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## Female Adolescents' Attitude towards Sexually Risky Behaviors<sup>1</sup>

By Janet F. Wang<sup>2</sup>, Patricia S. Simoni<sup>3</sup>, Ying Wu<sup>4</sup>, Christine Banvard<sup>5</sup>

### Abstract

This cross-sectional survey examines the association between attitudes and female adolescents' sexually risky behaviors. A sample of 159 subjects, aged 14 – 20 from three high schools in West Virginia participated in the study. The results indicate that 60.3% (n = 96) reported having had sexual intercourse and, of this sexually active group, 60.4% (n = 58) stated that they had sex the first time at age 15 or younger. Fifty-five percents (n = 88) reported at least one of the following behaviors: (1) sexual initiation at age 15 or younger, (2) frequent sexual intercourse last month, (3) multiple sex partners, (4) unprotected sex during last sex, and (5) had sex with drug or alcohol. Multiple regression analysis indicates that those participants who favor premarital sex were more likely to engage in sexually risky behaviors. The items of "favoring premarital sex" and "living arrangements" were the only two items that were independently found to be related to the sexually risky behaviors. Female adolescents who lived with both parents were less likely to engage in sexually risky behaviors.

*Keywords:* Attitudes, sexually risky behaviors, rural female adolescents

### Introduction and Background

Early age at sexual initiation has been associated with more sexual partners during adolescence and lack of consistent condom use (Hutchison, 2002). Half of new HIV cases occur in those younger than 25 years of age; one quarter occur in people younger than age 21 (CDC, 2005), and the primary route of HIV infection among young people is through sexual contact. Kamuss (2003) identified factors that have been associated with risky sexual behaviors and pregnancy, including race, ethnicity, social influences; attitudes toward contraception, condoms and pregnancy; and safe sex behavioral skills.

The Center for Disease Control (2001) reports that the risk of acquiring an STI is higher for adolescents than adults in the US. Abma (2001) reports those adolescents' overall rates of sexual activity, pregnancy, childbearing are decreasing, and the use of contraceptive and condom use is increasing. Terry and Manlove (2000) report that the proportion of adolescents who have had sex at an early age has increased, female adolescents' contraceptive use at the initial sexual experience is rising, yet their contraceptive use for recent sexual experiences is falling. The rates of unprotected sexual activity, sexually transmitted infection (STIs), pregnancy, and childbearing continue to be

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higher among adolescents in the United States (US) than those young people in comparable industrialized countries (Singh & Darroch, 2000).

Parental socialization of children's behavior might be the single most important influence in the lives of the children and adolescents, because behavior is influenced by social context, with parent-child relationship contributing to the shaping of adolescent sexual behaviors; parents exert significant influence on sexual risk-related beliefs, attitudes, and behaviors of adolescents ( Szapocznik & Coatsworth, 1999). Studies found greater incidence of risk-taking behaviors among adolescents where there were low levels of parental monitoring (DiClement, Wingood, & Crosby, 2001; Donenberg, Wilson, & Emerson, 2002; Rai & Wu, 2003). In addition, more sexual activity is reported among adolescents whose parents have not completed high school than among those of college graduates (Santelli, Lowry, & Brener, 2000).

Socio-economic status is related to adolescents' sexually risky behaviors. Among the socioeconomic indicators that significantly predict sexual-risk behaviors and pregnancy are the adolescent's having a parent with low educational attainment and living in a single parent family (Lynch, 2001). Miller and associates (1997) studied family influence on adolescents' sexual behaviors and found that young people's social influences affect their sexually risky behaviors. Family influence, especially mother's behaviors, may also affect the adolescent girl's own sexual behaviors (Miller, 1997).

Adolescents who perceived their mothers' disapproval of their having sex or who talked with their mothers about contraception before first intercourse are less likely than others to become sexually active or to fail to use condoms (Miller et al, 1997). The family's involvement with religion may also affect adolescents' sexuality. Adolescents who are more actively involved in religious activity and those who avoid general nonsexual high-risk behaviors tend to initiate in sex later, compared to other teenagers ((Moore, 1998). Adolescents who had higher religious scores were more likely to have initiated sex at a later age (McCree, 2003).

