A Model of Girl’s Vulnerability to Commercial Sexual Exploitation in Prostitution

Joan A. Reid

University of South Florida

Author Note

Joan A. Reid, Department of Rehabilitation and Mental Health Counseling, University of South Florida.

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Correspondence concerning this article should be addressed to Joan A. Reid, Department of Rehabilitation and Mental Health Counseling, University of South Florida, Tampa, FL 33620. Email: jareid2@bcs.usf.edu
Abstract

Due to the hidden nature of the crime and the inaccessibility of its victims, the majority of previous research on sexually exploited girls entrapped in prostitution has been conducted without a theoretical framework or reliable methodology. Drawing from key propositions of Agnew’s general strain theory, this study utilized structural equation modeling to estimate a pathway into prostitution, examining the effect of caregiver strain, child maltreatment, and risk-inflating responses of maltreated minors. The pathway was tested with data from a longitudinal study of 174 African American girls followed into adulthood, many of whom had documented sexual abuse histories. Findings revealed that child maltreatment worsened with increased caregiver strain. Consequently, maltreated girls were more likely to have run away, initiated substance use at an earlier age, and reported higher levels of self-denigration; all of which impacted vulnerability to sexual exploitation in prostitution. Implications from the study are targeted at obstructing forward progress of girls along the analytically-identified pathway.

Keywords: child abuse, family strain, runaways, sex trafficking
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The commercial sexual exploitation or sex trafficking of minors in the United States is considered among the most hidden and harmful forms of child maltreatment (Estes & Weiner, 2005; Williams & Frederick, 2009). Minors used for prostitution in the illegal commercial sex industry have been labeled in a variety of ways, from child/juvenile/teen prostitute to child sex trafficking victim (Halter, 2010; Mitchell, Finkelhor, & Wolak, 2009). The Trafficking Victims Protection Act (TVPA, 2000) has defined all minors, including U.S. citizens, involved in commercial sex acts (e.g., prostitution, pornography) as victims of a severe form of trafficking. Therefore, the term chosen here to denote a minor victimized by commercial sexual exploitation is child sex trafficking victim and sex traffickers refers to those profiting by exploiting children.

The majority of previous research on victimization in child sex trafficking has employed a risk factor approach when investigating the origins of the problem. Common risk factors have been gathered, primarily through extensive interviewing of domestic or international victims. The most frequently noted individual risk markers include female gender, history of abuse or sexual victimization, being a runaway or thrownaway youth, gang association, drug dependency, and caregiver dysfunction such as domestic violence, substance abuse, and mental illness (for reviews, see Clawson, Dutch, Solomon, & Grace, 2009; Estes & Wiener, 2005). Community conditions that inflate minors’ risk for entrapment into prostitution include poverty, residing in an urban environment characterized by high crime and elevated levels of police corruption, the existence of an adult prostitution market, and the presence of large numbers of transient males, e.g., military personnel, truckers, conventioneers (Clawson et al., 2009; Estes & Weiner, 2005).

Research has not yet established how these risks for victimization in sex trafficking develop or combine to create heightened vulnerability in certain minors (Williams & Frederick,
2009). Few theoretical explanations of juvenile victimization in sex trafficking have been developed or tested, and the majority of studies that have investigated causes and correlates of victimization in sex trafficking have not utilized valid sampling techniques or reliable methodology (Goździak & Bump, 2008). The purpose of the current study is to design and assess a probable explanation of the processes inducing entrapment in child sex trafficking, specifically focusing on prostituted girls. This population was chosen because girls face higher risk for entrapment in sex trafficking than boys (Clawson et al., 2009), and prostituted minors are the most marginalized type of child sex trafficking victim (Williams & Frederick, 2009).

