

# Age Differences in Parent and Peer Influences on Female Sexual Behavior

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The aim of this study was to develop and test a model of the influence of parents and friends on adolescent female sexual behavior that would integrate age-related changes in these influences. Self-report measures assessing discussion of sexual topics with parents and friends, perceived approval of sexual behavior, sexual attitudes, and sexual behavior were administered to 267 high-school and college-aged female subjects. As expected, results suggested that the influence of friends and parents varied as a function of the age of the adolescent. The effects of discussion with mother and parental approval on sexual behavior operated indirectly through sexual attitudes, with the effect of discussion with mother being the strongest in the 9th and 10th grade. The indirect influence of friends' approval on sexual behavior via sexual attitudes varied across the three age groups, peaking in 11th-12th grades; the direct effect of friends' approval on sexual behavior peaked in the college sample.

Many disciplines, such as family sociology, demography, and social psychology, have studied adolescent sexuality and identified parents and peers as important influences on sexual behavior. However, there has been a dearth of models that integrate these findings with knowl-

edge of age-related changes in the social network of adolescents. Yet, identification of age or of developmental differences has implications for the creation or implementation of developmentally appropriate sexuality programs (e.g., adolescent pregnancy prevention programs, sex education) as well as the understanding of adolescent sexuality (Crockett & Chopak, 1993; Koch, 1993; Treboux & Busch-Rossnagel, 1991).

The primary purpose of this study was to apply a developmental orientation (with its emphasis on age-related changes) to the research literature on adolescent sexual behavior. As such, we first present a theoretical basis for understanding developmental changes in parent and peer influences on adolescent behavior. Second, we propose a model of parent and peer influences on adolescent sexual behavior that provides the context for testing age-related questions regarding those influences. Finally, we identify the age differences that we expect in the paths of influence.

### **THEORETICAL BASIS FOR AGE-RELATED CHANGES IN PARENT AND PEER INFLUENCES ON ADOLESCENT BEHAVIOR**

During the adolescent period the emergence of sexuality does not occur within a void; rather, it develops in the context of other developmental tasks of adolescence, such as the establishment of identity, the development of autonomy, and the formation of intimate relationships (Havighurst, 1972). In dealing with these tasks, adolescents tend to rely on their parents and peers at different times and to different extents. Douvan and Adelson (1966) argued that the influence of parents and peers on behavior will differ as a function of the age of the adolescent. According to these researchers, young adolescents are still emotionally dependent on their parents and conform to parental values, whereas middle adolescents substitute a dependency on peers for their emotional dependency on parents and tend to conform to their peers' attitudes and behaviors. By late adolescence, individuals are less dependent on both parents and peers to guide their attitudes and behaviors and are more self-directed.

Empirical research has supported the theoretical formulations postulated by Douvan and Adelson (1966): Conformity to peers tends to peak between 9th and 10th grades and autonomy from parents tends to increase during the adolescent years (Berndt, 1979; Steinberg & Silverberg, 1986). Perceived controlling behavior (e.g., degree of strictness) of parents tends to decrease during the high school years (Jessor

& Jessor, 1977), whereas perceived controlling behavior of friends seems to peak during the middle of the high school years and to decrease thereafter (Hunter & Youniss, 1982).

The findings from Jessor and Jessor's (1975, 1977) longitudinal study of adolescent problem behavior suggested that the developmental formulations proposed by Douvan and Adelson (1966) can be applied to adolescent sexual behavior. Adolescents perceived more approval for engaging in sexual behavior from their parents and their peers as they got older. In turn, virgins were more likely than nonvirgins to perceive their parents and friends as disapproving of sexual behavior. Nonvirgins, as well as virgins who became sexually active in the year following initial assessment, stressed the importance of independence and loosened their ties to the family in favor of a greater dependency on friends. However, Jessor and Jessor (1975, 1977) did not identify the paths of influence among variables such as attitudes (e.g., perceived attitudes of parents and friends) and behaviors (e.g., sexual behavior). Causal models allow researchers to test hypothesized models of both direct and indirect effects among dependent, intervening, and independent variables (Biddle & Marlin, 1987), thereby facilitating a greater understanding of the processes involved in development. We sought to enhance such understanding by testing such a model in this study.

### **SPECIFICATION OF THE MODEL USED TO TEST FOR AGE DIFFERENCES IN PARENT AND PEER INFLUENCES ON ADOLESCENT SEXUAL BEHAVIOR**

To examine age differences in parent and peer influences, we first developed a general model of the paths of influence, one which allowed us to test for age differences in the paths. The model is based on a socialization paradigm of sexuality, one that views sexual behavior as learned rather than internally driven (Miller & Fox, 1987), identifies parents and peers as significant socialization agents, and emphasizes the role of communication and perceived attitudes of others. Specifically, the model proposes that discussion with parents and peers about sexual topics and perceived parental and peer approval of sexual behavior influence sexual behaviors directly and indirectly through the sexual attitudes of the adolescent; this model is presented in Figure 1.