Family living arrangements appeared to have an effect on female adolescents' sexuality. Those adolescents who were living in one-parent households were more likely to engage in sexual activity and related risk behaviors (Miller et al, 1997). A study exploring living arrangements found fewer behavioral problems among children living with married, biological parents, than among those living with cohabiting or blended families (Nelson et al, 2004). Wang (2006) found that female adolescents who live with both biological parents reported less sexual activity than those not living with both biological parents, 55% versus 77%. Female adolescents' own level of academic achievement was positively related to age at sexual debut (Wang, Simoni, & Wu, 2006). Research studies on female adolescents' sexuality and sexually risky behaviors in rural West Virginia are limited.

### **West Virginia Women and Cervical Cancer**

The women of West Virginia (WV) lead the US in the incidence of cervical cancer, an illness known to be highly associated with infection by HPV. Invasive cervical cancer has been identified as the leading cause of cancer-related death in WV women between the ages of 25 and 44 (WV Health Department, 1999). In 1995, the latest year for which US rates are available, WV age-adjusted mortality rate for cervical

cancer (4.1 per 100,000) remained greater than the corresponding US rate (2.7 per 100,000) (WV Health Department, 1999). A yearly average of 50 WV women die of cervical cancer (WV Health Department, 1999).

This study addresses the gap by investigating the female adolescents' attitude towards sexuality and sexually risky behaviors in rural WV.

### **Purpose of Study**

The purpose of this study is to examine influences on sexual behavior in an understudied sample of rural adolescent females, ages 16 through 19, including rural white, black, and non-white others (e.g., Hispanic, Asian-Pacific Islanders) who reside in WV. The rationale for this study is the dearth of research in current health care literature in the area of sexual behavior among rural adolescent females. This study was to identify relationships among (a) demographic variables, (b) attitude towards sexuality, (c) sexually risky behaviors, and (d) use of sexual protection in adolescent females living in a rural WV.

### **Theoretical Framework**

Fishbein's Theory of Reasoned Action (TRA). The theory of reasoned action served as the theoretical framework for this study (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). The TRA posits that one's attitude toward a specific behavior and subjective norms concerning the behavior co-predict the intent to perform behavior X and its subsequent performance. Attitude refers to a favorable or unfavorable disposition toward behavior X. Subjective norms refers to perceived social pressure from significant others to carry out behavior X. Intention refers to willful intent to perform behavior X, and behavior refers to the actual performance of a specific behavior, in this study, early sexual behavior.

This theory was selected over other developmental and risk behavior theories because of its respectability and empirical confirmation among scientists and its use with diverse groups of behavior, such as drug use, gang behavior, sexual intercourse, sexual risk behaviors, and health practices.

The theory of reasoned action predicts that adolescents' engagement in sexual behavior is a function of their intention to engage in that behavior. Intention to engage in sexual behavior is a function of adolescents' attitudes toward sexually risky behaviors, as well as the subjective norms about sexually risky behaviors held by their peer or family (reference groups). Certainly for adolescents, the family and peer group are key referents for subjective norms. Preliminary to exploring intervention strategies to minimize exposure of young women to STIs is the need to explore their attitudes, beliefs, and actual practices of sexually risky behaviors.

### **Methodology**

#### *Design and sample*

The study design was a cross-sectional survey investigating adolescents' attitude towards sexuality and sexually risky behaviors. The study was conducted from September to October of 2003, focusing on three high schools that draw students from a rural, medically-underserved population in WV. A total of 159 female adolescents, enrolled in the high schools' academic programs, participated in the study. This research

was approved by the West Virginia University Institutional Review Board (WVU IRB) for protection of human subjects. Written consent forms were signed by the participants 18 or over, and by parents of subjects who were under age 18.

After obtaining permission from the high school principals, the investigators described the purpose of the study to the students. All eligible students in three high schools were approached, and those who agreed to participate stayed in the classroom. Those who refused to participate in the study went to the library. The questionnaires that assessed demographics, attitudes toward sexuality, and sexually risky behaviors were administered to the participants on a school day in a health class. A sample of 159 students completed the questionnaires. The investigators emphasized to respondents that completion of all questions was voluntary and the completed questionnaire was anonymous. Each participant was given a small incentive after they have completed the questionnaires.

