

Effect of Sex Education on the Sexual and Contraceptive Practices of Female Teenagers in Mexico City

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ABSTRACT. After having carried out a review of the literature on the relationship between sex education and sexual and contraceptive behavior, the National Research Council (1987) recently concluded that the existing evaluation of the effects of sex education on sexual and contraceptive practices is helpful but not sufficient. One possible explanation for the different results obtained are the diverse sociodemographic characteristics of the sample or samples of teenagers under consideration. Another aspect that can account for the differences found in the literature focuses on the areas covered in the course. In Mexico no studies have been carried out which deal with the relationship between sex education and sexual and contraceptive behavior. A study was carried out with 392 female teenagers between 16 and 17 years old of lower and middle lower socioeconomic level. Results show that the mere fact of attending a sex education course did not affect the initiation or continuation of sexual activity, contraceptive behavior or even the perception of accessibility to contraception. Providing information on sexuality, relationship with the

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partner and where to obtain contraceptives does not have an effect on sexual activity. Receiving information on pregnancy prevention and on where to obtain contraceptives was found to be related to contraceptive use. Although less dramatic, information about the relationship with the partner and on sexuality also produced increases in contraceptive use.

INTRODUCTION

The relationship between sex education and sexual and contraceptive behavior has been widely studied in the United States (e. g., Breasted, 1970; Scales, 1981; Zelnik and Kim, 1982). However, a series of contradictory results have been reported both in regard to sexual activity and contraceptive behavior. For example, Parker (1982) argues that classroom sex education promotes sexual activity and Marsiglio and Mott (1986) report that 15 and 16 year old females who took a sexual education course were more likely to have had sexual intercourse; while Zelnik and Kim (1982), based on data from the Johns Hopkins National surveys of adolescents, found that sex education in school did not result in increased sexual activity among teenagers, Kirby (1984) finds no relation between the probability of initiating sexual activity and having had sex education, and Dawson (1986) finds no consistent relation between sex education and sexual intercourse. Finally, contrary to Parker's (1982) and Marsiglio's and Mott's (1986) position, Furstenberg, Moore and Peterson (1982), based on data from the 1981 National Survey of children, conclude that 15 and 16 year olds who have been exposed to sex education are less likely to be sexually experienced. With respect to the relationship of contraceptive use and sex education, while Kirby (1984) found no effects of sex education on contraceptive use, others have found a positive relation between sex education and contraceptive behavior (Cvetkovich and Grote, 1980; Zelnik and Kim, 1982) and contraceptive knowledge (Dawson, 1986).

In congruence with the above mentioned contradictions, after conducting an extensive review of the literature in this field in the USA, the National Research Council (1987) recently concluded that the existing evaluation of the effects of sex education on sexual and

contraceptive practices is helpful but not sufficient. One possible explanation for the different results obtained are the diverse sociodemographic characteristics of the sample or samples of teenagers under consideration. For example, while some have focused their research on National Surveys (e.g., Zelnik and Kim, 1982; Furstenberg, Moore and Peterson, 1985), others have worked with very specific samples (e.g., Cvetkovich and Grote, 1980). Rather than dismissing the findings, emphasis should be placed on clearly specifying the characteristics of the diverse socio-cultural and age groups under study. On the other hand the difference created by these variables points to the importance of conducting further research with clearly defined samples of adolescents from different socio-cultural backgrounds, among which are those from underdeveloped countries.

Other aspects that could account for some of the different results reported in the literature are those related to the characteristics of the sexual education class. For example, the content or areas covered in the course are rarely considered in most of these studies making it impossible to know what the teenagers are responding to.

In Mexico most studies with respect to teenage pregnancy and use of contraception (e.g., Aznar and Lara, 1967; Garcia, Bravo and Mondragón, 1981) have been with small non-representative samples.