In support of the direct effects of parent and peer influences (communication and approval), several studies have found that the amount of parental communication about sex tends to delay or prevent an adolescent's sexual activity (Fox, 1981; Lewis, 1973). When friends are

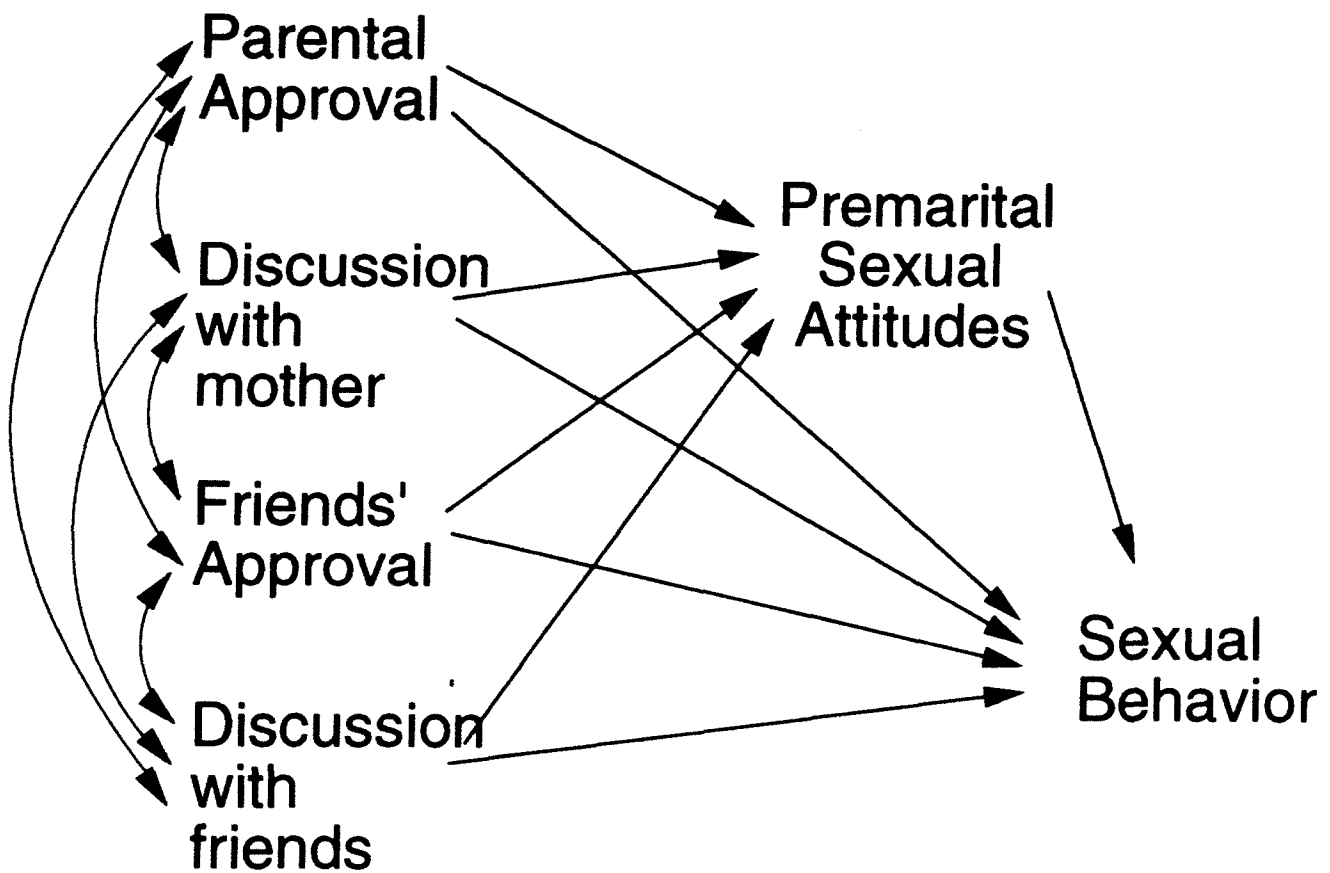


FIGURE 1 Hypothesized model of the relationships among parent and peer variables, sexual attitudes, and sexual behavior.

the primary source of sexual information, adolescents tend to report higher levels of sexual involvement (DeLamater & MacCorquodale, 1979; Lewis, 1973; Spanier, 1977). Given that communication with parents is unrelated to parental sexual attitudes (Fisher, 1986a, 1986b), we did not expect our exogenous variables to be related.

Previous studies also indicated that attitudes of others have a direct effect on adolescent sexual behavior. Adolescents who perceive less disapproval for engaging in premarital sexual behavior from parents or peers are more likely to engage in premarital intercourse (Jessor & Jessor, 1977; Thomson, 1982) and female adolescents are more likely to make the transition to nonvirginity if their best friends are sexually active than if their best friends are not active (Billy & Udry, 1985).

A substantial body of literature supports a strong association between sexual attitudes—conceptualized as the acceptability of certain sexual behaviors (Reiss, 1967)—and sexual behavior in both high school and college samples (DeLamater & MacCorquodale, 1979; Jorgensen & Sonstegard, 1984; McCormick, Izzo, & Folcik, 1985; Reiss, 1967); this literature lends support to the path between attitudes and behavior.