### *Instruments*

*Demographics.* Demographic variables investigated included the following: age, age of sexual initiation, living arrangement (living with both parents, with father only, with mother only, with other relatives), parents' employment (employed, unemployed), parents' education (below high school, high school graduated, associate degree, 4-year college, graduate degree), and religion (yes/no).

*Sexually risky behaviors.* Based on the responses to the questions of sexual behaviors, the sample was classified into 'risk' and 'no risk' group. The risk group consisted of those who reported one or more of the following risky behaviors: early sexual initiation (at age 15 or younger), frequent sex (had sexual intercourse 6 or more times last month), sex with multiple partners (more than one sexual partner), unprotected sex (did not use any type of birth control during last sexual encounter), and drug use and/or alcohol use when having sex.

Attitudes toward sexuality were assessed, using the *Attitude and Value Inventory* from *the Sexuality Questionnaires for Adolescents* (Kirby, 1998). Kirby's (1998) *Inventory* measured (a) attitudes and sexuality, (b) Sexually Transmitted Infections (STIs), (c) values that facilitate positive and healthy sexuality, and (d) values that reduce STIs or unintended pregnancy.

The inventory contained 70 questions. Each question had five response options: 1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. This inventory included 14 subscales to assess attitudes in different dimensions related to sexuality:

(1) Clarity of Long-Term Goals, measured by 5 items, such as 'I have a good idea of where I am headed in the future'; (2) Clarity of Personal Sexual Values, measured by 5 items, such as 'I have my own set of rules to guide my sex life'; (3) Understanding of Emotional Needs, measured by 5 items, such as 'I know what I need to be happy'; (4) Understanding of Personal Social Behavior, measured by 5 items, such as 'I usually understand the way I act'; (5) Understanding of Personal Sexual Response, measured by 5 items, such as 'I know how I react in different sexual situations'; (6) Attitude towards Various Gender Role Behaviors, measured by 5 items, such as 'Women and men should be able to have the same jobs when they are equally capable'; (7) Attitude towards Sexuality in Life, measured by 5 items, such as 'A sexual relationship is one of the best

things a person can have'; (8) Attitude towards the Importance of Birth Control, measured by 5 items, such as 'More people should be aware of the importance of birth control'; (9) Attitude towards Use of Force and Pressure in Sexual Activity, measured by 5 items, such as 'No one should pressure another person into sexual activity'; (10) Recognition of the Importance of the Family, measured by 5 items, such as 'Family relationships can be very valuable'; (11) Attitude towards Premarital Intercourse, measured by 5 items, such as 'Unmarried people should not have sex'; (12) Self-Esteem, measured by 5 items, such as 'I am satisfied with myself', (13) Satisfaction with Social Relationship, measured by 5 items, such as 'I feel good having as many friends as I have'; (14) Satisfaction with Personal Sexuality, measured by 5 items such as 'I am happy with my sexual behavior now'. The scoring of a subscale was the mean value of all items in that subscale.

### *Statistical analysis*

The Statistical Analysis System version 9.1.2 was used to analyze the data. Descriptive variables were examined. This includes characteristics of both "no risk" and "risk" groups of sexually risky behaviors. To assess reliabilities of the 14 scales measuring the attitudes towards sexuality, we calculated Cronbach's alpha ( $\alpha$ ) values of the scales. The coefficient  $\alpha$  value is one of the most widely-used indices of internal consistency reliability for assessing scale measurements (Cronbach, 1951). The scores of the 14 subscales for the 'risk' and 'no risk' group, were collected, which reflected the levels of related measurements in the two populations. Significant differences between groups were assessed using t-test.

To examine whether and which dimensions of the related attitudes had significant, independent impacts on the sexually risky behaviors, we conducted multiple logistic regression analysis, using the 14 subscales as independent variables. Age and living arrangement were also entered into the model as control variables. This analysis estimated the odds ratio of sexually risky behaviors and calculated the 95% confidence interval of the odds ratio for each independent variable. The 'non-risk' group was used as the reference.

