

A Model of Sexual Abuse's Effects on Suicidal Behavior and Delinquency: The Role of Emotions as Mediating Factors

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Received: 18 August 2007 / Accepted: 26 October 2007 / Published online: 15 November 2007
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Abstract Drawing on Agnew's general strain theory, we examined whether depressed mood and anger mediated the effects of sexual abuse on suicidal behavior and delinquency. Participants included 9,113 students attending high schools in Iceland. Structural equation modeling showed that, while controlling for family structure and parental education, being exposed to strain in the form of sexual abuse was positively related to both depressed mood and anger. The effects of sexual abuse on suicidal behavior of both boys and girls were twice as strong through depressed mood as through anger. The effects of sexual abuse on outwardly-directed forms of delinquency for both genders were stronger through anger than through depressed mood. These findings highlight the complex nature of the effects

of strain on adolescents' emotions and behavior. Moreover, they show that depression—in contrast to outwardly-directed delinquency, where feelings of anger are predominantly influential—is more relevant than anger to suicidal behavior.

Keywords Anger · Delinquency · Depressed mood · Sexual abuse · Strain · Suicidal behavior

Previous research has demonstrated apparent links between sexual abuse and a range of psychological and behavioral problems (for reviews, see Browne and Finkelhor 1986; Kendall-Tackett et al. 1993; Polusny and Follette 1995). According to Kendall-Tackett and colleagues (1993), a review of the literature on the impact of child sexual abuse shows that common symptoms among children are those of depression, aggression, self-destructive behaviors and delinquency. More recently, studies have established a strong relationship between sexual abuse and suicidal ideation and repeated suicide attempts (Brown et al. 1999; Garnefski and Arends 1998; Luster and Small 1997; Martin et al. 2004; Martin 1996). An association has also been confirmed between sexual abuse and delinquent behavior, including property crimes, aggressive behavior and violence (Baron 2004; Garnefski and Arends 1998; Swanston et al. 2003).

Despite the deleterious consequences of sexual abuse that have been documented in the literature, the pathways by which sexual abuse translates into negative outcomes, such as suicidal behavior and delinquency among young people, is less well understood. Agnew's (1992) revised general strain theory provides a useful framework for

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examining these associations. According to the theory, adolescents act in a delinquent manner because they experience strain; e.g., when they believe they have been mistreated by family members, teachers, peers, or others. The theory proposes that adolescents are pressed into delinquency by negative emotional reactions that result from being situated in these adverse circumstances from which they cannot escape. This frustrates the adolescent and may lead to desperate avoidance or anger-based delinquency (Agnew 1985, 1992, 2005). In this way, the theory can be distinguished from other theories of delinquency by its argument that individuals are pressed into delinquency by the strain they experience. Recently, Agnew reviewed studies testing the theory and concluded that previous work is limited because it examined the effect of a single measure of strain on delinquency (2001). Agnew suggested that the use of a single measure masks the effects of individual strain measures. He proposes that there is a need to examine specific types of strain in order to reveal which forms of strain have the strongest impact on delinquency and which do not. Further, in Agnew's most recent book (2005), he argues that particular emotions may be especially conducive to producing certain types of delinquent behavior, and suggests that research should be undertaken to determine whether depression is more likely than anger to result in "passive" crimes. We examine these issues in this study.

The present study sought to test some of the tenets of general strain theory by examining the effects of a particular type of strain—sexual abuse—on suicidal behavior and delinquency. Moreover, we examined whether anger and depressed mood were more conducive to some types of behaviors than others, i.e., whether depressed mood, as a result of sexual abuse, was more likely than anger to result in suicidal behavior than in outwardly-directed delinquency, including stealing, committing a burglary, vandalizing property or engaging in physical violence.

Prior Research on Strain, Emotional Reactions, Suicidal Behavior and Delinquency

Sexual Abuse as a Source of Strain

Numerous empirical studies have demonstrated an association between sexual abuse and a wide array of psychological problems (Briere and Elliott 2003; Garnefski and Arends 1998; Kendall-Tackett et al. 1993). For example, being exposed to sexual abuse has been linked to depressed mood among children and adolescents (Schraedley et al. 1999; Garnefski and Arends 1998). Studies have also shown an association between sexual abuse and other emotional reactions, such as anger and aggression,

among children, adolescents and adult victims (Dillo et al. 2000; Kendall-Tackett et al. 1993; Turner et al. 2006). In a recent study on the effects of lifetime victimization on the mental health of children and adolescents, Turner and colleagues (2006) showed that sexual abuse had an independent effect, when controlling for other victimizations and important demographic variables, on both internalizing symptoms of depression and on externalizing symptoms of anger and aggression.

This aspect of strain as a cause of multiple emotional reactions is a basic premise of social stress theory. Aneshensel et al. (1991) concluded that, contrary to the standard "medical illness" model, which considers the outcomes of stress on separate emotions, we now know that stress is a generalized determinant of mental and physical health. This means that we must simultaneously consider multiple health outcomes if we are to understand fully and properly the role of strain. Stressful life events and processes thus can operate as non-specific risk factors in determining a variety of symptoms and disorders, including both anger and depressed mood.

Emotional Reactions, Suicidal Behavior and Delinquency

General strain theory emphasizes anger as the most important emotional reaction to adverse experiences. A number of studies have established this link between strain and anger, as well as the importance of anger as a critical mediating variable in the relationship between adverse circumstances and outwardly-directed delinquency, as opposed to self-directed delinquency in the form of suicidal behavior (Agnew 1993; 2005; Brezina 1998; Capowich et al. 2001; Dillo et al. 2000; Hay 2003; Jang and Johnson 2003; Mazerolle and Piquero 1998). The theory also suggests that adverse experiences may produce other negative emotions, such as depressed mood, and that these emotions may translate into delinquent behavior (Agnew 1992). However, it is still not clear whether depressed mood creates a disposition for criminal behavior, unless it is accompanied by anger. Sigfusdottir et al. (2004) showed that while depressed mood and anger are overlapping emotions, they are separate in their relationship to behavioral outcomes. Sadness, lack of interest and loss of energy are often accompanied with outbursts of anger. When controlling for anger, depressed mood does not turn out to be related to outwardly-directed delinquent behavior. A model that does not include anger along with depressed mood would reveal a significant positive effect of depressed mood on outwardly-directed delinquency among adolescents. This effect is rendered insignificant once anger is included in the same model. Beyers and Loeber (2003),

however, found in a longitudinal study of urban adolescent males that depressed mood still exerted an effect on outwardly-directed delinquency (in the form of vandalism, shoplifting and using a weapon or force to get something from someone) after controlling for aggression, along with other common risk factors, in the same model. Thus, the findings on this issue were inconclusive.