Finally, the paths between parent and peer variables and attitudes are supported by studies that have found a strong association between sexual attitudes and parental attitudes (DeLamater & MacCorquodale, 1979; Shah & Zelnik, 1981) and, similarly, between sexual attitudes and attitudes of friends (Reiss, 1967; Shah & Zelnik, 1981). Fisher (1986a) found that similarity between parent and child sexual attitudes was high in early adolescence and low in middle adolescence. Similarity to parental views is associated with less permissive sexual attitudes and behavior (Shah & Zelnik, 1981) and similarity to friends' attitudes is associated with more permissive attitudes (Reiss, 1967; Shah & Zelnik, 1981) as well as with more frequent sexual intercourse (Shah & Zelnik, 1981).

### AGE DIFFERENCES IN PARENT-PEER INFLUENCES ON ADOLESCENT SEXUAL BEHAVIOR

We believe that the utility of this model is that it serves as a tool for testing age differences in the paths of influence on sexual behavior. Within the model, the influence of parents and peers on adolescent sexual behavior was hypothesized to vary as a function of the age of the adolescent.<sup>1</sup> Specifically, parents' influence was expected to decline over the adolescent years, whereas friends' influence was expected to increase. In other words, we expected that discussions with parents and parental approval would have their greatest impact on the sexual behavior of young adolescents, exerting influence either directly on sexual behavior or indirectly through their impact on sexual attitudes. Conversely, effects of discussion with friends and friends' approval on sexual behavior (direct or indirect effects) were expected to be the strongest in middle adolescence. The influence of both parents and peers was expected to decline in late adolescence.

### METHOD

#### Sample

Participants were part of a larger sample recruited for a project on adolescent sexuality (Treboux, 1989). Participants were recruited from two high schools in New Jersey and from two colleges in New York.

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<sup>1</sup>There are no conventions for showing the expected age differences in the magnitude of the paths of influence, so these are not visually portrayed in the figure.

Given that research and theory have suggested that there is a differential influence of friends on male and female behavior (Billy & Udry, 1985; Billy, Rodgers, & Udry, 1984; Douvan & Adelson, 1966; Treboux & Busch-Rossnagel, 1990) and that our male sample size was too small to test for sex differences in the model, only female subjects were included in the study. Only participants with complete data were included in the analyses.

The sample was composed of 55 ninth and tenth graders (mean age = 15.2 years,  $SD = .6$ ), 120 eleventh and twelfth graders (mean age = 17.3 years,  $SD = .7$ ), and 88 college students (mean age = 19.8 years,  $SD = 1.4$ ). Eighty-five percent of the participants were White, and 73% were living with both parents. Using Hollingshead's (1975) ratings, the median occupational status of the parents was 6 (i.e., technician, semi-professional, or small business owner) for mothers and 7 (i.e., manager, minor professional, entertainer, or artist) for fathers. In terms of religious affiliation, 49% of the high school students and 82% of the college students identified themselves as Catholic. Approximately 75% of the high school students were planning to attend college following graduation.

Fifty-three percent of the girls in this sample were nonvirgins, a figure consistent with the 1988 National Surveys of Family Growth, which reported that 53.2% of girls between the ages of 15 and 19 are nonvirgins (Forrest & Singh, 1990). The percentage of nonvirgins at each grade was: 19% of 9th and 10th graders; 59% of 11th and 12th graders; and 66% of college students. The overall mean for age at first intercourse was 16 years ( $SD = 1.7$ ) and the average number of times sexually active female subjects engaged in sexual intercourse in the preceding month was 3.4 times ( $SD = 3.1$ ).

## Measures

To operationalize the constructs in the model, minor changes were made to existing measures. Internal consistencies are reported for the total female sample. To obtain estimates of test-retest reliabilities on the scales, 58 college students completed the questionnaires two weeks after the initial testing.

The Parental Approval of Sexual Behavior Scale (PASB) and the Friends' Approval of Sexual Behavior Scale (FrASB) measure adolescents' perceptions of their parents' and friends' approval of respondents engaging in four behaviors (kissing, light petting, heavy petting, and sexual intercourse) at four levels of relationship involvement (someone with whom they had gone out once or twice, someone with whom they were going steady, someone with whom they were in

love, and someone whom they were planning to marry). A sample item of the PASB and FrASB is "If you engaged in heavy petting with someone you're in love with, what reaction would you expect from the following if they knew about it?" The wording of the scale, including responses, was based on the Parental Approval of Problem Behavior Scale (Jessor & Jessor, 1977), whereas the levels of relationship involvement were based on the Premarital Permissiveness Scale (Thomson, 1982).

Below each of the 16 questions, each referent (mother, father, and friends) was listed and responses were reported on a 4-point Likert scale ranging from 1 (*would strongly disapprove*) to 4 (*would approve*). Scores were given separately for mothers, fathers, and friends. A summary parental approval score was used, given the high correlation between mothers' approval scores and fathers' approval scores,  $r(249) = .84$ .<sup>2</sup> Total Parental Approval scores ranged from 32 (strong disapproval) to 128 (approval). Of the 27% of the participants who did not live with both parents, 22% (mother absence,  $n = 3$ ; father absence,  $n = 13$ ) had missing data for one parent, indicating that they did not know how the absent parent would feel about their sexual behavior. For these participants, the total scale score for the present parent was doubled. The PASB yielded a coefficient alpha of .95 and a test-retest reliability coefficient of .82.

FrASB scores ranged from 16 to 64. The FrASB had a coefficient alpha of .90 and a test-retest reliability coefficient of .81.

