

Sex, Contraception, and Pregnancy Among Adolescents in Mexico City

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This article presents the development and results of a study that analyzed the psychosocial determinants of abstaining from sexual intercourse, practicing contraception, and avoiding pregnancy. It was carried out with a representative household and a clinic sample of 12-19-year-old females of lower-middle and lower socioeconomic levels in Mexico City. Among the implications of the results for program design are: (1) the need for clarifying erroneous beliefs and providing detailed, practical knowledge concerning sexuality, pregnancy, use of and access to contraceptives; (2) a broad definition of sex education that emphasizes family communication, values clarification, provision of alternative role options for women other than motherhood, and both the goals and the skills needed to achieve them—for example, independent decision-making. Attention to male attitudes and communication skills as well as ways of improving communication and support networks among peers was also found to be essential. (STUDIES IN FAMILY PLANNING 1991; 22, 2: 74-82)

Psychosocial variables have been shown to be related to adolescent sexual and contraceptive behavior (Atkin and Pick de Weiss, 1989). However, it is clear that these factors vary to some degree across different cultures. The present study compares such variables between female Mexican adolescents who have not initiated sexual relations and those who have; between sexually active adolescents who have used contraceptives and those who have not; and between adolescents who are pregnant and those who have never been pregnant.

In Mexico it has been calculated that, in 1990, 25.1 percent of the population (85.7 million) is between 10 and 19 years of age (CONAPO, 1982). In 1986 the group of 15-19-year-old women had a specific fertility rate of 84 per 1,000 (Secretaría de Salud et al., 1989). It has also been

calculated that 17 percent of live births occur in the group under 20 years of age (Secretaría Gobernación, 1990).

The specific characteristics of urban Mexican sociocultural patterns most likely modify some of the relationships found in other countries. It is especially important to consider that abortion is highly restricted in Mexico and generally disapproved of (see, for example, Pick de Weiss et al., 1990), though practiced on a clandestine level. Traditional attitudes and "machismo" still largely determine a woman's role in general, particularly with regard to sexual relations (Díaz-Guerrero, 1982; Pick de Weiss, 1980a, 1980b). Furthermore, the socioeconomic conditions in which the majority of the population lives are more precarious than is true for the population of more developed countries, such as the US.

The Mexican family structure and interpersonal relation patterns differ in important ways from those of other cultures (Holtzman et al., 1975). The extended family system is very salient to the great majority of Mexicans who, in general terms, tend to favor very close relations and dependence between parents and adult children. However, within the Mexican culture, communication both in general and with respect to sex is often not direct (Nina Estrella, 1989).

In Mexico general knowledge concerning the existence of a variety of contraceptive methods appears to be relatively widespread. Eighty-two percent of the female adolescents interviewed in the representative household survey of Mexico City, which forms part of the sample

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used for the study reported here, had heard of contraceptives. When it comes to more specific knowledge—such as use of the different contraceptives, how one becomes pregnant, and the menstrual cycle—only two-fifths of the population could provide correct answers (Pick de Weiss et al., 1988b and 1988d). Family planning services are often perceived (sometimes realistically) as inaccessible to the unmarried teenager (Pick de Weiss et al., 1988c).

The present study is aimed at analyzing sexual, contraceptive, and reproductive behavior among female adolescents in Mexico City in relation to a series of psychosocial determinants.

Methodology

The sampling frame used assured that the females in all groups were from similar socioeconomic backgrounds. For the first group, a random household sample of the lower-middle and lower socioeconomic levels was developed, based on a Mercadological Map (BIMSA, 1982), the electoral map of the Federal Electoral Commission (Comisión Federal Electoral, 1978), and personal visits.

The households were selected through a self-weighted, multistage scheme, which included the selection of conglomerates proportional to size. Up to seven visits were carried out in order to find an interviewee. Data were collected simultaneously in all areas of the city.

A total of 3,505 households were visited. All female teenagers between 12 and 19 years of age were listed. Of the 927 females who were eligible, 865 (93.3 percent) were interviewed. Fifty-six (6 percent) could not be located at home and six (.7 percent) refused to participate.