**Theoretical Framework of General Strain Theory**

The use of a risk factor paradigm to explain victimization in child sex trafficking may prove ineffective at illuminating generative processes as it is limited to highlighting risk markers, which may or may not be determinant factors (Farrington, 2000; Wikström, 2008). In order to advance research, Wikström (2008) recommends that researchers “theoretically, carry out more advanced analytical work with the aim of identifying potential causes (causal interactions) and credible causal mechanisms” (p. 132). Clarifying the contributory mechanisms that drive repeated and escalating victimization of certain girls may demystify the processes by which many become entrapped in prostitution. As a history of multiple childhood adversities has been frequently documented in child sex trafficking victims (Albanese, 2007; Clawson et al., 2009; Estes & Wiener, 2005), a theoretical framework articulating cogent explanations of the cumulative effects of harmful conditions or events provided the foundation of this study.

Agnew’s (1992) general strain theory (GST) is a socio-psychological theory that focuses on the pressures that push a person toward involvement in crime or delinquency. Life strains by causing and interacting with negative emotions are predicted to result in dysfunctional coping
(Agnew, 1992, 2001, 2006). Although GST began as a theory of delinquency, explaining harmful outcomes such as escalating victimization generated by the damaging effects of strain is not beyond the scope of the theory. Agnew (2006) predicted a path from childhood abuse to victimization, noting that persons emotionally distressed and adversely conditioned by childhood strain “often select themselves into environments where they are treated badly” (p. 21). Moreover, many have argued that theories useful for explaining crime and criminality should also be effective at explaining victims and victimization (Lauritsen & Laub, 2007).

Concerning the origins of child maltreatment that may predispose a child to experiencing a repeated and escalating victimization, GST postulates that strain is the mechanism that triggers certain caregivers to neglect or abuse their children (Agnew, 1992; Agnew, Rebellon, & Thaxton, 2000). Confirming this proposition, caregivers have been found to be abusive or neglectful due to physical or mental illness, drug or alcohol abuse, incarceration, psychiatric disorders, domestic violence, social isolation, and divorce or separation of spouses (DiLauro, 2004; Ford, Chapman, Mack, & Pearson, 2006; Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008; Turner, Finkelhor & Ormrod, 2007; Walsh, MacMillan, & Jamieson, 2002).

GST originally referred to strain as “relationships in which others are not treating the individual as he or she would like to be treated” (Agnew, 1992, p. 48), an apt definition of child maltreatment. Child maltreatment has been found to contribute to a wide-range of impairments, including involvement in criminal environments (for review, see Arata, Langhinrichsen-Rohling, Bowers, & O’Brien, 2007). Behavioral scientists have proposed that maltreated children may endure a series of abusive relationships as they mature due to the formation in childhood of a dysfunctional template of relationship functioning (Bowlby, 1980; Fraley, 2002). Others have proposed that child maltreatment generates repeat victimization due to the traumatic impact,
prompting future and possibly more severe types of victimization (Finkelhor, Ormrod, & Turner, 2007; Macmillan, 2001).

Child maltreatment is considered a strain that is likely to be perceived as unjust and high in magnitude (Agnew, 2001). The resulting disappointment and frustration is theorized to lower inhibitions and prompt behavioral responses, as strain triggers an inherent motivation to escape. Children and adolescents generally lack the functional knowledge, psychological maturity, or resources available to most adults in similar stressful or abusive circumstances (Romer, 2010). This natural aversion to pain or desire to escape strain, acting in collusion with the naïveté of youth, inflates the likelihood that children and adolescents will choose risky escape routes (Agnew 2001; Hanna, 2002; Steinberg, 2010; Romer, 2010). As shown by research, abused girls may run away (for review, see Baron, 2003) or select unreliable rescuers such as traffickers masquerading as boyfriends (Albanese, 2007; Hanna, 2002; Estes & Wiener, 2005). Runaway girls, lacking legitimate employment opportunities or money to provide for basic needs, are highly vulnerable to exploitation (Miller & Mullins, 2009; Wilson & Widom, 2010). Rather than running away, some children may use substances with psychotropic properties to create a temporary illusion of escape (Bender, 2010; Harrison, Fulkerson, & Beebe, 1997).