The Discussion of Sexual Topics Checklist was used to measure the number of sexual topics adolescents discussed with their mothers. Adapted from the Sex Education Inventory (Bennett & Dickinson, 1980), the checklist differed in terms of the number of topics listed; instead of the general topic of birth control, specific methods of birth control were listed (e.g., condoms, birth control pill). The checklist required respondents to indicate which of the 17 topics listed (e.g., pregnancy, "how far to go" on a date) had been discussed with their parents. Three categories were included: topics discussed with mother, topics discussed with father, and topics discussed with both parents. To score discussion with mother, any topic that indicated discussion with mother or with both parents was given a score of 1. Discussion of sexual topics with mother scores (DST-Mother) ranged from 0 to 17. The DST-Mother coefficient alpha was .91 and the test-retest reliability coefficient was .82.

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<sup>2</sup>There were mean differences between perceived mother ( $M = 39.57$ ,  $SD = 8.85$ ) and father ( $M = 37.28$ ,  $SD = 9.05$ ) approval scores,  $t(262) = 7.19$ ,  $p < .001$ .

The Discussion of Sexual Topics with Friends (DSTFR) Checklist assessed the number of sexual topics adolescents discussed with their friends. Identical to the DST-Mother, the DSTFR required respondents to indicate which of the 17 topics listed had been discussed with their friends. The coefficient alpha for the DSTFR was .90 in this sample, and the test-retest reliability coefficient was .88.

The Premarital Sexual Attitudes Scale (PSAS), a 16-item scale, measured adolescents' personal acceptance of four sexual behaviors (kissing, light petting, heavy petting, and sexual intercourse) at four levels of relationship involvement (someone with whom they had gone out with once or twice, someone with whom they were going steady, someone with whom they were in love, and someone whom they were planning to marry). Based on Reiss's (1967) Premarital Sexual Permissiveness Scale, the PSAS was modified by increasing the number of sexual behaviors and by changing the referent to the self, a method used by Herold (1981) to measure premarital sexual attitudes. Scoring of the PSAS was based on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Responses were summed to provide the total sexual permissiveness score, which ranged from 16 (less permissive sexual attitudes) to 80 (highly permissive sexual attitudes). The PSAS yielded a coefficient alpha of .89; the test-retest reliability coefficient was .68.

The Sexual Behavior Inventory (SBI) measured heterosexual involvement in the past two years. Respondents indicated the frequency of each of four types of sexual behavior (tongue kissing, light petting, heavy petting, and sexual intercourse) on a 4-point Likert-type scale ranging from 1 (*never*) to 4 (*frequently*). The SBI was based on the Sexual Experience Inventory developed by Bennett (1984). At the request of the schools, changes from the original scale included the omission of explanations that accompanied light and heavy petting.<sup>3</sup>

The original scoring procedure was modified so that responses could be weighted. First, a score of zero was given to all never responses. To assign more weight to light petting than to kissing, to heavy petting than to light petting, and to intercourse than to heavy petting, the following scores were assigned: kissing was scored as 1, 2, and 3 for once or twice, sometimes, and frequently, respectively; light petting was scored as 4, 5 and 6; heavy petting as 7, 8, and 9; and sexual intercourse as 19, 20, and 21. The scores of the four items were summed to yield the total sexual behavior score. Thus, a respondent who en-

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<sup>3</sup>"Going all the way" was included as a descriptor of sexual intercourse. Consistent with the original measure, the SBI was intended to measure sexual behaviors that were voluntary and heterosexual; however, this intent was not made explicit.



gaged frequently in kissing, light petting, and heavy petting—but never in sexual intercourse—received a score of 18, whereas the non-virgin respondent received a minimum score of 19. Total sexual behavior scores ranged from 0 to 39 and yielded a test-retest reliability coefficient of .91.

## Procedure

Participating high schools assumed responsibility for obtaining informed consent from both parents and students. Eighty-seven percent of the high school students enrolled in the health classes in which the questionnaires were administered participated in the study. Sixty-two percent of the college students were recruited through the subject pool of one college; the remaining participants were recruited through psychology classes. All adolescents were told that they were participating in a study of adolescent and young adult sexuality and would be answering a number of questions about their sexual behaviors and attitudes. The types of questions to be asked were explained (e.g., “a number of questions ask about how your parents and friends would react if you engaged in certain behaviors”). Questionnaires were administered in small groups. To insure confidentiality of responses and to control for order effects, the order of the scales was counterbalanced in a Latin square design.

## RESULTS

The focus of the analyses was on determining age differences in the paths of influence from parents and peers to sexual behavior. However, in Appendix A, we present means and standard deviations of scores on parent and peer scales and on behavior scales and results from analyses of variance (ANOVAs) to provide information regarding age differences in the level of parent and peer approval of sexual behavior and in discussion of sexual topics. In turn, to test our age-related hypothesis, we used structural equation modeling; this procedure affords tests of whether a set of variables show a different pattern of interrelations at different ages or across different groups (Green, 1992). As such, the proposed model was tested separately for the three age groups to examine age differences in the influence of parents and peers throughout the adolescent years.