Since the number of adolescents who had had sexual intercourse was not large enough to make comparisons, 200 nonpregnant teenagers who were referred by girls in the probabilistic household sample as probably having had initiated sexual intercourse were visited in their homes and invited to participate in the interview. No mention was made of information given by the previously interviewed girlfriend, so that these adolescents were free to respond to the interview as they wished.

The pregnant adolescents were contacted at two public maternity hospitals in Mexico City, which serve women from principally lower-middle and lower socioeconomic levels. Three hundred and fifty-five pregnant teenagers were included in the study. All pregnant adolescents were primigravida, were from five to nine months pregnant, and, when contacted, said that they had not wanted the pregnancy at the time of conception.

Each respondent was interviewed for about 50 minutes, using an instrument comprising mainly closed-ended questions developed for this study (Pick de Weiss et al., 1988d), and in some cases taken from scales that had

been previously developed and validated with Mexico City adolescents from lower and middle socioeconomic levels. The content covered psychosocial areas that had been found to be related to adolescent sexual and contraceptive behavior in the literature. The interview was pilot-tested before beginning data collection. Based on distribution analysis, factor analyses, and Cronbach's alphas, the following final scales were developed and used in the analyses:

- 1 *Use of affect to achieve ends:* Sense of control over one's surroundings is based on affective handling (for example, "being nice" or "getting along with people") rather than through one's abilities and achievements.
- 2 *Acceptance of sociocultural and parental norms and rules:* This variable refers to compliance with the demands and decisions of other people, particularly with regard to a daughter's acceptance of parental authority.
- 3 *School aspirations:* Level of scholastic aspirations that the adolescent has for herself.
- 4 *Perception of father's attitudes:* Perceived attitude of the father as liberal versus conservative regarding sexuality, pregnancy, abortion, and premarital contraceptive use.
- 5 *Perception of girlfriends' attitudes:* Perceived attitude of the peers as liberal or conservative regarding sexuality, pregnancy, and premarital contraceptive use.
- 6 *Having talked with mother about sex:* Extent to which the adolescent perceives that she had talked with her mother about sex and boys.
- 7 *Having talked with girlfriends about sex:* Extent to which the adolescent reported having talked with her friends about premarital sexual intercourse, contraceptive use, pregnancy, and ideal family size.
- 8 *Sister pregnant:* Presence of sisters who became pregnant during adolescence.
- 9 *Mother single at time of first pregnancy:* The adolescent reported that her mother became pregnant premaritally.
- 10 *Acceptance of erroneous beliefs:* Degree to which a group of incorrect myths concerning pregnancy and contraception are believed.
- 11 *Knowledge of contraception:* Knowledge regarding use of contraceptives.
- 12 *Future orientation:* Refers to the planning and organization of future goals and activities.
- 13 *Assertiveness:* Assertiveness is defined as the tendency to stand up for one's rights; and expressing what one believes, feels, and wants in a direct form, while respecting the rights of others.

- 14 *Control over life events*: An individual's sense that he (she) may control his (her) life.
- 15 *Perception of mother's personality*: Degree to which the mother was perceived as open to interaction and communication.
- 16 *Concept of sexual partner*: Positive versus negative concept of the boyfriend.
- 17 *Perception of partner's attitudes*: Perceived attitude of the boyfriend as liberal or conservative regarding sexuality, pregnancy, and premarital contraceptive use.

Results and Discussion

The analysis presented here revolves around three basic questions couched in terms of behavior that programs might try to encourage: (1) What psychosocial factors are related to a girl postponing sexual intercourse? (2) Which are related to her using contraceptives once having initiated sexual intercourse? and finally, (3) Which factors are associated with her not becoming pregnant? Based on earlier results that showed differences in sexual and contraceptive behavior of 12–15- and 16–19-year-olds (Díaz-Loving and Pick de Weiss, 1988), separate analyses were conducted for these groups. Since very few of the younger girls had practiced contraception and very few were pregnant, analyses for this group refer only to having versus not having had sexual intercourse.

The results of the logistic regression analyses are given separately for each dependent variable. First, the results of the significant bivariate analyses are presented, followed by the variables that remain in the best fitting multivariate model. The odds ratios shown in the tables indicate the relative likelihood of occurrence of the dependent variable when the independent variable changes by one unit in the direction indicated in the column "coding categories."