However, the problems created by teenagers' sexuality are quite prevalent, the Mexican Surveys of 1979 (*Encuesta Nacional de Prevalencia de Uso de Metodos Anticonceptivos*, 1979) and 1982 (*Encuesta Nacional Demografica*, 1982), indicate that 12.9% and 12.1%, respectively of live births in Mexico were to mothers between 15 and 19 years of age. Results of a study carried out by the Instituto Mexicano del Seguro Social (1984) show that 10.3% of the total number of maternal deaths related to the fetus were in women younger than 20 years of age.

Given that no studies have looked at the relation between sex education, its content and sexual and contraceptive behavior in Mexico, the object of the present research is to analyze the relationship that exists between these variables among female adolescents in Mexico City.

METHODOLOGY

The sample was drawn based on two different procedures: (1) A probabilistic household sample. (2) Given that the number of adolescents in this sample who reported having had sexual intercourse was low, adolescents in the probabilistic household sample were asked to provide information of peers who they thought had had sexual intercourse and who would like to participate in the study. People in Mexico still welcome the opportunity to participate in this kind of research since it gives them a chance to talk about a relatively little talked about area. This was confirmed in this study. No parental or other kind of authorization is customary in Mexico for psychosocial research with adolescents.

1. For the first part of the sample, a probabilistic household sample of Mexico City was designed. Five areas (*delegaciones*) of the city were randomly selected, a list of socio-economic levels (based on BIMSA, 1982 Mercadological Map, the Electoral Map of the Federal Electorate Commission (Comision Federal Electoral, 1978) and personal visits) was developed. A number of sections proportional to each of the colonies which form each of the sections which form each of the areas, was selected.

In the Census of Mexico (Secretaria de Programación y Presupuesto, 1982) it is reported that 4,596,477 women live in Mexico City. Of these, 24.5% are between 10 and 19 years old (CONAPO, 1982).

Considering these numbers and based on the formula shown in Figure 1, 865 adolescents between 12 and 19 years of age (40.8% between 12 and 15; 36.8% between 16 and 17; and 22.6% between 18 and 19 years of age) were interviewed, insuring a .02 significance level and .04 sampling error. The households were selected through a self-weighted, multistage scheme which included the selection of conglomerates proportional to size. Up to 7 visits were simultaneously collected in all areas of the city. The field supervisors checked each interview the same week it was applied and in case of doubt visited the household with the interviewer and waited nearby. The same procedure was followed throughout the data collection phase.

FIGURE 1

$$n = \frac{t^2 \times s^2}{E^2 + t^2 \times s^2}$$

$$N$$

where:

t = t (student)
 s = standard deviation
 E = sampling error
 N = size of the population
 n = size of the sample

A total of 3505 households were visited. Nine hundred and twenty-seven females were eligible. Ninety three and three tenths percent of the total number of eligible females were interviewed. Six (.6%) rejections were reported, of which two were of teenagers between 16 and 17 years of age, the focus age of this report. The rest of the teenagers who were not interviewed were absent in all visits.

The second sample was formed by 351 teenagers between 12 and 19 years of age; 4.3% between 12 and 15; 19.08% between 16 and 17; and 76.64% between 18 and 19 years old. They were contacted through adolescents in the probabilistic household sample. Three hundred and sixty six were originally contacted. Ninety five and five tenths percent were interviewed. Fifteen rejections (4.1%) were reported, of which 4 were of teenagers between 16 and 17 years of age. The object of the second sample was to increase the number of teenagers who had had sexual intercourse, in order to enable comparisons between groups.

With the object of insuring the comparability of the adolescents contacted through the two types of sampling procedures, an analysis of sex education class attendance in the two samples was carried out. No differences were found. It was, therefore, considered that

adolescents contacted through each of the two sampling procedures could be grouped for further analyses.

The instrument was individually applied to a total of 1244 adolescents. Of these, 392 were between 16 and 17 years of age. The anonymity of the subjects was assured to them, and they were each assigned a number.

Instrument

The questionnaire was formed mainly by closed-ended questions which referred to sexual and contraceptive practices, if the adolescent had taken a sexual education course, place where it took place and its content. Questionnaires were individually applied by young female interviewers who had extensive training and experience in interviewing in this field. They made sure no one was present or nearby. They were generally conducted in the home or right outside of it. Sometimes they would be made in a nearby park or cafeteria.