There is some evidence that anger is sometimes inwardly directed (Spielberger 1999). However, recent research among delinquent adolescents on probation demonstrates the importance of feelings of anger in relation to the motivation for offending (Gudjonsson and Sigurdsson 2007). This finding clearly links anger to outwardly-directed forms of delinquency. It has been suggested that individuals living under strain and feeling depressed may engage in inwardly-directed forms of delinquency (Berkowitz 1986; Merton 1938). Recently, Agnew (2005) suggested that depressed mood is less likely than anger to result in aggressive delinquency. Since depressed individuals lack the strong motivation for revenge and the lowered inhibitions that anger provides (Kemper 1978; Kluegel and Smith 1986), they may be less likely to respond to their adversity with other-directed delinquency. However, in contrast, depressed individuals are more likely to respond by engaging in passive crime or self-destructive behavior. To date, no study has examined whether depressed mood is more likely than anger to result in passive crime or inwardly-directed forms of problem behavior, such as suicidal behavior.

Gender Differences in Reaction to Strain

According to general strain theory, gender differences in behavioral outcomes are due to the greater tendency of boys to respond to strain with anger (an externalizing emotion) and the greater tendency of girls to respond to strain with depressed mood (an internalizing emotion) (Broidy and Agnew 1997). Thus, a clearer understanding of boys' and girls' emotional responses to strain is needed to examine the core assumptions of the theory. Results regarding gender differences in emotional reactions following sexual abuse are quite inconclusive (Garnefski and Arends 1998; Schraedley et al. 1999; Wellman 1993). However, it has been suggested that girls are more likely than boys to respond to sexual abuse by internalizing symptoms rather than externalizing them (Feiring et al. 1999; Ullman and Filipas 2005). In general, studies on the effect of strain on emotions and behavior suggest that girls may be more likely than boys to respond to strain with anger (Broidy and Agnew 1997; Campbell 1993; Piquero and Sealock 2004).

Studies of behavioral outcomes have shown that females have a higher incidence of suicidal ideations and suicide

attempts than males (Bjarnason and Thorlindsson 1994; Hüsler et al. 2005; Wichstrom and Rossow 2002). In contrast, decades of research have shown that males generally have higher delinquency rates than females (Broidy and Agnew 1997; Caldwell et al. 2006; Steffensmeier and Allan 1995). Traditional theories of strain have suggested that the delinquent behavior of boys may be due to boys' being under more strain than girls. Strain, in this sense, stems from their inability to reach the goals of monetary success or middle-class status or both that boys may perceive society expects of them (Cohen 1955; Cloward and Ohlin 1960; Merton 1938). Within the mental health literature, strain has also been found to be an important explanation for higher levels of depressed mood among girls. A number of studies conclude that girls report more stress and strain than boys, including sexual abuse, and that they are more likely to respond to strain with depression (Feiring et al. 1999; Gore et al. 1992; Meadows et al. 2006; Seiffge-Krenke and Stemmler 2002).

General strain theory also emphasizes anger as the most important emotional reaction that increases the likelihood of delinquency. This emphasis makes higher levels of anger among girls and higher levels of delinquency among boys an unresolved issue. Why should girls become angrier than boys, but less delinquent? One explanation that has been suggested for this is that while girls experience higher levels of anger than boys, they also experience higher levels of depressed mood. Their depressed mood hence may counteract their anger and decrease the likelihood of other-directed delinquency (Broidy and Agnew 1997; Sigfusdottir et al. 2004). Another explanation may be that depressed mood among girls may result in different forms of behavior, namely self-destructive behaviors, or suicide. In the current study, we tested this suggestion. We hypothesized that girls would experience higher levels of depressed mood and anger than boys. However, we hypothesized that anger would be associated with higher levels of delinquency among boys than girls, while depressed mood would be associated with higher levels of suicidal behavior among girls.

When studying the interconnections among sexual abuse, emotions and delinquent behavior, it is important to control for the possible confounding influences of family structure and socioeconomic status. Children and adolescents living in poor socioeconomic conditions have been shown to be at increased risk for many types of childhood victimization and mental health problems (Turner et al. 2006). More specifically, low parental education has been related to increased risk for sexual assault among adolescents (Turner et al. 2006). Adolescents living in poor socioeconomic conditions show more symptoms of mental health problems, such as depression (Schraedley et al. 1999; Turner et al. 2006; Wight et al. 2006), and anger and aggression than other

adolescents (Turner et al. 2006). Furthermore, research has shown that there are higher rates of suicide in areas of high poverty, high social deprivation and high unemployment (Rehkopf and Buka 2006), and higher rates of delinquency among adolescents living in such poor socioeconomic circumstances (Heimer 1997; Wight et al. 2006).

Additionally, family structure seems to represent an important risk factor for various forms of child victimization (Turner et al. 2006). This seems to be especially the case for sexual abuse where children and adolescents living with single-parent and step families are at greater risk for abuse (Finkelhor 1993; Finkelhor et al. 1990; Turner 2006). Research has shown that adolescents from single-parent families experience higher levels of depression than adolescents living with both parents. This association between family structure and depression may be partially explained by poor socioeconomic resources and more social stress among adolescents living in single-parent households. Finally, family structure has been linked to both suicidal ideations and problem behaviors among adolescents (Ang and Ooi 2004; Hoffmann 2006). Since family structure and socioeconomic status may mitigate or ameliorate altogether the effects of sexual abuse on negative emotions, suicidal behavior and delinquency, we controlled for these variables in our analysis.

The Current Study

The aim of this study was to examine the mediating effects of depressed mood and anger in the relationship between sexual abuse and two outcome variables: suicidal behavior and delinquency. We hypothesized that the experience of sexual abuse would be a source of generalized strain that is positively related to the emotional reactions of depressed mood and anger. We further hypothesized that depressed mood and anger would mediate the relationship between sexual abuse on the one hand, and suicidal behavior and delinquency on the other. However, we hypothesized that the effects of depressed mood on suicidal behavior would be stronger than the effects of anger. Additionally, we hypothesized that the effects of anger on outwardly directed delinquency would be stronger than the effects of depressed mood on that form of delinquency. We also hypothesized that girls would be more likely than boys to respond to sexual abuse with feelings of anger and depressed mood. Finally, we hypothesized that depressed mood, resulting from sexual abuse, would be more strongly and positively related to suicidal behavior among girls than for boys, and that anger, resulting from sexual abuse, would be more strongly and positively related to outwardly-directed forms of delinquency among boys than girls. Thus, the specific hypotheses are as follows:

Hypothesis 1 Being exposed to strain, in the form of sexual abuse, is positively related to feelings of anger and depressed mood among adolescents.

Hypothesis 2 Depressed mood that results from sexual abuse is more strongly and positively related to suicidal behavior than anger.

Hypothesis 3 Anger that results from sexual abuse is more strongly and positively related to outwardly-directed forms of delinquency than depressed mood.

Hypothesis 4 Being exposed to strain, in the form of sexual abuse, is more strongly and positively related to feelings of both anger and depressed mood among girls than among boys.

Hypothesis 5 Depressed mood that results from sexual abuse is more strongly and positively related to suicidal behavior among girls than boys.

Hypothesis 6 Anger that results from sexual abuse is more strongly and positively related to outwardly directed forms of delinquency among boys than girls.

The model we tested controlled for the potentially confounding influence of family structure, which was operationalized by asking respondents whether they lived with either natural parents or in other family arrangements, and by asking them about their parents' combined levels of education. We also tested whether the relationship between sexual abuse, emotional reactions, suicidal behavior and delinquency differed by gender. We did so by comparing the fit of the model when it was estimated separately for boys and girls, to that of a model in which males and females were analyzed together.

