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Forced Intercourse, Individual and Family Context, and Risky Sexual Behavior among Adolescent Girls

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Abstract

Objective—This study tested the hypothesis that individual and family factors associated with adolescent risky sexual behavior (RSB) operate differently in their relationship to RSB among girls who have experienced forced sexual intercourse (FSI), as compared to those who have not.

Method—Data were collected from 3,863 eighth-grade girls from a larger statewide sample. Different subgroups of participants received different sets of questions, so 655 to 2548 students were included in each analysis. Multilevel modeling was used to examine relationships of individual (social negotiation skills, personal safety, depression, sensation-seeking personality) and family factors (sibling deviance, parental monitoring, and quality of family relationships) to RSB. FSI was examined as a predictor of RSB and as a moderator of the relationship between individual and family variables and sexual risk.

Individual predictors: Social negotiation skills were associated with lower RSB for all girls, but had a stronger relationship to RSB among girls who had experienced FSI. Depression and sensation-seeking tendencies had small positive relationships to RSB for all girls.

Family predictors: For girls without a history of FSI, parental monitoring was associated with lower sexual risk behavior. However, among girls who had experienced FSI, parental monitoring was not significantly related to RSB, but sibling deviance was associated with lower RSB.

Conclusions—Results suggest that social negotiation skills and parental monitoring may warrant further attention in research and intervention.

Keywords

adolescent sexual behavior; forced sexual intercourse; risky sexual behavior; adolescent girls

Unwanted sexual activity is a contributor to risky sexual behavior (RSB) and its outcomes, including sexually transmitted infection and unplanned pregnancy^{1–7}. Forced sexual intercourse (FSI) is prevalent among U.S. adolescent samples, with 10–20% of girls reporting FSI in their lifetimes^{1,4,7}. Girls who have experienced FSI are at risk for revictimization⁸, and report negative outcomes including alcohol and drug use^{4,7}, dating violence^{4,9}, depression and posttraumatic stress disorder^{8,10}, suicidal ideation^{4,6,9}, and

RSB³⁻⁷, defined here as intercourse before the age of 16, use of alcohol with sexual activity, inconsistent or absent condom use, and intercourse with 2 partners in the past month. These factors have demonstrated relationships to poorer sexual health outcomes in prior research².

Research is needed to better understand risk and protective factors for FSI and its outcomes. The current study explores how the experience of FSI, or ever having been forced to have sexual intercourse against one's will, is related to RSB in the context of individual and family factors. We posit that risk factors for RSB operate differently for girls who have experienced FSI than for those who have not.

Theoretical Framework

Bronfenbrenner's¹¹ ecological model provides a framework for conceptualizing the influences of individual and family factors and FSI on adolescent sexual behavior. The ecological model describes adolescent development in the context of multiple systems: individual biology and personality; the microsystem (family, school and peers); mesosystem (structure and quality of interactions among microsystem factors); exosystem (community-level resources and influences); and macrosystem (sociocultural and political environments). The current study focuses on the individual, micro-, and mesosystems.

Family Factors

In adolescent micro- and mesosystems, family relationship quality and parental monitoring are predictors of sexual behavior among population-based samples¹²⁻¹⁵. For adolescents with a history of FSI, family factors may contribute both to experiencing FSI and to its outcomes. Family may influence FSI directly, as when forced intercourse is perpetrated by an abusive family member¹⁶, or indirectly, through processes that expose adolescents to risky situations, as with inadequate monitoring^{17,18}. Monitoring influences adolescents' friends and dates, indirectly shaping risk for sexual assault¹⁸. At the same time, monitoring is partially dependent on adolescents' disclosure of their activities, and adolescents who spend time with deviant peers may be less likely to disclose activities¹⁹. Deviant siblings may also increase the likelihood of victimization or traumatic experiences among other siblings, particularly younger ones^{20,21}.

Family processes may also affect outcomes from FSI. One study of a family-based intervention for adolescent FSI effected improvements in family functioning, adolescent drug use, depression, and PTSD, suggesting that family support (from non-abusing family members) may improve outcomes¹⁶. Still, few studies of adolescent FSI include detailed measures of family relationships and functioning, so research is needed to better understand the contributions of family to these adolescents' sexual behavior.