RESULTS

In order to assess possible differences in the educational level of parents (0 = no schooling; 1 = elementary; 2 = junior high; 3 = high school and 4 = college), of adolescents who took vs. did not take a sexual education course, separate t-tests were conducted for mothers' and fathers' education. For both fathers ($t(391) = 4.93$; $p < .001$) and mothers ($t(391) = 4.40$; $p < .001$) a significantly higher level of education was found in the parents of adolescents who had taken a sex education course ($\chi = 1.21$ vs. $\chi = .91$ and $\chi = 1.39$ vs. $\chi = .98$ respectively).

Of the total sample, 211 adolescents had had a sex education course and 178 had not. As can be seen in Table 1, the percentage of sexually active adolescents among those who took a sex education course and those who didn't is almost the same. In both groups, about one fourth of the interviewed adolescents had engaged in sexual intercourse. Furthermore, among those adolescents who were sexually active, there was no difference in the percentage who had used some form of contraception (see Table 2). These sets of results

Table 1

PERCENT OF SEXUALLY ACTIVE ADOLESCENTS IN RELATION TO HAVING
TAKEN A SEXUAL EDUCATION CLASS OR COURSE

²
χ for independent groups

	Had course	No course	p
Number of sexually active adolescents	23.69% (50)	25.28% (45)	.10 N.S.

Total number of adolescents who responded to these questions

211 178

Table 2

PERCENT OF CONTRACEPTIVE USING ADOLESCENTS
 (AMONG THOSE ALREADY SEXUALLY ACTIVE)
 IN RELATION TO HAVING TAKEN A SEXUAL EDUCATION CLASS OR COURSE

	Had course	No course	χ^2 For Independent groups	p
Number of contraceptive users	62% (31)	62.3% (28)	-----	N.S.
Total number of sexually active adolescents	50	45		

indicate that for this Mexico City sample there is no relationship between sexual education courses and 16-17 year old adolescent sexual activity and contraceptive behavior.

A further breakdown to extract perception of access to contraceptives, showed no difference between the adolescents who did not take a sex education course and those who did.

With regards to knowledge about contraception and pregnancy, a consistently higher percentage of course takers correctly answered a set of questions dealing with this content area. However, significant differences were only present for the questions about condom use, of possible pregnancy regardless of lack of arousal in females, and independently of having only sporadic sex.

A second interesting finding presented in Table 3 is the high percentage of variance within the groups from one question to another. These variance differences could point to : (1) areas where popular knowledge is different from scientific findings, and (2) areas where the course content and treatment could be improved.

The answers to the questions on attitudes and beliefs about sex and contraception show a consistently higher percentage of teenagers who took a sexual education course who take a more responsible and equalitarian position towards sex and contraception. These adolescents had significantly higher percentages of agreement with statements indicating it's not a sin to use contraception and it's OK for females to have sex before marriage than those adolescents who did not take a course. As with knowledge, the high in group variances across the different statements indicates the importance of cultural and informational variables in the determination of inconsistent knowledge and attitudes in regards to sex and contraception (see Table 4).

In terms of the content of the courses, 91% of the adolescents who were in a sex education class reported they received information regarding menstruation, 81% about how one gets pregnant, 68% about how to prevent pregnancy, and 46% on where to obtain contraceptives.

In order to see if particular content areas covered in the sex education courses had any relationship with sexual activity, those adolescents who took a course were divided into groups who either received or did not receive the specific information. Table 5 shows

Table 3
 KNOWLEDGE ABOUT CONTRACEPTION AND PREGNANCY DEPENDING ON
 ASSISTANCE TO A SEXUAL EDUCATION COURSE OR CLASS

STATEMENTS	YES	NO	X ² for independent groups	p
Pills should be taken daily even if one does not have sexual intercourse.	38% (80/211)	31% (55/178)	1.58	N.S.
One can get pregnant even if one takes a contraceptive pill after intercourse	60% (127/211)	48% (86/178)	3.0	N.S.