Methods

Participants and Procedure

The data used for analysis in this study were drawn from a 2004 national survey of Icelandic adolescents. All data collection was conducted in strict accordance with the Privacy and Data Protection Authority in Iceland. The sample consisted of 16- to 19-year-old students attending all high schools in Iceland. The survey was conducted by and under the direction of the Icelandic Centre for Social Research and Analysis, in cooperation with the Government Agency for Child Protection, Ministry of Education, and the Public Health Institute of Iceland. Anonymous questionnaires were administered by teachers to all students who were present in class on October 20, 2004. The students received instructions about the purpose of the study and were told that some of the questions they would

be answering dealt with sensitive issues. The students had 80 min (two school lessons) to complete the questionnaires; upon completion, each student placed their questionnaire in a blank envelope that they then sealed. A total of 9,113 students, which represented approximately 80% of full-time students in this age group in Iceland, participated in the survey. There were 4,433 (49%) males and 4,652 (51%) females in the study (28 participants did not specify their gender on the questionnaire). The average age was 17.2 years (range, 16–19, $SD = 1.1$).

Measures

Five latent variables, along with two observed variables, were used in the analysis. All latent constructs were measured with multiple indicators. Two variables were used as control variables (family structure and parental education), one as independent variable (sexual abuse), two as mediating variables (depressed mood and anger) and two as dependent variables (delinquency and suicidal behavior). In Iceland, approximately 94% of the population is Caucasian and 88% of the population belongs to the Lutheran Church (Statistics Iceland 2001). Due to this homogeneity, other exogenous factors, such as race, ethnicity and religion, on which data are routinely collected and examined in research in the United States, were not included in the study.

Family Structure

Family structure measured whether adolescents live with both biological parents (71.5%) or in other family arrangements (28.5%). Within the group of adolescents living in other arrangements, a total of 11.1% lived with a single mother and 8.5% with a mother and stepfather. The remaining students lived with a single father (2.0%), their father and stepmother (1.6%), or in other settings (5.5%), such as with grandparents, siblings, relatives, or on their own. Response categories were either 1 = “living with both biological parents”, or 0 = “living in other family arrangements”.

Parental Education

As an indicator of socioeconomic status, respondents were asked about the educational attainment of each of their parents (0 = “finished elementary school or less”, 1 = “started a school on the secondary level”, 2 = “finished secondary level”, 3 = “started university level”, 4 = “has a university degree”). The scores were summarized on two scales ranging from 1 (mother finished

elementary education or less), to 5 (mother has a university degree) and from 1 (father finished elementary education or less), to 5 (father has a university degree). Responses ranged on a scale from 0 to 8.

Sexual Abuse

All participants were asked five questions on sexual abuse, all of which were adapted from the Baltic Sea Regional Study on Adolescents' Sexuality: A Survey among Young People (Mossige 2004). Participants could mark the age applicable for them for each question. Each question was recoded as a “yes” or “no” response to the experience once or more at age of 17 years or younger. Responses were thus either “no” = 0 or “yes” = 1 to each of the five questions. The introduction to the questions and the questions were as follows: *Sometimes people are persuaded, pressed or forced to participate in sexual activities they cannot protect themselves from. The following questions are about such situations. Have you been exposed to any of the following against your will?(if so how old were you when it happened):* “Somebody exposed him/herself indecently towards you”, “Somebody touched your body, excluding genitals, in an indecent way”, “Somebody touched your genitals”, “Somebody persuaded, pressed or forced you to touch his/her genitals”, and “Somebody persuaded you, pressed or forced you to have intercourse”. The scale including the five questions had a Cronbach's alpha of .77. The scale was recoded into a dichotomized variable to indicate whether a participant had ever been sexually abused 17 years old or younger, with responses being “no” = 0 or “yes” = 1.

Depressed Mood

Depressed mood was measured by eight items from the depression dimension scale of Derogatis et al. (1971). The participants were asked how often during the previous week the following statements applied to them: “I was sad or had little interest in doing things”, “I felt lonely”, “I had sleeping problems”, “I cried easily or wanted to cry”, “I felt sad or blue”, “I was not excited in doing things”, “I was slow or had little energy”, and “The future seemed hopeless”. Responses to each statement ranged from 0 = “never”, 1 = “seldom”, 2 = “sometimes” to 3 = “often”. Responses ranged on a scale from 0 to 24 with a Cronbach's alpha of .89.

Anger

Feelings of anger were measured by five items from a scale designed to assess the severity of anger problems

(Derogatis et al. 1973). Participants were asked how often during the previous week the following statements applied to them: “I was easily annoyed and irritated”, “I experienced outbursts of anger that I could not control”, “I wanted to break or damage things”, “I had a row with someone” and “I yelled at somebody or threw things”. Answers to each statement ranged from 0 = “never”, 1 = “seldom”, 2 = “sometimes” to 3 = “often”. The scale ranged from 0 to 15 with a Cronbach’s alpha of .82.

Suicidal Behavior

In order to assess the participants’ suicidal behavior, they were asked if any of the following applied to them: “Have you ever seriously considered committing suicide?”, “Have you ever told anyone that you were thinking about committing suicide?”, “Have you ever made an attempt to commit suicide?”, “Have you made an attempt to commit suicide during this school year?”. These four items were rated either 0 = “no”, or 1 = “yes” to each statement. Together, the response scale for these four items ranged from 0 to 4 with a Cronbach’s alpha of .75.

Delinquency

To assess respondents’ delinquent behaviors, they were asked how often they had done something of the following in the past 12 months: stolen something that was worth more than 5,000 Icelandic Kronur (approximately equivalent to 80 U.S. Dollars), committed a burglary to steal, vandalized, and used physical violence to steal. Answers ranged on a likert scale from 0 = “never”, 1 = “once”, 2 = “2–5 times”, 3 = “6–9 times”, 4 = “10–13 times”, 5 = “14–17 times”, “6 = “18 times or more often”. Together, the response scale for these four items ranged from 0 to 24 with a Cronbach’s alpha of .75.

Statistical Analysis

Our data analysis was based on structural equation modeling (SEM) and was conducted by using AMOS (Arbuckle and Wothke 1999; Maruyama 1998). SEM provides the possibility of studying multivariate relationships. It is commonly used to test mediating effects, allowing explicit modeling of both direct and indirect effects using both observed and latent variables (Maruyama 1998). Figure 1 shows our model of the expected effects of sexual abuse on depressed mood and anger, as well as their mediating effects on suicidal behavior and delinquency.