## **Results**

### *Sample characteristic*

Table 1 shows the characteristic of the study sample. A total of 159 female adolescents, ages 14 - 20, participated in the study (mean = 16.8 years). A few subjects were older than 18, because they were unable to finish their high school in a timely fashion. The subjects were almost racially homogeneous, with only 2% ( $n = 3$ ) reporting that they were non-Caucasian. The majority of the subjects (82%,  $n = 130$ ) were born in the rural state where the study was conducted. Ninety-six subjects (61%) were living with both biological parents, 25% ( $n = 40$ ) were living with their mothers, 6% ( $n = 10$ ) were with their fathers, and 7.6% ( $n = 12$ ) with other relatives. In the overall sample, 96 (60%) were sexually active.

### *Sexually risky behaviors*

Self-reports of sexual behaviors are shown in Table 2. Of the 159 participants, 96 participants reported having sexual experience. Eleven subjects did not provide any response to sexual behavior questions. Among the sexually active subjects, 58 (60.4%) had first time sex at age 15 years or younger, 33 (34.4%) had sex more than 6 times last month, 60 (62.5%) reported having had sex with two or more people, 14 (14.6%) did not use birth control last time having sex, 53 (55.2%) had a history of using drugs and/or alcohol when having sex. Overall, 88 participants reported one or more of the five sexual risk behaviors investigated, and 74 reported engagement of more than one of these risk behaviors.

Of those 96 subjects who had sexual experiences, 85% used contraception the last time they had sex; among them, 29 (36%) used birth control pills with a condom, 19 (24%) used birth control pills alone, 24 (30%) used condom alone, and the remaining 8 (10%) used withdrawal and other methods. Data also showed that 7.9% ( $n = 7$ ) of subjects reported having STDs in the past year.

### *Attitudes toward sexuality*

*Comparisons of group mean scores.* Table 3 also shows the mean scores of the 14 subscales measuring attitudes towards sexuality for the 'risk group' ( $n = 88$ ) and for the 'no risk group' ( $n = 60$ ). The 11 subjects who did not answer sexual behaviors questions were not assigned a group membership, and, therefore, were excluded from this analysis. As shown in Table 3, the attitudes in 10 dimensions were not different statistically between groups. However, the risk group had significantly higher levels of 'Clarity of Long-Term Goals' (4.01 vs. 3.71,  $p = .023$ ), had better 'Understanding of Personal Sexual Response' (3.81 vs. 3.46,  $p = .0023$ ), and had high scores in 'Attitude towards Various Gender Role Behaviors' (4.21 vs. 3.92,  $p = .011$ ), indicating an attitude appreciating higher equality between genders. The scores of 'Attitudes towards Premarital Sex' were also significantly different between groups. The 'no risk' female adolescents were more opposed to premarital sex (3.27 vs. 2.5,  $p < .0001$ ).

*Internal consistency reliabilities.* Table 3 shows the reliability coefficients ( $\alpha$ ) of the sample. For scales used in research,  $\alpha$  value 0.7 or higher are generally seen as a good reliability (Nunnally, 1978). For the 14 subscales used in this study, 12 subscales had good  $\alpha$  values (ranged from 0.7 to 0.9). The  $\alpha$  values of the other two subscales were 0.65 and 0.66 which were acceptable. Table 3 also shows the  $\alpha$  values from the article that published these subscales (Kirby, 1998). The  $\alpha$  values of the scales in our sample were very close to the published values, except for three subscales: 'Attitude towards Use of Force and Pressure in Sexual Activity' subscale in our sample had a higher  $\alpha$  value (0.73 verse 0.58); 'Attitude towards Birth Control' subscale in our sample had a lower  $\alpha$  value (0.66 verse 0.72); 'Satisfaction with Personal Sexuality' subscale in our sample had a lower  $\alpha$  value (0.77 verse 0.81).

*Associations with sexually risky behaviors.* Multiple logistic regression was calculated using data from the 148 subjects who provided responses to the questions of sexual behaviors. The results are presented in Table 4. Controlling for age and living arrangement, 'Attitudes towards Premarital Sex' was the only factor that had an independent impact on the sexually risky behaviors (odds = 0.56; CI = 0.34 – 0.93;  $p = .02$ ). The independent effect of living arrangement was strong. The female adolescents

living with both parents are less likely to engage in sexually risky behaviors (odds = 0.41; CI = 0.17 – 1; p = .05).