The results show that different groups of variables are related to each one of the criterion behaviors in a conceptually congruent manner. The results and discussion are presented separately for each of the basic questions, concluding with the overall policy implications of the findings.

Not Engaging in Sexual Intercourse

Ten variables were significant in bivariate analyses, of which seven (shown in italics) remained significant when controlling for the effects of the others: *use of affect to achieve ends, acceptance of sociocultural and parental norms and rules, school aspirations, perception of father's attitudes, perception of girlfriends' attitudes, having talked with mother about sex, having talked with girlfriends about sex, sister pregnant, mother single at time of first pregnancy, and acceptance of erroneous beliefs* (Table 1).

The overall image that emerges from these results describes the 16–19-year-old adolescent who does not engage in sexual intercourse as one who accepts traditional family and societal norms but at the same time has open communication with her mother concerning sexual matters. She lives in a peer and family milieu of which adolescent pregnancy and sexual intercourse are not salient aspects, neither as topics of conversation nor as models of behavior. Furthermore, she is a young woman who expects to continue her education to a higher level than the girl who has engaged in sexual intercourse.

The combination of acceptance of sociocultural and parental norms and rules with open communication with one's mother about sex suggests that the girls who have not had sexual intercourse come from families in which strong parental authority coexists with an openness to discuss intimate matters between daughter and mother.

Table 1 Variables that describe adolescents (16–19-year-olds) who have not had sexual intercourse

Variable	Coding categories	Bivariate solution odds ratio	Multivariate solution odds ratio
Use of affect to achieve ends	Low = 1 High = 2	1.62	—
Acceptance of sociocultural and parental norms and rules	Low = 1 High = 2	2.88	2.77
School aspirations	Elementary school or does not know = 1 University = 4	1.27	1.37
Perception of father's attitudes	Conservative = 1 Liberal = 2	1.78	—
Perception of girlfriends' attitudes	Conservative = 1 Liberal = 2	2.33	1.81
Having talked with mother about sex	None or little = 1 Moderate or much = 2	1.48	1.68
Having talked with girlfriends about sex	Not at all = 1 A great deal = 3	2.05	2.41
Sister pregnant	None = 1 One or more = 2	2.26	1.69
Mother single at time of first pregnancy	Mother married at first pregnancy = 1 Mother single = 2	2.25	2.24
Acceptance of erroneous beliefs	Acceptance = 1 Rejection = 2	2.08	—
Knowledge of contraception	Incorrect = 1 Correct = 2	—	—
Future orientation	Low = 1 High = 2	—	—
Assertiveness	Low = 1 High = 2	—	—
Control over life events	Low = 1 High = 2	—	—
Perception of mother's personality	Very withdrawn, closed = 1 Very interactive, open = 4	—	—
Concept of sexual partner	Very negative = 1 Very positive = 4	—	—
Perception of partner's attitudes	Conservative = 1 Liberal = 2	—	—

Note: $\chi^2 = 176.45$, $df = 7$.

Within the Mexican context this combination, in conjunction with the absence of pregnancies in adolescence in the family and low prevalence of communication regarding sex with peers, may provide the necessary support and models to help the girl pursue goals in life other than the culturally prescribed role of motherhood (Diaz-Guerrero, 1982). The high academic aspirations held by these adolescents is congruent with this image. The combination of open communication and strong parental authority might lead to strong ego development and self-confidence (Nunn, 1987), which is related both to academic achievement and avoidance of unwanted pregnancies during adolescence (Mindick, 1978; Slavin, 1975).

The variables that were significant in the bivariate analyses, but no longer in the final multivariate solution, are highly consistent with this overall picture and add specific details that are important to mention. The finding that adolescents who do not engage in sexual intercourse were less likely to use affect to achieve ends is congruent with their greater academic aspirations insofar as they tend to base their achievement expectations on their instrumental efforts (La Rosa, 1986). That these girls also perceived their father's attitudes toward sexuality and contraception as conservative is consistent with the cultural patterns of more traditional families. Finally, the finding that adolescents who did not engage in sexual relations have fewer erroneous beliefs about pregnancy and contraception may reflect a more positive overall attitude toward communication and information within the context in which these adolescents have grown up.

It is important to note that no variables related to the boyfriend and the adolescent's relationship with him were included in this part of the analysis because too many values were missing among the group who had not had sexual intercourse. It is, therefore, not possible to say to what extent such variables play a role in this context.