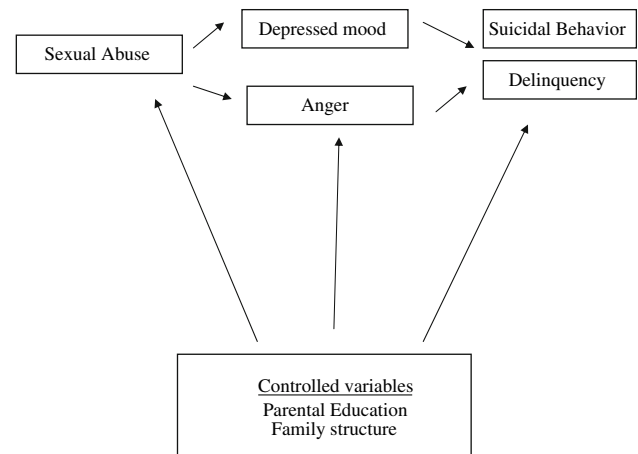


Fig. 1 A model of sexual abuse, depressed mood, anger, suicidal behavior and delinquency split by gender

As a first step toward testing the structural model, we specified and tested the measurement model. We specified five latent variables: parental education, depressed mood, anger, suicidal behavior and delinquency. Table 1 lists the factor loadings of items on each of the constructs. They are all substantial and statistically significant.

The specification included the number of factors, the number of indicators for each factor, and whether the measurement errors were allowed to correlate or not. Confirmatory factor analysis was used to test the fit of the hypothesized factor structure to the covariance matrix of the observed variables. The structural equation model shown in Fig. 1 can be expressed as

$$\eta = \beta \eta + \Gamma \zeta + \zeta$$

where β is the matrix of regression weights relating the endogenous (η) variables, suicidal behavior and delinquency to the mediating variables depressed mood, anger and sexual abuse. Γ is the matrix of regression weights relating the exogenous (ζ) variables, parental education and family structure to the endogenous (η) ones and ζ is a vector of error terms.

The traditional method in structural equation models is to perform a chi-square test of the null hypothesis that the observed and the expected matrices are identical. The model is thus accepted if the test fails to reject the null hypothesis. In large samples, such tests will reject good models on the basis of trivial misspecifications (Gerbing and Anderson 1993). This is what occurred in the current study. We analyzed two models, one for the entire sample, and another for boys and girls respectively. Due to the large sample size (the whole model included 9,085 cases), the chi-square tests turned out to be significant. The fit indices for the model, split by gender, are shown in Table 2. Apart from the chi-square test, other fit indices revealed that both models fit the data well, although the

Table 1 Standardized factor loadings for latent constructs

	Parental education Girls/boys	Depressed mood Girls/boys	Anger Girls/boys	Suicide Girls/boys	Delinquency Girls/boys
<i>Parental education</i>					
Mothers education	.62/.69				
Fathers education	.71/.64				
<i>Depressed mood</i>					
I was sad or had little interest in doing things		.73/.65			
I felt lonely		.71/.74			
I cried easily or wanted to cry		.73/.56			
I had sleeping problems		.54/.50			
I felt sad or blue		.85/.84			
I was not excited in doing things		.81/.77			
I was slow or had little energy		.72/.71			
The future seemed hopeless		.71/.74			
<i>Anger</i>					
I was easily annoyed and irritated			.61/.57		
I experienced outbursts of anger that I could not control			.83/.78		
I wanted to break or damage things			.77/.72		
I had a row with someone			.71/.70		
I yelled at somebody or threw things			.67/.70		
<i>Suicide</i>					
Have you ever seriously considered committing suicide?				.74/.67	
Have you ever told anyone that you were thinking about committing suicide?				.67/.68	
Have you ever made an attempt to commit suicide?				.72/.72	
Have you made an attempt to commit suicide during this school year?				.57/.63	
<i>Delinquency</i>					
Stole something that was worth, more than 5,000 Icelandic Kronur					.56/.75
Committed a burglary to steal					.67/.73
Vandalized					.89/.92
Used physical violence to steal					.53/.56

Note: All factor loadings are statistically significant; $p < .01$

model split by gender turned out to be better than the one for the full sample. Prior work by McDonald and Ho (2002) suggests that two of these indices, the Comparative-Fit-Index (CFI) and Root Mean Square Error of Approximation (RMSEA), along with the chi-square statistic, when considered together, will constitute appropriate measures for examining the fit of the theoretical model tested. Models are considered a good fit if the CFI is at least .90 and the RMSEA, a measure of lack of fit of the model to the population covariance matrix per degree of freedom for the model, is .05 or less. The fit statistics shown in Table 2 reveal that both the model for the whole population, as well as the model split by gender, fit our data well, although the second model, split by gender, seems to be better than the one for the full sample. The model split by gender, has a

CFI value of .90 and an RMSEA of .04, which, considered together, indicate a good fit.

Results

In total, 35.7% of girls and 17.8% of boys answered “yes” to one or more of the five questions asked about sexual abuse. As regards specific items, a total of 12.4% of girls and 6.4% of boys reported indecent exposure, 27.6% of girls and 9.6% of boys reported indecent touching of their body, excluding genitals, 16.8% of girls and 12.5% of boys reported touching of their genitals, 9.0% of girls and 3.8% of boys reported touching genitals of others and 8.2% of girls and 3.1% of boys reported to have been persuaded,

Table 2 Fit measures for the models

	Whole sample model	Model split by gender
Number of distinct sample moments	350	700
Number of distinct parameters to be estimated	91	182
Degrees of freedom	259	518
Chi-square	9,762	8,765
CFI baseline comparisons	.90	.90
RMSEA	.06	.04

pressed or forced to have intercourse. As regards the dependent variables, 29.6% girls and 21.7% boys said “yes” to one or more of the four questions on suicidal behavior and in total of 8.7% girls and 25.5% of boys responded “yes” to one or more of the four questions asked about delinquent behavior. Table 3 displays the descriptive

statistics, showing range, mean and standard deviations, for each of the latent variables used in the analysis.

Intercorrelations among the variables are presented in Table 4. The findings indicate that experiencing sexual abuse is positively related to suicidal behavior in both girls ($r = .27$) and boys ($r = .15$). Sexual abuse is also

Table 3 Descriptive statistics for latent constructs

Variables	N		Range	Mean		SD	
	Girls	Boys		Girls	Boys	Girls	Boys
<i>Parental education</i>	4,190	3,803	0–8	4.38	4.52	2.44	2.42
Mothers education			0–4	2.06	2.14	1.49	1.49
Fathers education			0–4	2.29	2.35	1.37	1.35
<i>Depressed mood</i>	4,551	4,296	0–24	6.84	4.80	5.89	4.91
How often during the last week							
I was sad or had little interest in doing things			0–3	1.35	1.20	1.02	.99
I felt lonely			0–3	.76	.55	.95	.84
I cried easily or wanted to cry			0–3	.97	.25	1.07	.61
I had sleeping problems			0–3	.84	.69	1.03	.94
I felt sad or blue			0–3	1.01	.61	1.00	.87
I was not excited in doing things			0–3	.76	.68	.92	.89
I was slow or had little energy			0–3	.68	.50	.90	.80
The future seemed hopeless			0–3	.49	.38	.84	.77
<i>Anger</i>	4,607	4,344	0–15	3.47	3.08	3.28	3.06
I was easily annoyed and irritated			0–3	1.48	1.18	.97	.94
I experienced outbursts of anger that I could not control			0–3	.51	.36	.83	.70
I wanted to break or damage things			0–3	.45	.62	.83	.92
I had a row with someone			0–3	.78	.67	.92	.85
I yelled at somebody or threw things			0–3	.25	.26	.63	.63
<i>Suicide</i>	4,478	4,066	0–4	.58	.40	1.03	.89
Have you ever seriously considered committing suicide?			0–1	.27	.19	.45	.39
Have you ever told anyone that you were thinking about committing suicide?			0–1	.16	.12	.37	.32
Have you ever made an attempt to commit suicide?			0–1	.10	.06	.30	.24
Have you made an attempt to commit suicide during this school year?			0–1	.04	.04	.20	.19
<i>Delinquency</i>	4,574	4,224	0–24	.18	.81	.86	2.19
Stole something that was worth, more than 5,000 Icelandic Kronur			0–6	.04	.19	.32	.73
Committed a burglary to steal			0–6	.01	.05	.16	.40
Vandalized			0–6	.02	.13	.22	.61
Used physical violence to steal			0–6	.11	.44	.46	1.02