## **Discussion**

Most studies on STIs have focused primarily on sexually experienced young women, and few have been conducted in rural areas among female adolescents. Demographic findings descriptive of the rural region in which this study was conducted were that (a) educational levels reported for many of the subjects' fathers were lower than the levels reported for subjects' mothers and (b) parents were typically employed in service or labor jobs, rather than in professions. In this population, unemployed fathers accounted for more than 12%, higher than national and state level of about 4.7% (*Unemployment News*, 2003).

One finding is that the four items measuring attitudes toward sexuality present mixed results. For example, clarity of long-term goals, understanding of personal social response, attitudes toward various gender role behaviors, and attitude toward premarital sex was significantly related to attitude towards sexuality (see table 3). Controlling for age and living arrangement, 'Attitude towards Premarital Sex'; was the only factor that had independent impact on the sexually risky behaviors. This finding leads to the speculation that age may be an indication of the level of maturity of the subject and is related to attitude towards one's sexuality. The older females may be more mature and have more experience in sexual activities. Further study is warranted for interpretation of these findings

The data showed a high percentage (60.5%) of participants engaged in sexual activity, when compared with another study (Kann , 1997), which reported that approximately 45% of respondents had participated in sexual intercourse. As indicated in Table 2, one of the risky behaviors is defined as engaging in sexual activities below age 15. Wang and colleagues (2006) found that adolescents living with biological parents reported less sexual activity than those not living with both parents, 55% versus 77%, and the findings supports Santellie's (2000) assertion that family structure plays a role in the young girls' sexual behavior. The findings also support Markham's (2003) findings that connectedness within family is a strong protection preventing female adolescents from risk-taking sexually.

### **Implications for Nursing Practice**

This study adds emphasis to the complexity of understanding the factors that may contribute to the incidence of adolescents' sexually risky behaviors. Young female adolescents who engaged in sexual activity are alarmingly high. This study showed that over 60% of the participants engaged in sexual activity. A significant predictor of the early sexual activities is the family living arrangements. The findings challenge researchers and health educators to identify strategies that will motivate students to learn and to apply learning to behaviors. Living arrangements seemed to influence the adolescents' sexual activities. These findings should inspire an examination of factors that may influence primary prevention education within the home. The involvement of parents with female adolescents in school-based programs may lead to increased communication and effective education regarding sexually risky behaviors.

Helping adolescents make decisions, such as contraceptive use or prevention of STIs, mothers' involvement with the female daughters, seems to be effective in



preventing adolescents' sexually risky behaviors (Santilli, et al, 2000). STIs prevention must move beyond school curricula. Efforts must focus on programs involving cognitive and practical skills necessary to engage the female adolescents in safe sex behaviors. We conclude that education of female adolescents related to sexually risky behaviors and prevention of STIs are important and strongly influenced by the students' family and social environments. Research related to the education of adolescents regarding sexuality and prevention of STIs must be continued.

#### Limitations

There are limitations of the study: (a) the sample was overwhelmingly Caucasian White. The homogeneity of the subjects is a limitation that precludes generalization of the findings to all populations; (b) the data were self-reported by the participants, answering written questionnaires; (c) the settings were limited to three high schools in one county, a limitation to generalizing the findings to other rural areas. Replication of this study must include a more diverse population.

#### Conclusion

There is a need to focus on the cultural aspect of the female adolescents' immediate environments that reflects the family's beliefs and, ultimately, their value systems toward sexually risky behaviors among female adolescents. Parental behaviors, including verbal and non-verbal communication, provide behavioral directions for the female adolescents. It is likely that family connectedness, as well as parental concerns of adolescent success in school and later in life, and involvement of the adolescents' various activities may be important factors in delaying the onset of sexual activity. Those female adolescents, who may have high aspirations and life goals, are likely to delay sexual activity than those who have no specific life goals. Therefore, it can be concluded that efforts to reduce female adolescents' sexually risky behaviors and STIs must focus, not only on health professionals and school systems, but also on parental involvement and close monitoring of the female adolescents' activities.

It is believed that given the high rates of unintended pregnancy and STIs among female adolescents, reducing adolescents' sexually risky behaviors has been identified as a leading national priority in the US, under the *Healthy People 2010 Initiative (Healthy People, 2001)*, as well as an individual priority (WHO, 1992).