Individual Factors

At the level of individual biology and personality, psychological research has examined a wide range of factors and their relationships to sexual behavior. Three of these factors examined in the present study are depressed mood²², sensation-seeking tendencies²³, and social negotiation skills²⁴. These three factors were chosen because they have shown a relationship to RSB in prior research²²⁻²⁴, may be amenable to intervention, and were available in our survey.

Sensation seeking is defined as obtaining psychological reward from engaging in exciting or "intense" experiences²⁸. As sexual activity represents an opportunity for intense sensation and experience, several studies have found a link between sensation seeking and adolescent

RSB^{29,30}. Prior studies have not examined sensation seeking among adolescent survivors of FSI. Experience of FSI may increase or decrease teens' desire to act on sensation-seeking tendencies with RSB.

Social negotiation skill, as defined in the current study, is the ability to enact a preferred course of action while maintaining relationships with others. Social negotiation skills may be particularly applicable to sexual relationships, allowing a teen to navigate sexual preferences or negotiate condom use^{24,31}. Research is lacking on the relationship of social negotiation skills to risky sexual behavior in the context of FSI, though it is conceivable that these skills would be helpful in negotiating sexual situations for all teens.

Depression has also been linked to adolescent sexual behavior. Studies of adolescent females have found self-reported depressed mood often co-occurs with RSB^{25,26}. Longitudinal analyses suggest that sexual behavior predates depression for adolescent girls, rather than the reverse²⁷. Many studies of depressed mood and RSB do not assess whether sexual activity was consensual. Depressed mood associated with sexual activity may be due to unwanted sexual experiences for some adolescents, and the link between depressed mood and RSB may differ by experience of FSI. Adolescents reporting FSI are at increased risk for depression compared to those who do not¹⁰.

The Current Study

The current study examines relationships among FSI, individual and family variables, and RSB for an adolescent female sample. The following hypotheses are addressed: First, we expect that FSI will be associated with RSB as a moderator of the effects of individual and family factors, but that it will not be independently associated. Second, we hypothesize that lower quality of family relationships, less parental monitoring, and more deviant sibling behavior will be associated with RSB for both groups of girls, but that the strength of relationships will differ for girls with and without FSI. Third, for girls with no history of FSI, we expect that sensation seeking and depression will be associated with higher RSB, and social negotiation skills with lower RSB. For girls who have experienced FSI, the existing literature does not provide guidance on sensation seeking and social negotiation skills, but we expect that depression will have a stronger relationship to RSB than for those without FSI.

Methods

Participants and Procedure

This study used data from the Oregon Healthy Teens (OHT) project, a statewide survey of 8th- and 11th-graders. The current study focuses on 8th graders. OHT surveyed 8th grades in 102 schools in 2000–01, 123 in 2001–02, 116 in 2002–03, and 131 in 2003–04, for a total of 176 unique schools. Staff removed surveys if students did not report their sex (~2%) or provided extreme (e.g., marked the highest or lowest values on all items) or inconsistent (e.g., reported alcohol use on one item but no alcohol use on another) responses (~2%), leaving 83,897 surveys across four years.

For the first three years, OHT staff administered anonymous, voluntary student surveys in classrooms. Students did not participate if they refused, were absent from class, withdrew from school, or had parents return a decline card. Of enrolled 8th graders, 79% completed surveys. During 2003–04, teachers administered the surveys. Teachers signed a confidentiality agreement to protect students' confidentiality, and students sealed surveys in envelopes before returning them. We have no return rate information from the fourth year, but comparisons to prior work in the same schools indicate that a similar proportion of

students completed surveys. All study procedures were approved by Oregon Research Institute's Institutional Review Board and relevant school system personnel.

The Current Sample—The current study focuses on girls who answered the survey questions on RSB. About 40% of the students did not receive these questions because of a random survey procedure that provided only part of the survey to each student. The survey was split into modules to allow a large number of questions while minimizing respondent fatigue. Each student received the demographics section and three randomly assigned modules. About 50% of students received any given item; 20% received any two modules, and 5% received any three modules (see Figure 1). A total of 3,863 participants were used in analyses. No methods were used to reconstruct missing values (<4%).