N boys = 4,433

N girls = 4,652

Table 4 Correlations between all variables for both girls and boys

	Parental education Girls/boys	Family structure Girls/boys	Sexual abuse Girls/boys	Depressed mood Girls/boys	Anger Girls/boys	Suicide Girls/boys	Delinquency Girls/boys
Parental education	1.00/1.00						
Family structure	.04**/.09***	1.00/1.00					
Sexual abuse	-.04*/-.04*	-.09***/-.04*	1.00/1.00				
Depressed mood	-.03*/-.02n	-.11***/-.07***	.22***/.10***	1.00/1.00			
Anger	-.08***/-.06***	-.08***/-.05**	.19***/.15***	.57***/.48***	1.00/1.00		
Suicide	-.09***/-.06***	-.10***/-.08***	.27***/.15***	.44***/.37***	.34***/.27***	1.00/1.00	
Delinquency	-.04***/-.06***	-.04*/-.09***	.10***/.18***	.10***/.14***	.13***/.24***	.20***/.23***	1.00/1.00

* Significant at the .05 level (two-tailed)
 ** Significant at the .01 level (two-tailed)
 *** Significant at the .001 level (two-tailed)

positively related to delinquency for girls ($r = .10$) and boys ($r = .18$). These findings demonstrate a positive link between sexual abuse and emotional reactions. The correlation between sexual abuse and depressed mood is $r = .22$ for girls and $r = .10$ for boys, and the association between sexual abuse and anger is $r = .19$ for girls and $r = .15$ for boys.

The correlation between depressed mood and suicidal behavior was positive and significant for girls ($r = .44$) and for boys ($r = .37$). Similarly, the correlation between anger and suicidal behavior was positive and significant for both girls ($r = .34$) and boys ($r = .27$). The correlation between depressed mood and outwardly-directed delinquency was positive and significant for girls ($r = .10$) and for boys ($r = .14$). And the correlation between anger and outwardly directed delinquency was positive and significant for both girls ($r = .13$) and boys ($r = .24$).

Table 5 presents the standardized and unstandardized regression weights from the structural equation model with depressed mood and anger as mediating factors.

Our results confirm our first hypothesis that, while controlling for family structure, and parental education, being exposed to strain in the form of sexual abuse was positively related to both depressed mood and anger. Sexual abuse was a moderately strong direct and positive predictor of both depressed mood (girls, $\beta = .23, t > 1.96$; boys, $\beta = .11, t > 1.96$) and anger (girls, $\beta = .24, t > 1.96$; boys, $\beta = .16, t > 1.96$). Thus, experiencing sexual abuse appears to have had a significant impact on adolescents in terms of both anger and depressed mood.

Consistent with our second hypothesis, we also found that depressed mood, resulting from sexual abuse, was a stronger positive predictor of suicidal behavior than anger. Depressed mood had a strong, direct and positive impact on suicidal behavior for both girls and boys (girls, $\beta = .36, t > 1.96$; boys, $\beta = .35, t > 1.96$). However, anger associated with sexual abuse has a moderate positive impact on suicidal behavior (girls, $\beta = .15, t > 1.96$; boys, $\beta = .15,$

$t > 1.96$). The indirect effect of sexual abuse on suicidal behavior, through depressed mood and anger was positive and significant at the .05 level for both boys and girls. However, the indirect effect through depressed mood (girls, $\beta = .08, t > 1.96$; boys, $\beta = .04, t > 1.96$) was twice as strong as the effect of sexual abuse on suicidal behavior through anger (girls, $\beta = .04, t > 1.96$; boys, $\beta = .02, t > 1.96$).

These findings support our third hypothesis indicating that the anger resulting from sexual abuse is a stronger positive predictor of outwardly-directed forms of delinquent behavior than depressed mood. Anger that is associated with sexual abuse had a direct positive impact on delinquency, which was twice as strong for boys as girls (girls, $\beta = .08, t > 1.96$; boys, $\beta = .19, t > 1.96$). However, depressed mood, associated with sexual abuse, did not exert a significant effect on delinquency among adolescent girls and only a weak effect on delinquency among boys (girls, $\beta = \text{n.s.}, t > 1.96$; boys, $\beta = .05, t > 1.96$). The indirect effect of sexual abuse on delinquency through depressed mood was insignificant for girls and weak for boys (boys, $\beta = .01, t > 1.96$).

It is worth noting that our results underline the need to control for parental education and family structure, as both variables turned out to be predictors of sexual abuse as well as emotional reactions and behavior. The association between parental education and sexual abuse was negative and significant for girls ($\beta = -.07, t > 1.96$), while it was insignificant for boys. Parental education affects emotions among both boys and girls. Specifically, the link between parental education and anger was strong (girls, $\beta = -.12; t > 1.96$; boys, $\beta = -.10, t > 1.96$). The effects of parental education on the outcome variables are significant but otherwise weak for both genders.

The association of family structure with sexual abuse was negative and significant for both girls and boys. Hence, it is less likely that adolescents living with two biological parents than adolescents living in other family

Table 5 Standardized and unstandardized regression weights for the model with depressed mood and anger as mediating factors

	Standardized coefficients		Unstandardized coefficients		S.E.		C.R.	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
<i>Hypothesized relationships</i>								
Sexual abuse → Depressed mood	.23***	.11***	.081	.054	.006	.008	14.471	6.381
Sexual abuse → Anger	.24***	.16***	.077	.077	.005	.008	14.263	9.108
Sexual abuse → Suicidal behavior	.28***	.15***	.033	.022	.002	.003	16.712	8.375
Sexual abuse → Delinquency	.13***	.19***	.014	.090	.002	.008	7.409	10.936
Anger → Suicidal behavior	.15***	.15***	.054	.048	.006	.006	8.613	7.905
Depressed mood → Suicidal behavior	.36***	.35***	.118	.106	.006	.006	20.105	18.220
Anger → Delinquency	.08***	.19***	.026	.200	.006	.019	4.364	10.671
Depressed mood → Delinquency	-.02n	.05**	-.005	.049	.005	.016	-.888	2.943
<i>Control relationships</i>								
Parental education → Sexual abuse	-.07***	-.03n	-.144	-.037	.040	.024	-3.633	-1.526
Parental education → Depressed mood	-.07***	-.06*	-.051	-.031	.014	.012	-3.672	-2.578
Parental education → Anger	-.12***	-.10***	-.080	-.051	.014	.013	-5.780	-4.031
Parental education → Suicidal behavior	-.06**	-.06*	-.015	-.009	.005	.004	-3.189	-2.459
Parental education → Delinquency	-.05*	-.05*	-.011	-.025	.004	.012	-2.375	-2.141
Family structure → Sexual abuse	-.12***	-.04*	-.484	-.100	.060	.042	-8.018	-2.418
Family structure → Depressed mood	-.08***	-.07***	-.115	-.086	.021	.020	-5.372	-4.265
Family structure → Anger	-.05**	-.04*	-.059	-.046	.020	.020	-2.912	-2.340
Family structure → Suicidal behavior	-.03 n	-.04*	-.013	-.015	.007	.006	-1.821	-2.349
Family structure → Delinquency	.01n	-.06*	.003	-.069	.007	.020	.421	-3.524