### Assessing the Goodness-of-Fit of the Model

The LISREL VII program (Jöreskog & Sörbom, 1989) was used to analyze the goodness-of-fit of the model. LISREL estimates the unknown parameters (e.g., path coefficients) in the model. In this model, the number of parameters to be estimated equated the number of known parameters (e.g., covariance between variables); in other words, the model was just identified, so a model with fewer direct effects was tested. Given that, theoretically, a change in the influence of parents is expected to occur in early adolescence, fewer age differences in the direct effects of parent influences from midadolescence to late adolescence were expected; as such, the direct paths from parental approval and from discussion with mother to sexual behavior were eliminated from the model at all ages. Conversely, given that the influence of friends was hypothesized to be different across the age groups, the direct effects of friends' approval and of discussion with friends on sexual behavior were maintained in the model.

A multisample analysis was conducted to compare the goodness-of-fit of the reduced model at each age level: early (9th and 10th grades), midadolescence (11th and 12th grades), and late adolescence (college). This model was accepted in the multisample analysis,  $\chi^2(6, N = 263) = 6.88, p = .33$ . For 9th and 10th grade girls, the goodness-of-fit index was .98; for 11th and 12th grade girls, the goodness-of-fit index was .99; and for college women, the goodness-of-fit index was .99. These results suggest that the model provides a good fit to the data.<sup>4</sup>

### Assessing Age Differences in the Paths of Influence

To assess age differences, we first tested the most restrictive model, which equated the magnitude of the paths (i.e., the path coefficients in the beta and gamma matrices) across the three age groups. This model did not fit the data,  $\chi^2(20, N = 263) = 37.87, p < .01$ . The beta matrix reflects path coefficients between attitudes and behavior, whereas the gamma matrix reflects the path coefficients between parent and peer variables to attitudes and behavior. Because we expected age differences in the gamma matrix, we tested the model that equated the path coefficients from the attitudes to sexual behavior (beta matrix) but

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<sup>4</sup>The intercorrelations among variables for each age group are presented in Appendix B. To insure the appropriate use of LISREL, we tested an additional model in which the effects of the exogenous variables on sexual behavior were mediated through sexual attitudes. We conducted a multisample analysis to compare the goodness-of-fit of this model for each grade level. The results were significant,  $\chi^2(12, N = 263) = 40.09, p < .001$ , indicating that the indirect effects model either did not fit the data or the existence of age

allowed age differences in the path coefficients from parent and peer variables to attitudes and behavior (gamma matrix); this model was accepted,  $\chi^2(8, N = 263) = 8.16, p = .42$ . Hence, subsequent analyses fixed this path coefficient across age groups.

To examine age differences in the influence of parent and peer variables (gamma matrix), the path coefficients were equated across age groups, except for those that were expected to show age differences on an a priori basis; that is, the direct and indirect path coefficients from friends' approval to sexual behavior and from discussion with friends to sexual behavior. When the path coefficients from discussion with friends were allowed to vary, both models were rejected: for the model with the direct path coefficient from discussion with friends to sexual behavior, when allowed to vary,  $\chi^2(18, N = 263) = 35.77, p < .01$ ; and for the model with the path coefficient from discussion with friends to sexual attitudes, when allowed to vary,  $\chi^2(18, N = 263) = 32.64, p = .02$ . The model with the direct path coefficient from friends' approval to sexual behavior, when allowed to vary, was rejected,  $\chi^2(18, N = 263) = 32.53, p < .02$ . Only the model with the path coefficient from friends' approval to sexual attitudes, when allowed to vary, was accepted,  $\chi^2(18, N = 263) = 28.02, p = .06$ .

These results suggest that the most appropriate model for these data include age differences in the indirect path coefficient from friends' approval through attitudes to sexual behavior. The goodness-of-fit indices were .95, .98, and .95 for the three age groups, respectively. Although these results indicate that the model provides an acceptable fit to the data, modification indices showed that the path coefficient between mother discussion and premarital sexual attitudes should be allowed to vary in the 9th- and 10th-grade group. Given that this modification was consistent with a priori expectations derived from the previously mentioned literature, a model allowing age differences in the path coefficients from friends' approval to attitudes and from discussion with mother to attitudes was tested and accepted,  $\chi^2(17, N = 263) = 20.96, p = .23$ . However, this model had a large root mean square residual for the college sample ( $RMR = 41.77$ ) suggesting that the fit of the model could be improved. Modification indices provided a useful means for assessing what changes in the model would improve its fit to the data. The largest modification index was for the path coefficient between friends' approval and sexual behavior in the college sample; because age differences in this influence were consistent with our a priori expectations, we decided to free it. Thus, a final model was tested and accepted,  $\chi^2(16, N = 263) = 16.00, p = .45$ , in which the path coefficient from (a) friends' approval to sexual attitudes was allowed to vary in all three age groups, (b) discussion with mother

to sexual attitudes was allowed to vary in the 9th and 10th age group, and (c) friends' approval to sexual behavior was allowed to vary in the college sample. (See Figure 2.)

### Solutions for the Model for Each Grade Level

This model fixed the following path coefficients that were significant across the three age groups: premarital sexual attitudes that had a positive effect on sexual behavior,  $\beta = .17$ ,  $z = 4.44$ ,  $p < .001$ ; parental approval of sexual behavior and discussion with friends that had positive effects on premarital sexual attitudes,  $\beta = .16$ ,  $z = 3.39$ ,  $p < .001$  and  $\beta = .18$ ,  $z = 3.56$ ,  $p < .001$ , respectively; and discussion with friends that had a positive direct effect on sexual behavior,  $\beta = .08$ ,  $z = 3.45$ ,  $p < .001$ .