Measures

OHT survey items came primarily from the Youth Risk Behavior Survey (YRBS)³³, the Communities That Care (CTC) assessment³⁴ and surveys developed at Oregon Research Institute (ORI)^{35,36}.

Risky Sexual Behavior—The RSB measure, drawn from the YRBS³³, was a count of students' report of: intercourse (as intercourse prior to age 16 has been associated with adverse sexual health outcomes²), intercourse with 2 partners in the past three months, use of alcohol with most recent intercourse, and most recent intercourse without a condom. Cronbach's alpha was .68. Inter-item correlations were .27 to .50.

Forced Sexual Intercourse—Students responded yes or no to an item, drawn from the YRBS³³, asking if they had "ever been physically forced to have sexual intercourse against your will." Intercourse was not defined further.

Family Measures

Family Relationships: Seven items, drawn from CTC³⁴ and ORI measures^{35,36} asked about family insults, yelling, serious and repeated arguments, spending time with their mother or father, comfort asking parents for help with personal problems, and parents' verbal praise. Responses were on the scale: "NO!," "no," "yes," or "YES!" Items were averaged to create a scale, with an alpha of .84 and item-total correlations from .65 to .81.

Parent Monitoring: Two items, drawn from an ORI survey³⁶, asked how often parents knew what students were doing after school or away from home. Responses were "never," "sometimes," "quite often," "always." Four other items from CTC³⁴ asked about parent monitoring of homework, coming home on time, whereabouts away from home, and alcohol use. Students responded with the no-no-yes-yes scale described above. Cronbach's alpha was .80.

Sibling Delinquency: This 7-item summed scale was adapted from CTC³⁴ and asked students whether their siblings used alcohol, tobacco, or marijuana, carried a handgun to school, were suspended, expelled, or arrested, or been involved in a juvenile court. Students responded yes or no. The 5.6% who reported no siblings received a zero. Cronbach's alpha was .82.

Individual Measures

Sensation Seeking: Two scales measured sensation seeking. The first, from CTC³⁴, included 3 items assessing how often students engaged in activities "even if they are a little dangerous" and had an alpha of .81. The second, from the Brief Sensation Seeking Scale³⁷,

included items like “I like new and exciting experiences, even if I have to break the rules.” Alpha was .80. The scales correlated .57 for 1201 students who received both.

Personal Safety: An item drawn from the YRBS³³ served as a proxy for personal safety. This exploratory item, conceptualized as a tendency opposite that of sensation seeking, asked how often students wore a seatbelt when riding in a car driven by someone else. Responses ranged from never to always.

Social Negotiation Skills: Four items from CTC³⁴ presented hypothetical scenarios about what the respondent would do in challenging situations, such as if a friend slipped a CD under her coat. Response choices ranged from appropriate (e.g., “ask her to put the CD back”) to inappropriate (e.g., “grab a CD and leave”). Alpha was .56.

Depression: This measure consisted of 4 items from the Center for Epidemiological Studies, Depression scale (CES-D), shown to predict adolescent depression³⁸. Responses ranged from 0 for experiencing symptoms “0 days” to 3 for “5–7 days” during the past week. Items were summed; alpha was .79.

Covariates—School-level covariates included school size, U.S. Census-reported community income, and urbanization as measured by Rural-Urban Commuting Area codes. Student-level covariates included age, ethnicity and parent education.

Statistical Analysis

Analyses accounted for the nested structure of the data and began with selection of an unconditional model, including a random school-level intercept, fixed school-level slope, cohort-level variance around the slope, and an individual-level variance (Model 6A in Smolkowski et al.³⁹). We then fit conditional models to the data to provide parameter estimates for predictors of RSB for girls without a history of FSI, and the difference in the predictors between girls with and without a history of FSI. Analyses were conducted with SAS PROC MIXED (v. 9) using the restricted maximum likelihood method (REML) and degrees of freedom determined by the container option. Alpha was adjusted to .0014 to keep the study-wide Type I error rate .05. We computed a partial correlation (r) as an effect size for each estimate.