With respect to the 12–15-year-olds, eight significant predictors emerged, of which five (in italics) remained significant when controlling for the others: *acceptance of sociocultural and parental norms and rules*, *school aspirations*, *perception of girlfriends' attitudes*, *having talked with mother about sex*, *having talked with girlfriends about sex*, *sister pregnant*, *mother single at time of first pregnancy*, and *acceptance of erroneous beliefs* (Table 2).

The finding that basically the same variables, with few exceptions, were predictive of not having had sexual relations among the 12–15-year-old group, suggests that despite their maturational differences (Diaz-Loving and Pick de Weiss, 1988; Pick de Weiss et al., 1988d), the same processes are operating.

Practice of Contraception

Once having initiated sexual intercourse, the adolescents may decide to use or not use contraceptives to avoid

Table 2 Variables that describe adolescents (12–15-year-olds) who have not had sexual intercourse

Variable	Coding categories	Bivariate solution odds ratio	Multivariate solution odds ratio
Use of affect to achieve ends	Low = 1 High = 2	—	—
Acceptance of sociocultural and parental norms and rules	Low = 1 High = 2	2.17	2.90
School aspirations	Elementary school or does not know = 1 University = 4	1.83	2.10
Perception of father's attitudes	Conservative = 1 Liberal = 2	—	—
Perception of girlfriends' attitudes	Conservative = 1 Liberal = 2	2.04	—
Having talked with mother about sex	None or little = 1 Moderate or much = 2	1.53	—
Having talked with girlfriends about sex	Not at all = 1 A great deal = 3	2.34	3.31
Sister pregnant	None = 1 One or more = 2	2.50	2.79
Mother single at time of first pregnancy	Mother married at first pregnancy = 1 Mother single = 2	2.73	2.02
Acceptance of erroneous beliefs	Acceptance = 1 Rejection = 2	2.04	—
Knowledge of contraception	Incorrect = 1 Correct = 2	—	—
Future orientation	Low = 1 High = 2	—	—
Assertiveness	Low = 1 High = 2	—	—
Control over life events	Low = 1 High = 2	—	—
Perception of mother's personality	Very withdrawn, closed = 1 Very interactive, open = 4	—	—
Concept of sexual partner	Very negative = 1 Very positive = 4	—	—
Perception of partner's attitudes	Conservative = 1 Liberal = 2	—	—

Note: $\chi^2 = 62.14$, $df = 5$.

becoming pregnant. The second set of analyses of the 16–19-year-old adolescents who have had sexual intercourse found that 14 variables were significant predictors of contraceptive use. The six, which are shown in italics, remained significant when controlling for the others: *use of affect to achieve ends*, *acceptance of sociocultural and parental norms and rules*, *school aspirations*, *perception of father's attitudes*, *perception of girlfriends' attitudes*, *having talked with mother about sex*, *having talked with girlfriends about sex*, *mother single at time of first pregnancy*, *acceptance of erroneous beliefs*, *knowledge of contraception*, *future orientation*, *assertiveness*, *perception of mother's personality*, and *perception of partner's attitudes*.

The girls who use contraceptives are contradicting the prevalent cultural norms against premarital sex for pleasure, that is, without the risk of pregnancy (Paz, 1959). In such a context it is not surprising to find that they

have less acceptance of sociocultural and parental norms and rules. Furthermore, they appear to be more mature in terms of the developmental continuum of future planning and orientation. Both the perception of peers' attitudes as liberal and communication with them regarding sexual and contraceptive issues provide a basis for pregnancy prevention. This, together with greater knowledge of possible methods and their use as well as rejection of commonly held erroneous beliefs, and the ability to plan for their future, translates motivation to avoid pregnancy into contraceptive use (Table 3).

In sum, in order to practice contraception, teenagers must have knowledge about available methods, be free of commonly held misbeliefs, feel supported by their friends, and be sufficiently free of traditional authority to do something as taboo as using contraceptives without being married.