The results for the three age groups, when the path coefficients were allowed to vary, are presented separately. First, for 9th and 10th grade girls, the goodness-of-fit index was .98; the root mean square residual was 5.63. All three of the path coefficients allowed to show age differences were significant: Discussion with mother was negatively related to participant's acceptance of premarital sex,  $\beta = -.25$ ,  $z = 2.81$ ,  $p < .01$ ; friends' approval of sexual behavior was positively associated with sexual attitudes,  $\beta = .44$ ,  $z = 5.61$ ,  $p < .001$ ; and friends' approval had a positive effect on sexual behavior,  $\beta = .07$ ,  $z = 2.50$ ,  $p < .01$ . The last path coefficient was equated in the 9th and 10th and in the 11th and 12th grade samples. The total coefficient of determination (an index of the total variance predicted by all the equations jointly) for the 9th and 10th grade sample was .63. The squared multiple correlations for the individual equations were  $R^2 = .60$  for sexual attitudes and  $R^2 = .17$  for sexual behavior, indicating that the model explained more of the variance in sexual attitudes than in sexual behavior.

For 11th and 12th grade girls, results indicated that the model provided an even better fit to the data: the goodness-of-fit index was .99 and the root mean square residual was 4.00. Friends' approval had a positive direct effect on sexual attitudes,  $\beta = .64$ ,  $z = 8.16$ ,  $p < .001$ , and in the path coefficient that was fixed for 9th and 10th and for 11th and 12th grades, friends' approval had a positive effect on sexual behavior,  $\beta = .07$ ,  $z = 2.50$ ,  $p < .01$ . The path coefficient between discussion with mother and sexual attitudes that was fixed for 11th and 12th graders and the college sample was not significant. The total coefficient of determination for the 11th and 12th grade sample was .54. The squared multiple correlations for the individual equations were  $R^2 = .52$  for sexual attitudes and  $R^2 = .10$  for sexual behavior.

For college women, the goodness-of-fit index for the model was .97 and the root mean square residual was 22.74. Friends' approval of