A condom can be used for
two or three sexual inter-
course

55%	38%	7.60	.01
(115/211)	(67/178)		

One can get pregnant even if
one has sex only once in a
while

90%	76%	4.17	.05
(189/211)	(136/178)		

A woman can get pregnant
even if she does not get
sexually aroused during sex

60%	46%	4.26	.05
(127/211)	(82/178)		

Note: Percentages are of correct answers to each statement.

Table 4

ATTITUDES AND BELIEFS ABOUT SEX AND CONTRACEPTION
DEPENDENT ON HAVING OR NOT TAKEN A SEXUAL EDUCATION COURSE

Attitudes and beliefs	Took course		χ^2 for Independent groups	p
	YES	NO		
It is not a sin to use something to prevent pregnancy	80% (168/211)	66% (118/178)	4.14	.05
One should do something to prevent premarital pregnancy	60% (126/211)	60% (106/178)	-----	-----

It is O.K. for a male to have sexual intercourse before marriage	51% (107/211)	39% (70/178)	3.69	N.S.
It is O.K. for a female to have sexual intercourse before marriage	39% (82/211)	24% (43/178)	5.76	.05
It is not necessary for a woman to be a virgin until she gets married	38% (80/211)	28% (50/178)	3.57	N.S.

Total number of adolescents 211

178

Table 5
 PERCENT OF SEXUALLY ACTIVE ADOLESCENTS DEPENDENT
 ON THE CONTENT OF THE SEX EDUCATION CLASS OR COURSE

Course content	Did the course include information on....		χ^2 for independent groups	p
	YES	NO		
How to prevent pregnancy	28% (40/144)	16% (10/67)	5.14	.05

Where to obtain contraceptives	27% (26/97)	21% (24/144)	1.33	N.S.
Relationship with sexual partner	24% (28/119)	24% (22/92)	-----	N.S.
Sexuality	24% (35/148)	24% (15/63)	-----	

Total number of adolescents
who took a course 211

that the only significant difference was produced by information on how to prevent pregnancy. Although the effect of the particular content has a negligible effect on sexual activity, the effect on contraceptive use is very important. As can be seen in Table 6, significant effects were found for all the content areas.

Finally, those teenagers who received information on how and where to obtain contraceptives perceived more access to these methods than those who did not receive such information (Table 7).

DISCUSSION

A point stressed in the introduction was that simply classifying teenagers into those who have taken a sexual education course and those who haven't does not provide a consistent predictor of sexual and contraceptive behaviors. This is specially true for the courses given in Mexico City schools in which the decision of whether or not to offer and what to include in a sex education course totally depends on the authorities of each specific school. As was the case with several studies conducted in other countries (e.g., Dawson, 1986; Kirby, 1984; and Zelnik and Kim, 1982), for the Mexico City samples the mere fact of attending a sex education course did not affect the initiation or continuation of sexual activity, contraceptive behavior or even the perception of accessibility to contraceptive methods.

Although there were no effects on behavior, such courses were found to be related to more knowledge about the subject, as well as a change toward more accepting attitudes concerning the females' right to engage in sexual intercourse before marriage, and toward the use of contraceptives. Kilmann, Wanlass, Sabalis and Sullivan (1981), in a review of the effects of sex education, report that a large percentage of the studies in this area find significant improvements in sexual knowledge when sex education is provided. With regards to attitudes, the findings are less consistent, while Zuckerman, Tushup and Finner (1976) found a liberalization of attitudes following a course in sexuality, Woods and Mandetta (1975) report no effects on attitudes following a course in human sexuality.

It is worth noting that in the present study the effects of having

taken a sex course on the adolescents' knowledge and attitudes toward sexual activity and contraception did not produce significant differences across all the knowledge and attitude items. This finding points once more to the importance of evaluating sex education in terms of its content, and not mere attendance. That is to say, that the knowledge and attitudes that change should be contingent on what areas are covered during the course. Furthermore, the fact that within those adolescents who took a course, there appeared very low percentages of knowledge in connection to the correct use of pills (38%) and condoms (55%) indicates the lack of information delivered in the Mexico City courses about the use of contraceptive methods.