C.R. stands for the critical ratio for regression weight, where regression weight estimate is divided by the estimate of its standard error (S.E.)

* Significant at the .05 level (two-tailed)

** Significant at the .01 level (two-tailed)

*** Significant at the .001 level (two-tailed)

arrangements have experienced sexual abuse. However, the link was weak among boys ($\beta = -.04$, $t > 1.96$), compared to that of girls ($\beta = -.12$, $t > 1.96$). The effect of family structure on emotions was significant for both boys and girls, but the effects on depressed mood (girls, $\beta = -.08$, $t > 1.96$; boys, $\beta = -.07$, $t > 1.96$) were stronger than they were for anger (girls, $\beta = -.05$, $t > 1.96$; boys, $\beta = -.04$, $t > 1.96$). The link between family structure and behaviors was not significant for girls and practically non-existent among boys. Among boys, the effects of family structure on suicidal behavior was $-.04$ and $-.06$ on delinquency.

To determine if girls and boys differed significantly with respect to any single parameter, we used AMOS to calculate a table of critical ratios of differences among all pairs of free parameters. The critical ratio is the difference between the parameters divided by the estimated standard error of the difference (Arbuckle and Wothke 1999). Similar to the t -statistic, the critical ratio statistic can be compared to a table of the standard normal distribution to test whether each pair of parameters listed in the table is equal. Looking at the hypothesized relationships, we see that the data partially support our fourth hypothesis. Being exposed to

sexual abuse had a significantly stronger positive effect on depressed mood among girls than it did among boys. Looking at Table 5, we can see that the unstandardized effects of sexual abuse on depressed mood were .08 for girls, while it was .05 for boys. No gender difference was revealed in the link between sexual abuse and anger.

Regarding the effects of emotions on suicidal behavior, we see that the association between depressed mood and suicidal behavior was similar for boys and girls; therefore, our fifth hypothesis was not supported. It is worth noting, however, that looking at the direct effects of sexual abuse on suicidal behavior, we find a significant difference between the genders. The unstandardized effects of sexual abuse on suicidal behavior were .03 among girls and .02 among boys.

The principal difference between girls and boys resides in the effects of anger on delinquency, which was much stronger for boys than for girls. The unstandardized effects of anger on delinquency were .03 among girls and .20 among boys. This finding supports our sixth hypothesis. Once again, looking at the direct effects of sexual abuse on delinquent behavior, we see an important difference between boys and girls, i.e., sexual abuse directly affected

delinquent behavior much more strongly among boys than among girls. The unstandardized effects of sexual abuse on delinquency were .01 among girls and .09 among boys.

Discussion

This study sought to extend previous work by Agnew on general strain theory by exploring the link between sexual abuse, suicidal behavior and outwardly-directed delinquency, which we conceptualized as being significantly mediated through the emotional reactions of depressed mood and anger. A number of important observations emerge from our analysis.

First, the findings support our first hypothesis and show that being exposed to strain in the form of sexual abuse is associated with feelings of both anger and depressed mood among adolescents. Hence, in line with prior research (Aneshensel et al. 1991), we found that being exposed to strain contributes not only to one but to both of the negative emotions measured. This finding underscores the need to study multiple emotional outcomes when considering the impact of strain on emotional reactions among adolescents. It also suggests that future research should include other negative emotions, such as fear and anxiety, as well as addressing whether different types of negative emotions are rooted in particular types of strain.

Second, the findings of this study also support our second and third hypotheses, i.e., that depressed mood, resulting from sexual abuse, is a stronger predictor of suicidal behavior than anger, while anger, resulting from sexual abuse, is a stronger predictor of outwardly-directed forms of delinquency than depressed mood. This is an important finding for general strain theory because it sheds new light on the suggestions put forth by Agnew in his recent book (2005) and reveals that particular emotions are more likely than others to be determinants of some types of behaviors. Prior findings have shown that anger and depressed mood are highly correlated emotions, indicating that they occur to a great extent concomitantly. This is consistent with the emphasis on comorbidity discussed in previous literature, i.e., the concurrence of internalizing and externalizing symptoms (Curran 1987; Gispert et al. 1987; Rutter 1989).

Third, studies have shown that while depressed mood and anger are overlapping phenomena, they are separate in their relations to behavioral outcomes (Sigfusdottir et al. 2004). Our study adds to the field's overall understanding of the implications of the interrelatedness between these phenomena. According to general strain theory, depressed mood, like anger, should increase the likelihood of crime (Agnew 2005). Depressed mood creates some pressure for action since it is an unpleasant emotion, although it may

not create as much pressure as anger. In contrast to prior studies showing that anger energizes the individual for actions, lowers inhibitions and increases outwardly-directed behavior, feelings of depressed mood increase the likelihood of inwardly-directed behavior. In fact, the effects of depressed mood on suicidal behavior are more than twice as strong as the effects of anger. Similarly, the mediating effects of sexual abuse on suicidal behavior are twice as strong through depressed mood as through anger. This means that depressed mood still exerts significant effects on outwardly-directed delinquency among boys, after controlling for the effects of anger, although these effects are very weak. In contrast, the effects of depressed mood on delinquency among girls were insignificant. In line with prior research, our study further established the importance of anger as a critical mediating variable in the relationship between strain and outwardly-directed delinquency (e.g., see Agnew 1993, 2005; Brezina 1998; Sigfusdottir et al. 2004). In general, our findings highlight the complex nature of the effects of strain on emotions and behavior and show that particular emotions are conducive to certain types of behavior. Together with prior research, our study also shows that anger is most relevant to outwardly-directed delinquent behavior, whereas depression turns out to be most relevant to inwardly-directed suicidal behavior.