Results

Descriptive statistics

Table 1 provides descriptive statistics and Pearson product-moment correlations between RSB and other variables for girls with a history of FSI (5.7%) and without.

Multilevel models

Analyses were conducted separately for participants who received different modules. The outcome variable, RSB, was included in module B. FSI, the moderator, was in module F (see Figure 1). Three sets of analyses were conducted, each with a distinct group of participants who received the modules of interest for that analysis. Of the covariates, only student age contributed to and was retained in the analyses.

The analyses tested the interaction effect between FSI and each predictor, as well as a main effect for the predictor. The main effects shown in the tables represent the relationship between predictors and RSB among girls with *no* history of FSI. The interaction between the predictor and FSI represents the change in the predictor-RSB relationship between girls with

a history of FSI and those without. The main effects for girls *with* a history of FSI are reported in text but not shown in the tables.

Model 1: Family Relationships, Parental Monitoring, & Hours Unsupervised—

Model 1 examines constructs from Modules B, C, and F. Module B contained RSB items, Module C, quality of family relationships and parental monitoring, and Module F, FSI. A total of 660 participants completed these 3 modules. For girls without FSI, greater parental monitoring was associated with lower RSB, but quality of family relationships was not significantly related. Relationships of these variables to RSB were different for girls with a history of FSI (Table 2). Family relationship quality ($r=0.15$, $p=.003$) and parental monitoring ($r=.14$, $p=.003$) were not significantly related to RSB using our cutoff of $p<.001$.

Model 2: Sibling Deviance, Sensation-Seeking, & Social Negotiation Skills—

Model 2 included modules B, D, and F. Module D assessed sibling deviant behavior, sensation-seeking tendencies, and social negotiation skills. As before, Module B contained RSB and Module F, FSI. A total of 655 participants completed modules B, D, and F. Sensation seeking was positively related, and social negotiation skills were negatively related to RSB for girls without FSI. Sibling deviance was not significantly related to RSB for these girls. The experience of FSI moderated the relationships of sibling deviance and social negotiation skills to RSB (see Table 3). For girls with a history of FSI, sibling deviance was negatively associated with RSB ($r=-.23$, $p<.001$), and social negotiation skills had a stronger negative relationship to RSB than for girls without FSI ($r=-.30$, $p<.001$). The main effect of sensation seeking was not significant for girls with FSI ($r=.09$, $p=.07$).

Model 3: Safety, Sensation-Seeking, and Depression—Model 3 included Module B (RSB) and Module F (personal safety, depression, a second measure of sensation-seeking behavior, and FSI). A total of 2,548 participants completed modules B and F. For girls without FSI, personal safety was negatively associated with RSB, while sensation-seeking and depressive symptoms were positively associated. Experience of FSI did not moderate these relationships (i.e., the interactions with FSI were not statistically significant; see Table 4). For girls with a history of FSI, only depression was significantly associated with RSB ($r=.08$, $p<.001$). Main effects for sensation seeking ($r=.03$, $p=.23$) and personal safety ($r=-.02$, $p=.36$) were not statistically significant.

Discussion

Results of this study partially supported our hypotheses that family and individual factors had different relationships to RSB for girls with and without a history of FSI. Each research question is discussed in detail in the following paragraphs.

Experience of FSI

The first research question asked whether FSI was independently related to RSB. Experience of FSI had a moderate positive correlation with adolescent RSB in bivariate analyses. However, in multilevel models, FSI was not a statistically significant predictor of RSB after the inclusion of other variables. Rather, FSI moderated the relationships of other variables to RSB. This moderator relationship supports the hypothesis that experience of FSI is related to sexual behavior in the context of other factors.

Family Variables and RSB

The second research question asked which family factors were associated with RSB. For girls without FSI, parental monitoring was the only family factor with a significant relationship to RSB. Experience of FSI moderated the relationships of sibling deviance,

parental monitoring, and quality of family relationships to RSB. Sibling deviance had a negative relationship with RSB for girls who had experienced FSI. While magnitude of the effect was small, the negative relationship is surprising. Some studies have found sibling deviance to be related to deviant behavior in the target adolescent as well⁴⁰, and deviant behavior is often associated with RSB¹⁴. However, other research has found this is not always the case²⁰, and that sibling influences on deviant behavior are complex and involve multiple mediating influences²⁰. Perhaps girls experiencing FSI in the current sample did not respond to sibling deviant behavior by exhibiting deviant behavior themselves. It is also important to note that the association of sibling deviance to RSB was tested with a relatively small group of girls who had experienced FSI, $n=36$, and these results may not generalize to other girls.