Table 3 Variables that describe adolescents (16–19-year-olds) who have practiced contraception

Variable	Coding categories	Bivariate solution odds ratio	Multivariate solution odds ratio
Use of affect to achieve ends	Low = 1 High = 2	1.89	—
Acceptance of sociocultural and parental norms and rules	Low = 1 High = 2	5.85	3.10
School aspirations	Elementary school or does not know = 1 University = 4	1.50	—
Perception of father's attitudes	Conservative = 1 Liberal = 2	1.97	—
Perception of girlfriends' attitudes	Conservative = 1 Liberal = 2	2.08	2.23
Having talked with mother about sex	None or little = 1 Moderate or much = 2	2.30	—
Having talked with girlfriends about sex	Not at all = 1 A great deal = 3	3.01	1.99
Sister pregnant	None = 1 One or more = 2	—	—
Mother single at time of first pregnancy	Mother married at first pregnancy = 1 Mother single = 2	1.32	—
Acceptance of erroneous beliefs	Acceptance = 1 Rejection = 2	2.06	2.43
Knowledge of contraception	Incorrect = 1 Correct = 2	1.37	7.30
Future orientation	Low = 1 High = 2	2.32	1.70
Assertiveness	Low = 1 High = 2	4.37	—
Control over life events	Low = 1 High = 2	—	—
Perception of mother's personality	Very withdrawn, closed = 1 Very interactive, open = 4	1.53	—
Concept of sexual partner	Very negative = 1 Very positive = 4	—	—
Perception of partner's attitudes	Conservative = 1 Liberal = 2	1.65	—

Note: $\chi^2 = 157.41$, $df = 6$.

Results of the bivariate analyses lend support to this composite image. Among the variables that tapped aspects of the couple relationship, only the adolescent girl's perception of her boyfriend's attitudes toward sexuality and contraception was significant. Furthermore, fathers were also perceived as liberal, suggesting that it is also necessary for the girl to perceive a supportive attitude in such matters from her boyfriend and her father in order to use contraceptives. Others have found, in a similar vein, that encouragement on the part of the male to practice contraception is important for contraceptive use among adolescents (Pick de Weiss, 1980 a,b).

Adolescents who practiced contraception also had a positive image of their mother, with whom they communicated frequently about intimate subjects. Better relations with parents have been shown, in other studies, to be related to better contraception among adolescents (Ball, 1973; Jessor and Jessor, 1975). The fact that their mothers had not been single when first pregnant provided a positive role model for avoiding pregnancy before marriage. Theoretically, such a positive relationship with the mother is also associated with more optimal personality development and positive self-image (Canalizo and Shabot, 1990), such as that found among these adolescents who, according to the bivariate results, were also more assertive, had higher academic aspirations and were more instrumentally motivated, and used less affective manipulation. This is consistent with the greater maturation and ability to plan already noted in these girls.

Not Being Pregnant

Eleven variables were significantly associated with not being pregnant, of which the six italicized ones remained significant in the multivariate solution: use of affect to achieve ends, *acceptance of sociocultural and parental norms and rules*, *school aspirations*, having talked to mother about sex, *having talked to girlfriends about sex*, mother single at time of first pregnancy, *knowledge of contraception*, *future orientation*, *assertiveness*, perception of mother's personality, and *concept of sexual partner* (Table 4).

More knowledge concerning contraceptives and how to use them was associated with greater likelihood of not being pregnant. These results emphasize the importance, among other things, of providing information about contraceptive use in order to prevent adolescent pregnancy. The fear on the part of parents and educators that increased information concerning the specifics of contraceptive methods will lead to greater interest in sexual intercourse and greater risk of pregnancy is refuted by these findings. Other studies (Zelnik and Kim, 1982) found no relation between sex education and sexual intercourse. They also found that those who had sexual intercourse were more likely to practice contraception if they had obtained sex education.

Table 4 Variables that describe adolescents (16–19-year-olds) who have not been pregnant