These two risk-inflating responses to the strain of child maltreatment, running away and substance use, are predicted to result in heightened vulnerability to entrapment in child sex trafficking. Traffickers often present themselves as caring and strong boyfriends who promise to rescue minors from abuse or trouble (Albanese, 2007; Hanna, 2002). Runaway and drug-dependent minors can be easily seduced by fraudulent promises of love, safety, and affection; becoming the unwitting prey of sex traffickers (Hanna, 2002; Saewyc & Edinburgh, 2009).
GST highlights the role of negative emotion in mediating the relationship between stressful events and dysfunctional coping. Broidy and Agnew (1997) hypothesized that girls typically respond to strain with self-denigratory emotion, namely depression, guilt, and shame. Similarly, Finkelhor and Browne (1985) used the term stigmatization to describe a negative self-identity typified by feelings of shame and worthlessness that may develop due to child sexual abuse. Consequently, stigmatization is theorized to result in substance abuse, risky sexual behavior, and repeat victimization. In regards to sexual exploitation in prostitution, abused girls who run away have been found to be at greater risk than girls who run away without abuse histories (Saewyc & Edinburgh, 2009; Tyler & Johnson, 2006). As noted in research on sexual difficulties and revictimization following child sexual abuse, perhaps shame or self-denigration is the mechanism facilitating abused minors greater vulnerability to sexual exploitation (Arata, 2000, 2002; Classen, Palesh, & Aggarwal, 2005; Filipas & Ullman, 2006; Feiring, Simon, & Cleland, 2009; Messman-Moore, Ward, & Brown, 2009; Whiffen & MacIntosh, 2005).

In summary, GST provides an explanation of the generative factors, notably caregiver problems and adversity, from which a familial environment characterized by child maltreatment is most likely to originate (Agnew et al., 2000). In addition, GST explicates the connection between child maltreatment and the resulting risk-inflating behavioral escape responses, including the critical role of negative emotion such as self-denigration or shame.

**Current Study**

Building upon the previously documented risk factors of victims of child sex trafficking and drawing from the theoretical components of GST, the current study has marked out a pathway by which a minor may become a victim of child sex trafficking in prostitution. The pathway is built upon four major propositions. 1. Caregiver strain is expected to produce a
detrimental familial context increasing the likelihood of child maltreatment. 2. Next, in response to the strain of child maltreatment, it is hypothesized that maltreated girls are more likely to follow risk-inflating pathways of escape. Victimized girls may run away to escape maltreatment or begin to use drugs or alcohol to temporarily escape abuse and its effects. 3. Consequently, these risk-inflating escape responses of abused girls are predicted to increase their vulnerability to entrapment in prostitution. 4. Lastly, self-denigration is theorized to result from girls’ experiences of child maltreatment and to fully or partially mediate the link between risk-inflating behavioral responses (e.g., running away) and exploitation in prostitution.

Method

Study Participants and Data Collection Procedures

Due to the hidden nature of child sex trafficking, available data on this population are severely lacking (Goździak & Bump, 2008). However, previously collected data from a longitudinal study investigating the effects of childhood sexual abuse were available to assess the theorized pathway. McCahill, Meyer, and Fischman (1979) collected the original data between 1973 and 1975 as a part of a larger study on the effects of sexual assault. All 206 girls included in the original sample were brought to a particular municipal hospital where they underwent forensic examinations and received medical treatment due to being sexually abused.