Experience of FSI also moderated the associations of parental monitoring and quality of family relationships to RSB. For girls reporting FSI, there was a trend toward greater monitoring and more positive family relationships being associated with greater RSB. Though statistical significance was not reached using our cutoff of $p<.001$, the p -value for both these relationships was small, $p=.003$, as was the sample size of girls reporting FSI ($n=30$) for these analyses. These relationships were paradoxical, and further research among families of adolescents who have experienced FSI is needed to understand how family impacts associations between FSI and RSB. Further exploration should also help clarify how best to assess family environment, build on strengths, and promote additional skills such as monitoring and parent-child communication for families whose children have experienced FSI¹⁶. For girls without FSI, the strength of previous research suggests that improving family relationships and monitoring should remain a priority in decreasing RSB^{13–17}.

Individual Variables and RSB

The third research question asked which individual factors were associated with RSB. Sensation-seeking preferences and depressive symptoms had small positive relationships to sexual risk for girls with and without histories of FSI, while tendency to take personal safety precautions had a small negative relationship to RSB for both groups of girls. These relationships concur with previous research^{23,29,30}.

Of the individual factors, social negotiation skill was the strongest predictor of RSB for all girls. These decision-making and social skills allow a teen to do what she feels is right, while maintaining relationships and avoiding deviant behavior. This skill is useful in negotiating condom use, both in broaching the topic and persuading a partner to use protection^{24,31}. Current findings suggest that social negotiation skills could warrant further exploration as a protective factor for RSB, though the internal consistency of this measure was low in the current sample. Further research and validation of the construct could be helpful.

Limitations and Directions for Future Research

Several limitations should be noted. First, the survey items on RSB did not allow us to distinguish whether adolescents were reporting on a consensual or forced sexual encounter. For example, a forced encounter might increase the total number of sex partners reported by the participant, and could also contribute to other sexual risk factors like condom non-use. Thus, a participant's RSB score would have been influenced by her forced encounter, regardless of whether she'd had other sexual encounters. Unfortunately, this issue is inherent in cross-sectional research on FSI and RSB, and is shared by most of the published studies on this topic.

Other limitations include the use of self-report, small sample sizes for some models, and low reliability on the social skill measure. Self-report data is often the only option when examining sexual behavior; however, it is always possible that this method introduces bias or inaccuracy. The group of participants reporting FSI was quite small. It is fortunate that so few girls in our sample had experienced forced intercourse. The small sample size, though, may have limited statistical power to detect group differences, and these findings may not be generalizable. Finally, the items assessing social negotiation skills had an internal consistency of .56. This is acceptable for experimental research, but higher reliability is desirable.

Future research should focus on a number of questions left unresolved. First, what are the relationships of family factors such as quality of family relationships, parental monitoring, and sibling deviance to RSB for girls who have experienced FSI? The current study found that family factors had unexpected relationships to RSB for these girls, but did not clarify the nature of these relationships. Second, could social negotiation skill interventions have benefit for preventing re-victimization and risky consensual behavior for girls who have experienced FSI? Also might social negotiation skill interventions that are *not* specific to sexual situations have an impact on RSB? If so, these interventions could be incorporated into school and community curricula. Overall, this study provides some evidence that family and individual characteristics may have different relationships to RSB for adolescent girls with and without experience of FSI, and future research and intervention may provide benefit by targeting girls with a history of FSI for sexual risk-reduction programs.

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Implications and Contribution

This study tested whether individual and family factors had different relationships to risky sexual behavior (RSB) among girls who experienced forced intercourse (FSI), compared to those who had not. Social negotiation skills were associated with less RSB for all girls. Experience of FSI moderated the relationships of several family factors to RSB.