Variable	Coding categories	Bivariate solution odds ratio	Multivariate solution odds ratio
Use of affect to achieve ends	Low = 1 High = 2	1.62	—
Acceptance of socio-cultural and parental norms and rules	Low = 1 High = 2	7.15	2.52
School aspirations	Elementary school or does not know = 1 University = 4	1.94	1.46
Perception of father's attitudes	Conservative = 1 Liberal = 2	—	—
Perception of girlfriends' attitudes	Conservative = 1 Liberal = 2	—	—
Having talked with mother about sex	None or little = 1 Moderate or much = 2	3.20	—
Having talked with girlfriends about sex	Not at all = 1 A great deal = 3	5.07	3.16
Sister pregnant	None = 1 One or more = 2	—	—
Mother single at time of first pregnancy	Mother married at first pregnancy = 1 Mother single = 2	1.37	—
Acceptance of erroneous beliefs	Acceptance = 1 Rejection = 2	—	—
Knowledge of contraception	Incorrect = 1 Correct = 2	72.89	13.63
Future orientation	Low = 1 High = 2	3.00	1.75
Assertiveness	Low = 1 High = 2	4.90	—
Control over life events	Low = 1 High = 2	—	—
Perception of mother's personality	Very withdrawn, closed = 1 Very interactive, open = 4	1.71	—
Concept of sexual partner	Very negative = 1 Very positive = 4	1.42	1.59
Perception of partner's attitudes	Conservative = 1 Liberal = 2	—	—

Note: $\chi^2 = 256.26$, $df = 4$.

However, knowledge is not the whole story. Higher levels of communication with friends about sexuality, pregnancy, and contraception was associated with a lower likelihood of becoming pregnant. Such communication may provide useful information and advice for avoiding pregnancy as well as perhaps reflecting greater overall sociability and better peer support at an age at which a strong need exists for stability and external support (Elkind, 1970). This suggestion is tentatively confirmed by the fact that the pregnant girls had fewer girlfriends overall with whom to talk (Pick de Weiss et al., 1988b), suggesting that they were more isolated and in need of company than the nonpregnant adolescents. They may perceive the baby as a means of fulfilling affective needs (Fisher and Ktsanes, 1971).

Among the girls who have initiated sexual relations, those who have less traditional acceptance of sociocultural and parental norms and rules were less likely to be pregnant. This finding means that the pregnant adolescents conformed more to traditional expectations. This somewhat surprising finding is actually quite consistent with cultural messages. Pregnancy, to some extent, exonerates the girls from the shame of having engaged in premarital sexual relations. Sex for procreation is more acceptable than sex for pleasure. By becoming a mother, she is also fulfilling a highly valued cultural role (Díaz-Guerrero, 1982; Paz, 1959). Based on anthropological data from rural Mexico and Peru, it has been suggested that having children is a way of maintaining or improving the social status of the family (Shedlin and Hollerbach, 1981; Tucker, 1986). Even among Mexican-Americans in the US, a positive attitude toward childbearing has been reported (Bradshaw and Bean, 1972). Furthermore, in this regard, it is important to remember that the girls studied did not choose to seek a clandestine abortion as do some unknown proportion of their peers. This may increase the proportion of traditional families in the sample studied.

The nonpregnant adolescents also reported having higher school aspirations and orientation toward the future than their pregnant peers. This finding is highly consistent with those from other studies (Abrahamse et al., 1985; Cobliner et al., 1975; Mindick, 1978; Oskamp and Mindick, 1983) which suggest that the adolescent's life goals are intimately involved with her risk of becoming pregnant or not. In line with this finding it is important to mention that a considerable proportion of pregnant adolescents in this and other studies in Mexico City (Atkin and Givaudan, 1989; Pick de Weiss et al., 1988b) had left school before getting pregnant. It is also possible that once faced with the unplanned pregnancy, girls with lower school aspirations and shorter time perspectives in relation to life goals may accommodate more easily to the prospect of early motherhood than do girls who wish to pursue such long-range goals as a university career. Moore et al. (1984) report some evidence of a positive relation between level of aspirations and delayed childbearing in adolescence. Such adolescents with higher aspirations and long-term goals, if they become pregnant, might be more likely to seek a clandestine abortion. Although no data on this possibility are available from Mexico in this regard, evidence from Colombia suggests that it might be true (Arévalo et al., 1987).

Within the context of the couple relationship, the finding that the adolescent's negative image of her boyfriend was predictive of her avoidance of pregnancy suggests an important motivational aspect within the relationship. One may speculate that, among sexually active adolescents, those who perceive their boyfriends more negatively are less motivated to engage in frequent sexual relations or to accept a pregnancy if it occurs as a way of maintaining the relationship. In Mexico, it is common that single women may become pregnant with

the expectation that the boyfriend will marry them. Among Mexican adolescents who were single when they first became pregnant, this expectation became a reality in many cases: 56.7 percent were living with the boyfriend by the third trimester of pregnancy (Atkin and Givaudan, 1989).