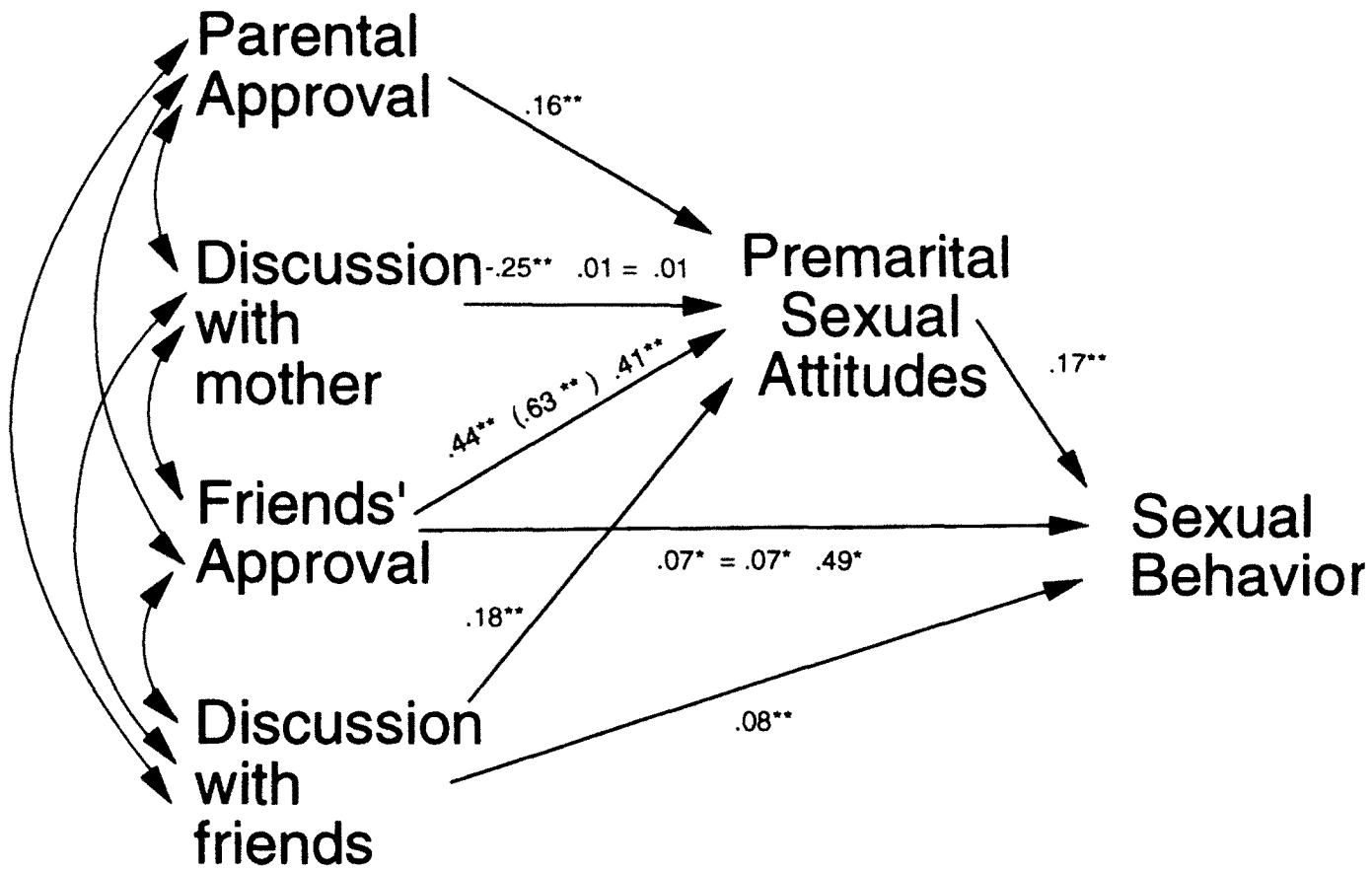


FIGURE 2 Solutions for the model for all three grade levels. Paths with significant age differences have three coefficients, which refer to the 9th and 10th grade, 11th and 12th grade, and college age samples respectively. Path coefficients that were fixed across the age groups are indicated by an equal sign. \* $p < .01$ . \*\* $p < .001$ .

sexual behavior had both a direct positive effect on sexual behavior,  $\beta = .49$ ,  $z = 2.61$ ,  $p < .01$ , and an indirect effect on sexual behavior via sexual attitudes,  $\beta = .41$ ,  $z = 4.27$ ,  $p < .001$ . The total coefficient of determination for the college sample was  $.41$ . The squared multiple correlations for the individual equations were  $R^2 = .51$  for sexual attitudes and  $R^2 = .08$  for sexual behavior.

### DISCUSSION

The aim of this study was to develop and test a model of the influence of parents and friends on adolescent sexual behavior that would integrate age-related changes in these influences. As expected, results suggested that the influence of friends and parents varied as a function of the age of the adolescent. The effects of discussion with parents and parental approval on sexual behavior operated indirectly through sexual attitudes with the effect of discussion with mother being the strongest in the 9th and 10th grades. The indirect influence of friends' approval on sexual behavior via sexual attitudes varied across the

three age groups, apparently peaking in 11th and 12th grades, whereas the direct effect of friends' approval on sexual behavior seemed to peak in the college sample.

Consistent with the expectation that parents would exert most of their influence in early adolescence, we found that the importance of discussing sexual topics with mothers appears to peak in 9th and 10th grades, at which time it has a negative effect on sexual attitudes. These findings indicate that young adolescent girls are using their mothers as sources of information; whether these discussions are initiated by mother or daughter is unclear. However, the information conveyed is important for this age group because it affects their views on engaging in premarital sex. In a similar vein, Fisher (1986a) found that the sexual attitudes of young adolescents and parents were highly correlated when parent-child communication was high; but the attitudes were not related when the parent-child communication was low.

However, the influence of mothers does not remain stable across adolescence. In our study, the amount of discussion with mother had no effect on sexual attitudes in the later age groups. Similarly, Fisher (1986b) found that, regardless of the amount of discussion taking place, middle adolescents' attitudes bore no similarity to mothers' attitudes. Conversations with mothers tend to center around issues of reproduction (Fox, 1980; Thornburg, 1981); mothers' attitudes tend not to favor premarital intercourse, which may not be consistent with the needs of middle adolescents who are presumably thinking about engaging in or actually engaging in sexual intercourse.

Why do mothers lose their influence in the later age groups? Douvan and Adelson (1966) suggested that friends replace mothers in this area; our findings support this hypothesis. The influence of friends operated in two ways: Indirectly through its effect on sexual attitudes and directly on sexual behavior. The indirect effect of perceptions of friends' approval seemed to peak in 11th and 12th grades. We had also expected that, by late adolescence, individuals would be less susceptible to peer influence; but our findings suggest that the direct influence of peers is actually stronger in college than in the younger age groups.

Presumably, there are two ways in which adolescents appraise their friends' approval of their sexual behavior. One avenue is through asking their friends' opinions and advice regarding their behaviors or relationships (e.g., discussing "how far to go" on a date). Evidence for this avenue of peer influence comes from our finding of differences in mean level of discussion with friends from early to late adolescence (see Appendix A). The significant increase suggests that friends are replacing mothers in middle to late adolescence. Another avenue for friends' influence is through observing friends' behavior. Thus, if one's

friends are engaging in sexual intercourse, one may assume that they would approve of one engaging in similar behavior. Most of the college students in our sample were living in dormitories, making their friends' behaviors easily observable; this situation may explain why the direct effect of friends' attitudes on behavior seemed to peak in college. Moreover, in the college years, late adolescents are forming new friendships and are possibly choosing friends whose behaviors or attitudes are consistent with their own; this could result in a greater effect of friends' influence.