With regard to our separate findings for boys and girls, we see that the main difference lies in the effect of sexual abuse on depressed mood, which is stronger for girls than for boys. Our findings are thus in accordance with studies showing that girls are more likely than boys to respond to sexual abuse with internalized symptoms (Feiring et al. 1999). The other principal difference that we hypothesized as existing between girls and boys lies in the association between emotions and outwardly-directed forms of delinquent behavior. In accordance with prior studies (Sigfusdottir et al. 2004), the effects of anger on delinquency were much stronger for boys than for girls. A significant gender difference was found in the direct effects of sexual abuse on suicidal behavior and delinquency, where the effects of sexual abuse on suicidal behavior were stronger for girls than for boys. On the contrary, the direct effects of sexual abuse on delinquency were much stronger for boys than for girls. In general, our findings on gender differences suggest that depressed mood, while suppressing the effects of anger and delinquent behavior, does not result in inwardly-directed forms of delinquency more so among girls than among boys. We see, however, that the depressed mood is much more likely to result in suicidal behavior than other forms of delinquency among both genders.

Some limitations of our study are worth noting. First, we used cross-sectional data for our analyses, which does not provide definitive causal evidence. Second, all of our

measures were self-report and some of the students may not have accurately reported their feelings or behaviors. However, there are two reasons why we are reasonably confident about the reliability of our data. First, our aim was not to establish rates or prevalence of sexual abuse, depressed mood, anger or suicidal behavior; instead we used the self-reported measures of sexual abuse, depressed mood and anger as ordinal correlates of suicidal behavior. Second, our sample size was very large—over 9,000 adolescents—which gives us confidence that the responses are much more reliable than if we had studied a smaller sample.

In conclusion, sexual abuse is associated with both suicidal behavior and delinquency among adolescents. Not only are the effects of sexual abuse mediated through emotional reactions, but we also found that having been exposed to strain in the form of sexual abuse was directly related to suicidal behavior and delinquency. Adolescents who have been exposed to sexual abuse were more likely to have engaged in suicidal behavior and delinquency, even when not suffering from feelings of depressed mood and anger. This finding underscores the importance for future research to include other emotional reactions when investigating the effects of sexual abuse. Agnew (2005) proposes that feelings of fear may be the result of anticipated strain that individuals feel powerless to prevent, thereby creating an urge to flee or hide. Sexual abuse towards adolescents creates a strain that is likely to invoke fear as well as feelings of powerlessness and hopelessness. Thus, as Agnew (2005) proposes, it is plausible that such fear would increase the likelihood of criminal behavior in the form of fleeing or hiding, such as running away, truancy, drug use or, as proposed here, attempting suicidal behavior.

References

- Agnew, R. (1985). A revised strain theory of delinquency. *Social Forces*, 64(1), 151–167.
- Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. *Criminology*, 30(1), 47–87.
- Agnew, R. (1993). Why do they do it? An examination of the intervening mechanisms between ‘social control’ variables and delinquency. *Journal of Research in Crime and Delinquency*, 30(3), 245–266.
- Agnew, R. (2001). Building on the foundation of general strain theory: Specifying the types of strain most likely to lead to crime and delinquency. *Journal of Research in Crime and Delinquency*, 38(4), 319–361.
- Agnew, R. (2005). *Pressured into crime: An overview of general strain theory*. Los Angeles.
- Aneshensel, C. S., Rutter, C. M., & Lachenbruch, P. A. (1991). Social structure, stress and mental health: Competing conceptual and analytic models. *American Sociological Review*, 56(2), 166–178.
- Ang, R. P., & Ooi, Y. P. (2004). Impact of gender and parents’ marital status on adolescents’ suicidal ideation. *International Journal of Social Psychiatry*, 50(4), 351–360.
- Arbuckle, J. L., & Wothke, W. (1999). *AMOS 4.0 user’s guide*. Chicago: Small-Waters Corporation.
- Baron, S. W. (2004). General strain, street youth and crime: A test of Agnew’s revised theory. *Criminology*, 42(2), 457–483.
- Berkowitz, L. (1986). *A survey of social psychology*. New York: Holt, Rinehart, and Winston.
- Beyers, J. M., & Loeber, R. (2003). Untangling developmental relations between depressed mood and delinquency in male adolescents. *Journal of Abnormal Child Psychology*, 31(3), 247–266.
- Bjarnason, T., & Thorlindsson, T. (1994). Manifest predictors of past suicide attempts in a population of Icelandic adolescents. *Suicide and Life-Threatening Behavior*, 24(4), 350–358.
- Brezina, T. (1998). Adolescent maltreatment and delinquency: The question of intervening processes. *Journal of Research in Crime and Delinquency*, 35(1), 71–99.
- Briere, J., & Elliott, D. M. (2003). Prevalence and psychological sequelae of self-reported childhood physical and sexual abuse in a general population sample of men and women. *Child Abuse & Neglect*, 27(10), 1205–1222.
- Broidy, L., & Agnew, R. (1997). Gender and crime: A general strain theory perspective. *Journal of Research in Crime and Delinquency*, 34(3), 275–306.
- Brown, J., Cohen, P., Johnson, J. G., & Smailes, E. M. (1999). Childhood abuse and neglect: Specificity of effects on adolescent and young adult depression and suicidality. *Journal of the American Academy of Child and Adolescent Psychiatry*, 38(12), 1490–1496.
- Browne, A., & Finkelhor, D. (1986). Impact of child sexual abuse: A review of the research. *Psychological Bulletin*, 99(1), 66–77.
- Caldwell, R. M., Wiebe, R. P., & Cleveland, H. H. (2006). The influence of future certainty and contextual factors on delinquent behavior and school adjustment among African American adolescents. *Journal of Youth and Adolescence*, 35(4), 591–602.
- Campbell, A. (1993). *Men, women, and aggression*. New York: Basic Books.
- Capowich, G. E., Mazerolle, P., & Piquero, A. (2001). General strain theory, situational anger, and social networks: An assessment of conditioning influences. *Journal of Criminal Justice*, 29(5), 445–461.
- Cohen, A. (1955). *Delinquent boys*. New York: Free Press.
- Curran, D. K. (1987). *Adolescent suicidal behavior*. Washington: Hemisphere.
- Cloward, R., & Ohlin, L. (1960). *Delinquency and opportunity*. New York: Free Press.
- Derogatis, L. R., Lipman, R. S., & Covi, L. (1973). SCL-90: An outpatient psychiatric rating scale—preliminary report. *Psychopharmacology Bulletin*, 9, 13–28.
- Derogatis, L. R., Lipman, R. S., Covi, L., & Rickels, K. (1971). Neurotic symptoms dimensions: As perceived by psychiatrists and patients of various social classes. *Archives of General Psychiatry*, 24(5), 454–464.
- Dilillo, D., Tremblay, G. C., & Peterson, L. (2000). Linking childhood sexual abuse and abusive parenting: The mediating role of maternal anger. *Child Abuse & Neglect*, 24(6), 767–779.
- Feiring, C., Taska, L., & Lewis, M. (1999). Age and gender differences in children’s and adolescents’ adaptation to sexual abuse. *Child Abuse & Neglect*, 23(2), 115–128.
- Finkelhor, D. (1993). Epidemiological factors in the clinical identification of child sexual abuse. *Child Abuse & Neglect*, 17(1), 67–70.
- Finkelhor, D., Hotaling, G., Lewis, I. A., & Smith, C. (1990). Sexual abuse in a national survey of adult men and women: Prevalence, characteristics and risk-factors. *Child Abuse & Neglect*, 14(1), 19–28.