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Figure 1.
 Modular structure of the OHT survey

Table 1
Descriptive Statistics by History of FSI and Correlations with RSB for All 8th-Grade Girls

Measure	No FSI			FSI			Correlation with RSB
	Mean	SD	N	Mean	SD	N	
Age	13.59	0.53	5959	13.74	0.55	357	.08
Parent Education	4.30	1.21	2565	3.85	1.45	128	-.11
Risky Sexual Behavior	0.17	0.57	5959	1.33	1.21	357	–
Quality of Family Relationships	2.00	0.70	677	2.43	0.58	30	.17
Parent Monitoring	3.34	0.56	678	2.94	0.66	30	-.30
Sibling Deviance	1.50	1.84	672	3.60	2.25	40	.26
Sensation Seeking	2.48	1.33	677	3.59	1.59	40	.36
Personal Safety	4.45	0.84	5808	3.99	1.25	348	-.22
Social Negotiation Skills	3.18	0.64	677	2.44	0.85	40	-.46
Depression	3.06	2.84	5897	5.46	3.45	348	.25

Note: FSI refers to forced sexual intercourse; RSB refers to risky sexual behavior. Participants were included if they provided a data on sexual victimization and if they received the OHT survey module that contained each additional measure. **All t-tests for group differences and all correlations were statistically significant ($p < .001$).**

Table 2

Parental Monitoring, Quality of Family Relationships, Hours Unsupervised, and Sexual Victimization (Modules B, C and F) predicting Risky Sexual Behavior among 660 Eighth Grade Girls, with 27 who Experienced FSI

Effect	Partial <i>r</i>	DF	<i>t</i> -value	<i>p</i>	95% CI for partial <i>r</i>
FSI	-.00	407	-.01	1.00	-.10, .10
Quality of Family Relationships	-.10	407	-2.07	.04	-.20, -.01
FSI *Family Relationships	.16	407	3.34	<.001	.07, .26
Parent Monitoring	-.32	407	-6.73	<.001	-.40, -.23
FSI *Parent Monitoring	.22	407	4.57	<.001	.13, .31

Note: Intercept, effect of time, and variance components are not shown. After accounting for predictors, time did not significantly differ from zero. In addition, 95% confidence intervals of school-level and cohort-level variances included zero.

Table 3

Sensation-Seeking, Social Negotiation Skills, and Sexual Victimization (Modules B, D and F) predicting Risky Sexual Behavior among 655 Eighth Grade Girls, with 36 who Experienced FSI

Effect	Partial <i>r</i>	DF	<i>t</i> -value	<i>p</i>	95% CI for partial <i>r</i>
Sibling Deviance	.05	403	1.01	.31	-.05, .15
FSI *Sibling Deviance	-.23	403	-4.83	<.001	-.32, -.14
Sensation Seeking	.17	403	3.38	<.001	.07, .26
FSI *Sensation Seeking	.05	403	.94	.35	-.05, .14
Social Negotiation Skills	-.28	403	-5.75	<.001	-.36, -.18
FSI *Social Negotiation Skills	-.23	403	-4.82	<.001	-.32, -.14

Note: Intercept, effect of time, and variance components are not shown. After accounting for predictors, time did not significantly differ from zero. In addition, 95% confidence intervals of school-level and cohort-level variances included zero.

Table 4

Personal Safety, Sensation-Seeking, Depression, and Sexual Victimization (Modules B and F) predicting Risky Sexual Behavior among 2548 Eighth Grade Girls, with 120 who experienced FSI

Effect	Partial <i>r</i>	DF	<i>t</i> -value	<i>p</i> 95%	CI for partial <i>r</i>
Personal Safety	-.11	2241	-5.08	<.001	-.15, -.06
FSI *Personal Safety	.02	2241	.72	.47	-.03, .06
Sensation Seeking	.10	2241	4.95	<.001	.07, .15
FSI *Sensation Seeking	<.01	2241	.02	.98	-.04, .04
Depression	.07	2241	3.36	<.001	.03, .11
FSI *Depression	.05	2241	2.55	.01	.01, .10

Note: Intercept, effect of time, and variance components are not shown. After accounting for predictors, time did not significantly differ from zero. In addition, 95% confidence intervals of school-level and cohort-level variances included zero.