During follow-up interviews in 1996-1997, the original sample was matched with a set of comparable females who received medical treatment at the same hospital for a reason other than sexual abuse. By searching the pediatric emergency room records of the same municipal hospital, matches were made based on race, age, and date of hospital visit (Siegel & Williams, 2001a; 2001b). Data from the follow-up interviews conducted in 1996-1997 were analyzed in this study (for further information on data collection, see Siegel & Williams, 2001a).
The ethnic diversity of the full sample of females used in these analyses consists of 89% African American, 7% Caucasian, 2% Hispanic, 1% Native American, and 2% described their ethnicity as biracial. The average age of the participants at the time of their hospital visit in 1973-1975 was 8.4 years old. During the interviews in 1996-1997, the average age of the participants was 31.6 years old. The average household income of the sample, including both the original and matched participants, was categorized as lower income (Siegel & Williams, 2001a).

**Measures**

**Caregiver strain.** The caregiver strain latent variable was specified from observed indicators based on responses to four questions, asking each participant for information regarding her biological mother (or the person that the participant considered her mother figure while a youth): (a) Was there ever a time while you were growing up when she drank heavily or had a drinking problem? (b) Did she ever have a problem using drugs while you were growing up? (c) While you were growing up, did she ever have any serious emotional or mental problems such as being depressed a lot, or having an uncontrollable temper, or being very fearful of things such as being afraid to go out or anything else? (d) Did you ever witness your parents (or couple, living with you, who were parents to you) hit or throw things at one another? No was coded “0” and yes was coded “1.”

**Child maltreatment.** The child maltreatment latent variable was specified from seven observed indicators child neglect or abuse. These indicators were based on participants’ responses to interview questions regarding her experience of child neglect, physical abuse, and sexual abuse including whether: (a) her parents ever had to leave her home alone, even when they thought an adult should be there; (b) her parents were unable to make sure she got the food she needed; (c) her parents were not able to make sure she got to a doctor or hospital when she...
needed to; (d) her parents were so drunk or high they had a problem taking care of her; (e) her parents were so caught up with their own problems that they were unable to show or tell her that they loved her; (f) punishments by her parents caused physical injury which required medical attention; and (g) child sexual abuse incidents occurred that involved genital contact (including fondling), force, or sexual contact with someone five years older than the respondent when she was younger than 13 (Siegel & Williams, 2003). No was coded “0” and yes was coded “1.”

Initial age of drug or alcohol use. Participants reported the age they first used drugs and the age they first used alcohol. As both the use of drugs and alcohol have been found to increase vulnerability to sexual exploitation or victimization (Estes & Weiner, 2005; Messman-Moore et al., 2009), the initial age of alcohol use and the initial age of drug use were pooled into one variable. The initial age of drug or alcohol use was recorded as the youngest age that had been reported by participants on either of the two original measures.

Running away. The indicator for running away was dichotomous with study participants reporting whether they ran away before the age of 18. No was coded “0” and yes was coded “1.”

Self-denigration. Siegel and Williams (2001a) constructed a scale to measure self-denigratory sexual beliefs and behaviors based on items from the Jehu (1988) Belief Inventory. Full or partial versions of the Belief Inventory have been regularly used as research instruments to measure self-denigration resultant of sexual abuse (for review, see Reid & Sullivan, 2009). During the interview process, participants responded to the following items: (a) in your opinion, no man would care for you without a sexual relationship; (b) in your opinion, only bad, worthless guys would be interested in you; (c) you use sex to get something you want or need; (d) you find yourself in awkward sexual situations; (e) you get into trouble because of your sexual behavior;
(f) you control others through the use of sex. Responses were combined to create a scale with values ranging from 0 to 6. Cronbach’s alpha for this scale was .79 (Siegel & Williams, 2001a).

**Prostituted as a minor.** The outcome variable was dichotomous with participants reporting whether they had engaged in prostitution or “exchanged sex for money or drugs” before the age of 18. No was coded “0” and yes was coded “1.”