- Garnefski, N., & Arends, E. (1998). Sexual abuse and adolescent maladjustment: differences between male and female victims. *Journal of Adolescence*, 21(1), 99–107.
- Gerbing, D. W., & Anderson, J. C. (1993). Monte Carlo evaluations of goodness-of-fit indices for structural equation models. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models*. Newbury Park: Sage.
- Gispert, M., Davis, M. S., Marsh, L., & Wheeler, K. (1987). Predictive factors in repeated suicide attempts by adolescents. *Hospital and Community Psychiatry*, 38(4), 390–393.
- Gore, S., Aseltine, R. H., & Colton, M. E. (1992). Social structure, life stress, and depressive symptoms in a high school-aged population. *Journal of Health and Social Behavior*, 33(2), 97–113.
- Gudjonsson, G. H., & Sigurdsson, J. F. (2007). Motivation for offending and personality. A study among young offenders on probation. *Personality and Individual Difference*, 42(7), 1243–1253.
- Hay, C. (2003). Family strain, gender, and delinquency. *Sociological Perspectives*, 46(1), 107–135.
- Heimer, K. (1997). Socioeconomic status, subcultural definitions, and violent delinquency. *Social Forces*, 75(3), 799–833.
- Hoffmann, J. P. (2006). Family structure, community context, and adolescent problem behaviors. *Journal of Youth and Adolescence*, 35(6), 867–880.
- Hüsler, G., Blakeney, R., & Werlen, E. (2005). Adolescent risk: The co-occurrence of illness, suicidality, and substance use. *Journal of Youth and Adolescence*, 34(6), 547–557.
- Jang, S. J., & Johnson, B. R. (2003). Strain, negative emotions, and deviant coping among African-Americans: A test of general strain theory. *Journal of Quantitative Criminology*, 19(1), 79–105.
- Kemper, T. D. (1978). *A social interactional theory of emotions*. New York: Wiley.
- Kendall-Tackett, K. A., Williams, L. M., & Finkelhor, D. (1993). Impact of sexual abuse on children: A review and synthesis of recent empirical studies. *Psychological Bulletin*, 113(1), 164–180.
- Kluegel, J. R., & Smith, E. R. (1986). *Beliefs about inequality*. New York: Aldine De Gruyter.
- Luster, T., & Small, S. A. (1997). Sexual abuse history and problems in adolescence: Exploring the effects of moderating variables. *Journal of Marriage and the Family*, 59(1), 131–142.
- Martin, G. (1996). Reported family dynamics, sexual abuse, and suicidal behaviors in community adolescents. *Archives of Suicide Research*, 2(3), 183–195.
- Martin, G., Bergen, H. A., Richardson, A. S., Roeger, L., & Allison, S. (2004). Sexual abuse and suicidality: Gender differences in a large community sample of adolescents. *Child Abuse & Neglect*, 28(5), 491–503.
- Maruyama, G. M. (1998). *Basics of structural equation modeling*. Beverly Hills: Sage.
- Mazerolle, P., & Piquero, A. (1998). Linking exposure to strain with anger: An investigation of deviant adaptations. *Journal of Criminal Justice*, 26(3), 195–211.
- McDonald, R. P., & Ho, M. H. R. (2002). Principles and practice in reporting structural equation analyses. *Psychological Methods*, 7(1), 64–82.
- Meadows, S. O., Brown, J. S., & Elder, G. H., Jr. (2006). Depressive symptoms, stress, and support: Gendered trajectories from adolescence to young adulthood. *Journal of Youth and Adolescence*, 35(1), 93–103.
- Merton, R. (1938). Social structure and anomie. *American Sociological Review*, 3, 672–682.
- Mossige, S. (2004). *The Baltic Sea regional study on adolescent's sexuality: A survey among young people*. Oslo: Norwegian Social Research.
- Piquero, N. L., & Sealock, M. D. (2004). Gender and general strain theory: A preliminary test of Brody and Agnew's gender/GST hypotheses. *Justice Quarterly*, 21(1), 125–158.
- Polusny, M. A., & Follette, V. M. (1995). Long-term correlates of child sexual abuse: Theory and review of the empirical literature. *Applied & Preventive Psychology*, 4(3), 143–166.
- Rehkopf, D. H., & Buka, S. L. (2006). The association between suicide and the socio-economic characteristics of geographical areas: A systematic review. *Psychological Medicine*, 36(2), 145–157.
- Rutter, M. (1989). Isle of Wight revisited: Twenty-five years of child psychiatric epidemiology. *Journal of the American Academic of Child and Adolescent Psychiatry*, 28(5), 633–653.
- Schraedley, P. K., Gotlib, I. H., & Hayward, C. (1999). Gender differences in correlates of depressive symptoms in adolescents. *Journal of Adolescent Health*, 25(2), 98–108.
- Seiffge-Krenke, I., & Stemmler, M. (2002). Factors contributing to gender differences in depressive symptoms: A test of three developmental models. *Journal of Youth and Adolescence*, 31(6), 405–417.
- Sigfusdottir, I. D., Farkas, G., & Silver, E. (2004). The role of depressed mood and anger in the relationship between family conflict and delinquent behavior. *Journal of Youth and Adolescence*, 33(6), 509–522.
- Spielberger, C. D. (1999). *STAXI-2. State-trait anger expression inventory-2*. P.O.Box 998, Odessa, FL33556: Psychological Assessment Resources, Inc.
- Statistics Iceland (Hagsstofa Íslands) (2001). *Statistical yearbook of Iceland 2001/Statistics of Iceland III*, 82. Reykjavik.
- Steffensmeier, D., & Allan, E. (1995). Criminal behavior: Gender and age. In J. F. Sheley (Ed.), *Criminology: A contemporary handbook* (pp. 83–113). Elmont: Wadsworth.
- Swanston, H. Y., Parkinson, P. N., O'Toole, B. I., Plunkett, A. M., Shrimpton, S., & Oates, R. K. (2003). Juvenile crime, aggression and delinquency after sexual abuse. A longitudinal study. *The British Journal of Criminology*, 43(4), 729–749.
- Turner, H. A., Finkelhor, D., & Ormrod, R. (2006). The effect of lifetime victimization on the mental health of children and adolescents. *Social Science & Medicine*, 62(1), 13–27.
- Ullman, S. E., & Filipas, H. H. (2005). Gender differences in social reactions to abuse disclosure, post-abuse coping, and PTSD of child sexual abuse survivors. *Child Abuse & Neglect*, 29(7), 767–782.
- Wellman, M. M. (1993). Child sexual abuse and gender differences: Attitudes and prevalence. *Child Abuse & Neglect*, 17(4), 539–547.
- Wichstrom, L., & Rossow, I. (2002). Explaining the gender difference in self-reported suicide attempts: A nationally representative study of Norwegian adolescents. *Suicide & Life-Threatening Behavior*, 32(2), 101–116.
- Wight, R. G., Botticello, A. L., & Aneshensel, C. S. (2006). Socioeconomic context, social support, and adolescent mental health: A multilevel investigation. *Journal of Youth and Adolescence*, 35(1), 115–126.

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