local facilities for treatment.

To realistically understand today's venereal disease scene, we need to move in different directions than we have in the past and to engage in further behavioral study.

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