Additional information is provided by a look at the bivariate results. The finding that greater assertiveness was associated with becoming pregnant and deciding to continue with the pregnancy was unexpected and merits a brief comment. It may be an indication that girls who are more able to express their own desires were better able to resist suggestions from others to obtain an abortion and more willing to confront the difficulties involved in rearing a child at such a young age. Studies of Mexican adolescents who decide to abort, which could confirm this possibility, are unavailable at the present time.

Another significant personality variable, low use of affect to achieve ends, is consistent with other findings. The adolescent who primarily uses means other than affect (for example, efficacy, competence, instrumentality) to obtain her goals is more likely to invest more effort in planning her future and having higher academic aspirations (Esqueda, 1989), and to be more motivated to avoid pregnancy.

The importance of the adolescent's relationship with her mother for avoiding pregnancy was also apparent in the bivariate analyses. Greater communication about sex, with a mother perceived as active and communicative and who had herself been married when first pregnant, provided an interpersonal context that facilitates pregnancy avoidance. These results reiterate the impact of sexual education within the family, both implicit in role models as well as explicit through communication.

Program Implications

The results of the present study have far-reaching implications for program design both directed at postponing age of first sexual intercourse and at improving contraceptive use and pregnancy prevention. Clarifying commonly held erroneous beliefs and providing detailed, practical knowledge concerning sexuality, pregnancy, and use of and access to contraceptive methods is essential. Studies in Latin America have shown that there is a particularly high prevalence of common misbeliefs related to the menstrual cycle, correct use of contraceptives, and health risks associated with them. For example, in a previous descriptive analysis of the sample, it was found that 35 percent of adolescents thought a woman cannot get pregnant the first time she has sexual intercourse, 60 percent did not know when the fertile period was within the menstrual cycle, and 60 percent thought a condom could be used more than once (Pick de Weiss et al., 1988b). Programs should be careful to identify the prevalent

beliefs in the population to which they are addressed and ensure that they are corrected. Information about contraception should be geared very specifically at ways to obtain and to practice contraception appropriately.

However, sex education should be even more broadly defined and requires an important emphasis to be placed on the family if prevention is to be effective. Strategies should be designed to foster open and clear communication between parents and their children, including intimate topics and values clarification. Considering that such intrafamilial patterns are only beginning to be accepted among the general population, multifocal efforts through mass media, education, and health sectors should be encouraged. Families in which adolescent pregnancies have occurred should be targeted for special attention.

It is clear from these findings that one of the central issues underlying adolescent pregnancy is the lack of alternative role options for women other than motherhood, as well as their subordinate role in the society (Zeidenstein, 1989). For programs to really be effective they must address these issues. Strategies should be directed at helping youngsters develop alternative, realistic life goals so that they do not see pregnancy as their only possibility of gaining status and couple commitment. Programs should emphasize not only the goals but also the skills involved in achieving them. These could include training to increase assertiveness, constructive decision-making, and providing the necessary steps for future planning. In order to achieve this it is particularly effective to work in small groups with participatory technology such as group dynamics, role playing, and focus groups.

Attention to male attitudes and communication skills is also essential. It is very common to find that both male and female adolescents are afraid to talk about sex and contraception with their sexual partner. The females perceive it as too risky for the ongoing relationship. Males' attitudes in Latin America reinforce these expectations. Much of female sexual and contraceptive behavior is indirectly determined by the woman's perceptions of the male's attitudes and desires or her expectations within the relationship. Qualitative data have shown that pregnant adolescents prefer to risk pregnancy rather than appear too knowledgeable about sex and contraception, and perceive their partners as being unwilling to discuss the topic (Vargas-Trujillo and Atkin, 1988). Little research has been carried out in Latin America regarding the male's position in this respect and is urgently needed in order to plan more effective programs that optimize interventions for adolescents in Latin America.

The importance of peer influence should be contemplated within preventive strategies. Ways to improve such informal communication and support networks and to assure that the information they provide is accurate should be developed. Such networks should be seen as complementary, rather than opposed, to the strengthening of family communication skills.

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