The findings in this study are consistent with other studies in which parents' behaviors were found to affect daughters' sexual behaviors. Further studies are warranted to understand how family cultural and ethnic differences affect female adolescents' sexually risky behaviors. Understanding of these differences may help policy makers and educators plan for educational programs for prevention of STIs and delaying early sexual initiation for the adolescents.

Table 1. Characteristics of the 159 Female Adolescents

|                                    | N   | %    |
|------------------------------------|-----|------|
| <b>Age</b>                         |     |      |
| 14 – 15                            | 32  | 20.1 |
| 16 – 17                            | 67  | 42.1 |
| 18 – 20                            | 60  | 37.7 |
| <b>Living with</b>                 |     |      |
| Both parents                       | 96  | 60.8 |
| Father                             | 10  | 6.3  |
| Mother                             | 40  | 25.3 |
| other relatives                    | 12  | 7.6  |
| <b>Father's education</b>          |     |      |
| 1 below high school                | 9   | 6.2  |
| 2 high school graduated            | 110 | 75.9 |
| 3 jr. college graduated            | 22  | 15.2 |
| 4 college graduated                | 2   | 1.4  |
| 5 over college/ graduate education | 2   | 1.4  |
| <b>Mother's education</b>          |     |      |
| 1 below high school                | 3   | 2.0  |
| 2 high school graduated            | 107 | 71.3 |
| 3 jr. college graduated            | 34  | 22.7 |
| 4 college graduated                | 4   | 2.7  |
| 5 over college/ graduate education | 2   | 1.3  |
| <b>Father's employment</b>         |     |      |
| Employed                           | 122 | 87.8 |
| Unemployed                         | 17  | 12.2 |
| <b>Mother's employment</b>         |     |      |
| Employed                           | 98  | 65.8 |
| Unemployed                         | 51  | 34.2 |
| Had Religion                       | 122 | 76.7 |
| Had sexual history                 | 96  | 60.0 |

Table 2. Sexual Behaviors Assessments among the 96 Sexually Active Female Adolescents

|  | N  | %    |
|--|----|------|
| Age of sexual initiation (years)                         |    |      |
| 10   | 2  | 2.2  |
| 11   | 1  | 1.1  |
| 12   | 2  | 2.2  |
| 13   | 8  | 8.7  |
| 14   | 13 | 14.1 |
| 15   | 32 | 34.5 |
| 16   | 22 | 23.9 |
| 17   | 10 | 10.9 |
| 18   | 2  | 2.2  |
| Frequency of sexual intercourse last month               |    |      |
| 0 time   | 27 | 28.7 |
| 1-2 times  | 21 | 22.3 |
| 3-5 times  | 13 | 13.8 |
| 6-10 times   | 20 | 21.3 |
| more than 10 times                                       | 13 | 13.8 |
| Number of sex partners                                   |    |      |
| One  | 29 | 32.6 |
| two or more  | 60 | 67.4 |
| Ever had sex when using drug and/or alcohol <sup>a</sup> | 53 | 57.0 |
| Used birth control / last time having sex <sup>a</sup>   | 80 | 85.1 |
| Contraceptives methods / last time having sex            |    |      |
| birth control pills with a condom                        | 29 | 36.3 |
| birth control pills alone                                | 19 | 23.8 |
| condom alone   | 24 | 30.0 |
| had sex during the safe time of the month                | 0  | 0.0  |
| Withdrawal   | 7  | 8.8  |
| Other  | 1  | 1.3  |
| Had a sexually transmitted disease (STD) <sup>a</sup>    | 7  | 7.9  |

a. A binary variable (yes/no)

Table 3. Internal Consistency Reliabilities and Group Mean Scores of the Subscales for Measuring Attitude towards Sexuality