The same between group variation found for knowledge was true for the attitudes. For example, within the course takers 39% thought it was O.K. for females to engage in sexual intercourse before marriage and only 38% believed it was not necessary for a woman to remain a virgin until her marriage. (In contrast, the adolescents who did not attend a sex education course, who had percentages of 24% and 28% for these two items, the course takers are more liberal.) It is obvious that sex for unmarried females continues to be a tabu area in the Mexican culture. In fact, Diaz Guerrero (1982) indicates that two of the most important socio-cultural premises in Mexico are the abnegation of the female and her virginity. Given these patterns, it's important that courses take into account, and instructors are made aware of, cultural and popular knowledge, expectations and beliefs that can interfere or improve the course structure and content. Relevant to this point is the finding that within the low socioeconomic group studied, both parents of those adolescents who attended a sex education course had higher educational levels. Given that Diaz Guerrero (1982) has repeatedly found that people adhere more strongly to traditional cultural norms the lower their education level, it is possible that families with less education (even though they live in the same areas and have the same incomes) see the courses as threatening to their beliefs and thus not adequate for their daughters.

Introducing course content as the predictor variables allows for a

Table 6
 PERCENT OF CONTRACEPTIVE USING ADOLESCENTS IN
 RELATION TO THE CONTENT OF THE SEX EDUCATION CLASS OR COURSE

Course content	Did the course include information on....		χ^2 for independent groups	p
	YES	NO		
How to prevent pregnancy	70% (28/40)	20% (2/10)	35.71	.001
Where to obtain contraceptives	81% (21/26)	42% (10/24)	18.77	.001

Relationship with sexual partner	68% (19/28)	50% (11/22)	4.76	.05
Sexuality	66% (23/35)	47% (7/15)	5.46	.05

Total number of sexually
active adolescents who
took a course 50

Table 7

PERCEIVED ACCESS TO CONTRACEPTION BY HAVING OR NOT RECEIVED
 INFORMATION IN SEX EDUCATION COURSE IN REGARDS TO
 OBTAINING CONTRACEPTIVES

Perceived access	Received information about obtaining contraceptives		χ^2 for independent groups	P
	YES	NO		
Is it easy to obtain something to prevent pregnancy without anyone finding out.	82% (23/28)	45% (10/22)	16.69	.001
Contraceptives are not too expensive	82% (23/28)	55% (12/22)	8.89	.01
If she wanted to, she could get something to prevent pregnancy	96% (27/28)	86% (19/22)	1.04	N.S.

clearer understanding of the effects of the courses on sexual and specially on contraceptive behavior. The information on sexuality, relationship with the partner and where to obtain contraceptives does not have an effect on sexual activity. A marginal influence on how to prevent pregnancy was found (Table 2).

The most interesting and stronger effect found in the present study was the impact of receiving information on how to prevent pregnancy and on where to obtain contraceptives on the adolescents' contraceptive behavior. An increase from 20% to 70% and from 42% to 81%, respectively, was evidenced in contraceptive use for adolescents who received information in these content areas. Although less dramatic, information about the relationship with the partner and on sexuality also produced increases of contraceptive use from 50% to 68% and 47% to 66%, respectively.

The content area results clearly indicate that receiving specific information regarding several areas related to sex and contraception have a definite impact on the contraceptive behavior of 16 and 17 year old females. On the other hand, the impact of the different types of information on sexual activity is null, or very slight, when the specific content centers on pregnancy prevention.

Finally, given that perceived access to contraceptive methods plays a central role in contraceptive use, it should be pointed out that information regarding the ways and places in which contraceptives can be obtained has a definite impact on the adolescents' perception of access. When they receive this information they report that contraceptives are easy to obtain and are not expensive.

In summary, it can be said that analyses of content of sex education courses, as well as research which establishes whether the course precedes or follows the onset of coitus and contraceptive use, must be carried out before being able to conclude whether or not a course has an effect on sexual and contraceptive behavior.

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