The power of the model in explaining sexual behavior was considerably less than was the case for sexual attitudes. Over 50% of the variance in sexual attitudes was explained at each grade level. The amount of variance in sexual behavior that was accounted for ranged from 17% in the youngest sample to 8% in the college-age sample, findings consistent with the results of Jorgenson and Sonstegard (1984). The relation between sexual attitudes and behavior may be weak in all three groups because adolescents may not have had the opportunity to engage in sexual behaviors (e.g., never being in a serious relationship). Moreover, endorsing attitudes without engaging in behaviors consistent with those attitudes may provide the adolescent with an arena for exploring one's sexuality without dealing with the consequences of those behaviors. For example, a young girl may see herself as a "free spirit" and endorse "free love" attitudes but not engage in premarital sex. As such, she can test the reactions of parents and peers and see what being permissive entails without having to deal with the more negative potential consequences of engaging in the behaviors (e.g., pregnancy, a "bad" reputation, or AIDS). In fact, just solely on her age, she may expect to encounter different reactions regarding appropriate sexual behavior (Spreecher, McKinney, Walsh, & Anderson, 1988).

Our findings also suggest that other variables may be operating to influence sexual behavior. Hence, future research with the model should include additional influences on sexual behavior, such as characteristics of the dyadic relationship in terms of time in the relationship, commitment to the relationship, and relationship satisfaction (Christopher & Cate, 1985; Herold & McNamee, 1982; Jorgensen, King, & Torrey, 1980). Other variables of interest include partner's sexual attitudes and parental and peer approval of partner's behaviors. Within a developmental context, a study is needed that examines couples throughout the adolescent years in order to disentangle effects from parent, peer, and partner influences. One might expect that, over time, a couple takes on an identity of its own, one that overrides the pressures associated with parent and peer approval.

In addition to including the influences from the partner, research should examine whether it is appropriate to select a college sample as representative of late adolescents. In this study, 75% of the high school sample were expecting to attend college, suggesting a continuity in sample characteristics between the high school and the college samples. However, the question remains whether these findings are generalizable to noncollege late adolescents.

Another limitation of this study is that the religious backgrounds of the high school and the college samples differed, with the college samples reporting a greater proportion of Catholics. Affiliation to Catholicism in itself is not an accurate predictor of sexual behavior. One study of sexual behavior with adolescents conducted by Devaney and Hubley (Hayes, 1987) found no differences between Catholics and those from other denominations in the likelihood of reporting sexual activity. It should be noted, however, that religiosity in terms of strength of beliefs and practice has been found to have a restraining effect on sexual activity (DeLamater & MacCorquodale, 1979; Hayes, 1987; Zelnik, Kantner, & Ford, 1981). Thus, if the college students were more religious, age differences in attitudes and behavior may have been masked because participants tend to endorse more conservative sexual attitudes and behavior.

Our findings suggest the utility of a developmental approach to understanding adolescent sexual behavior, an approach recently advocated by others (Crockett & Chopak, 1993; Koch, 1993). Future research should take into account the possibility of differences in the meaning of sexuality to adolescents of various ages as well as in the predictors of sexual behavior for the different ages within adolescence. There is a paramount need for longitudinal research in this area if we are to understand fully the development of sexual behavior and sexual decision-making.

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APPENDIX A  
Means and Standard Deviations of Scores on Parent and Peer Scales and on Behavior Scales

Variable	Grade Level					
	9th-10th <sup>a</sup>		11th-12th <sup>b</sup>		College <sup>c</sup>	
	M	SD	M	SD	M	SD
Discussion with mother	8.3	4.0	7.6	4.3	7.3	4.2
Parental approval	74.9	16.4	77.3	17.3	77.5	16.7
Discussion with friends	9.3	4.4	10.0	4.0	12.3	2.9
Friends' approval	51.9	8.0	52.6	7.9	53.1	7.0
Sexual attitudes	58.1	8.2	59.9	11.1	59.4	7.6
Sexual behavior	13.8	12.9	26.9	13.8	27.8	13.6

Note. Results of 3 group, one-way ANOVAs indicated that both sexual behavior and discussion with friends differed significantly as a function of grade,  $F(260) = 22.02, p < .001$ , and  $F(260) = 12.98, p < .001$ , respectively.

<sup>a</sup> $n = 55$ . <sup>b</sup> $n = 120$ . <sup>c</sup> $n = 88$ .

APPENDIX B  
Intercorrelations Between Scales for 9th-10th Grade, 11th-12th Grade, and College Students

Variable	Discussion With Mother	Friends' Approval	Discussion With Friends	Sexual Attitudes	Sexual Behavior
9th-10th grade students <sup>a</sup>					
Parental approval	.03	.51***	.08	.47***	.14
Discussion with mother	—	-.16	.53***	-.22	.13
Friends' approval		—	.18	.73***	.28*
Discussion with friends			—	.22	.35**
Sexual attitudes				—	.28*
Sexual behavior					—
11th-12th grade students <sup>b</sup>					
Parental approval	.19**	.46***	.10	.42***	.10
Discussion with mother	—	.12	.36***	.16	.10
Friends' approval		—	.34***	.69***	.24***
Discussion with friends			—	.38***	.28***
Sexual attitudes				—	.25***
Sexual behavior					—
College students <sup>c</sup>					
Parental approval	-.02	.46***	.02	.41***	.12
Discussion with mother	—	-.14	.36***	.02	-.02
Friends' approval		—	.26**	.59***	.28**
Discussion with friends			—	.31***	.11
Sexual attitudes				—	.49***
Sexual behavior					—

<sup>a</sup> $n = 55$ . <sup>b</sup> $n = 120$ . <sup>c</sup> $n = 88$ .

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .005$ .

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