|   | Cronbach's alpha |                         | Mean <sup>a</sup> (Std)    |                                   | p <sup>c</sup> |
|---|------------------|-------------------------|----------------------------|-----------------------------------|----------------|
|   | published        | study sample<br>n = 159 | no risk<br>group<br>n = 60 | risk group <sup>b</sup><br>n = 88 |                |
| Clarity of long-term goals                                    | .89              | .89                     | 3.71 (0.93)                | 4.01 (0.86)                       | *              |
| Clarity of personal sexual values                             | .73              | .73                     | 3.74 (0.69)                | 3.82 (0.84)                       |                |
| Understanding of emotional needs                              | .81              | .82                     | 3.50 (0.80)                | 3.76 (0.87)                       |                |
| Understanding of personal social behavior                     | .78              | .80                     | 3.55 (0.85)                | 3.70 (0.82)                       |                |
| Understanding of personal sexual response                     | .80              | .70                     | 3.46 (0.57)                | 3.81 (0.79)                       | **             |
| Attitude towards various gender role behaviors                | .66              | .65                     | 3.92 (0.72)                | 4.21 (0.64)                       | *              |
| Attitude towards sexuality in life                            | .75              | .73                     | 2.83 (0.71)                | 3.02 (0.87)                       |                |
| Attitude towards the importance of birth control              | .72              | .66                     | 4.49 (0.72)                | 4.65 (0.50)                       |                |
| Attitude towards use of force and pressure in sexual activity | .58              | .73                     | 4.62 (0.76)                | 4.68 (0.46)                       |                |
| Recognition of the importance of the family                   | .70              | .74                     | 4.40 (0.73)                | 4.51 (0.52)                       |                |
| Attitude towards premarital sex                               | .94              | .90                     | 3.27 (1.16)                | 2.50 (0.83)                       | ****           |
| Self-esteem   | .73              | .71                     | 3.59 (0.76)                | 3.71 (0.87)                       |                |
| Satisfaction with personal sexuality                          | .85              | .77                     | 3.72 (0.80)                | 3.96 (0.87)                       |                |
| Satisfaction with social relationship                         | .81              | .77                     | 3.79 (0.82)                | 3.90 (0.85)                       |                |

1. a. Subscale early sexual initiation (at age 15 or younger),

2. frequent sex last month (6 or more times),

3. had sex with multiple sex partners (2 or more),

4. did not use birth control last time sex,

5. ever had sex with drug and/or alcohol.

mean score was consisting of items with coding 1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree.

b. The risk group was those who reported one or more of the following behaviors:

The 11 subjects who did not provide response to sexual behavior question were excluded from the group comparisons.

c. Student t-test p values for the comparisons of two group mean scores: \*p < .05, \*\*p < .01, \*\*\*p < .001, \*\*\*\*p < .0001.

Table 4. Odds Ratios and 95% Confidence Intervals from Multiple Logistic Regressions for Sexually Risky Behaviors.

|   | Odds Ratio <sup>a</sup> | (95% CI)      | p-value |
|---|-------------------------|---------------|---------|
| Age   | 1.15                    | (0.84 - 1.57) | 0.37    |
| Living arrangement  |                         |               |         |
| living with both parents                                      | 0.41                    | (0.17 - 1.00) | 0.05    |
| other living arrangement                                      |                         |               |         |
| Clarity of long-term goals                                    | 1.87                    | (0.96 - 3.64) | 0.065   |
| Clarity of personal sexual values                             | 0.41                    | (0.16 - 1.08) | 0.071   |
| Understanding of emotional needs                              | 1.21                    | (0.46 - 3.17) | 0.69    |
| Understanding of personal social behaviors                    | 0.88                    | (0.42 - 1.87) | 0.74    |
| Understanding of personal sexual responses                    | 2.02                    | (0.81 - 5.01) | 0.13    |
| Attitude towards various gender role behaviors                | 1.92                    | (0.93 - 3.95) | 0.077   |
| Attitude towards sexuality in life                            | 1.29                    | (0.71 - 2.35) | 0.41    |
| Attitude towards the importance of birth control              | 0.93                    | (0.36 - 2.37) | 0.87    |
| Attitude towards use of force and pressure in sexual activity | 0.71                    | (0.27 - 1.88) | 0.49    |
| Recognition of the importance of the family                   | 1.21                    | (0.50 - 2.96) | 0.67    |
| Attitude towards premarital sex                               | 0.56                    | (0.34 - 0.93) | 0.024   |
| Self-esteem   | 0.99                    | (0.49 - 2.02) | 0.98    |
| Satisfaction with personal sexuality                          | 1.29                    | (0.72 - 2.32) | 0.4     |
| Satisfaction with social relationship                         | 0.82                    | (0.44 - 1.51) | 0.52    |

a The no-risk group was used as the reference. The 11 subjects who did not provide response to sexual behavior questions were excluded from the regression. Total number = 148.

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