**Analytic Strategy**

Structural equation modeling (SEM) using the Mplus program assessed the hypothesized pathway (Muthén & Muthén, 1998-2007). SEM functions similarly to multiple regression but uniquely allows for the modeling of associations between observed and latent variables and also provides an assessment of a system of equations (Kline, 2005). As is typical with SEM, two steps were included in the analytic process: (a) the measurement model specifying the latent variables was tested independently, and (b) the proposed SEM was tested. In the first step, confirmatory factor analysis (CFA) was used to estimate the measurement model and paths, specifying the structure of each of the latent variables. The findings of good model fit, along with strong and significant loadings of the manifest indicators on their respective latent variables, were used to determine the quality of the measurement model (Kline, 2005). Next, the structural equation model was assessed to determine whether the theorized model adequately projected the observed patterns in the data (Kline, 2005).

A collection of tests was used to evaluate various aspects of model fit of both the measurement and structural models. A non-significant chi-square suggests that the proposed model fits the data adequately. Other indicators assessing model fit were also used, including: (a) normed chi-square (NC) of two or less; (b) Comparative Fit Index (CFI) of .95 or higher; (c) Tucker-Lewis Index (TLI) of .95 or higher; (d) Root Mean Square of Approximation (RMSEA)
of .06 or less; and (e) Weighted Root Mean Square Residual (WRMR) of .90 or less (Hu & Bentler, 1999; Kline, 2005). With binary outcomes, slightly more stringent guidelines of CFI of .96 or higher and RMSEA of .05 or less have been found to indicate good model fit (Yu, 2002).

Finally, the key proposed structural paths, both direct and indirect, were assessed. Standardized linear regression coefficients were used to report the coefficients for the key structural paths for continuous observed indicators and latent variables. The estimate for dichotomous variables took the form of a conditional probability based on the value(s) of predictor variables (Liao, 1994). Probit coefficients were reported for those relationships.

As the study models included observed indicators that were categorical, the weighted least squares mean and variance adjusted (WLSMV) estimator available in the Mplus program (Muthén & Muthén, 1998-2007) was utilized because of its potential to fit models containing such variables (i.e., noncontinuously distributed measures). In simulation studies the WLSMV estimator has been shown to perform well, producing accurate test statistics, parameter estimates, and standard errors that are much less vulnerable to the effects of increasing model complexity and decreasing sample size in comparison to other methods of estimation (Brown, 2006).

Unpublished simulation studies conducted by Muthén indicated that when using the WLSMV estimator, sample sizes of 150 to 200 were sufficient for medium sized models, i.e., models with 10 to 15 indicators (cited in Brown, 2006). Therefore, the WLSMV estimator was considered suitable for this study based on the study sample size of 174 and the current study’s assessment of medium sized models incorporating up to 15 indicators.

To evaluate the validity of the final study hypothesis regarding the origins and mediating role of self-denigration, a supplementary structural model including that measure was analyzed. This supplementary model allowed the assessment of whether the conditions of mediation were
met, permitting the evaluation of whether self-denigration was fully or partially mediating the effect of running away and earlier use of drugs and alcohol on vulnerability to being prostituted as a minor. According to Holmbeck (1997), the necessary conditions for detecting a mediating effect of self-denigration in this study are that: (a) running away and/or initial age of drug or alcohol use must be significantly related to being prostituted as a minor; (b) running away and/or initial age of drug or alcohol use must be significantly related to self-denigration; (c) self-denigration must be significantly related to being prostituted as a minor, while controlling for running away and initial age of drug or alcohol use; and (d) the impact of running away and/or initial age of drug or alcohol use must decrease after controlling for self-denigration.

Results

Preliminary Analyses

Descriptive statistics of the observed variables included in the study are summarized in Table 1. Sixty-six percent of the sample reported child sexual abuse. Forty percent of the participants reported that they ran away from home before they reached 18 years of age. The average reported initial age of drug or alcohol use was 14.3 years old and the most common initial age was 16 years old. The range of ages was from 4 years old to 26 years old, with 25% reporting that they began using drugs or alcohol by the age of 13, 50% by the age of 14, and 75% by the age of 16. The average level of self-denigration was 1.16 out of a possible score of 6. Fifty-six percent of the participants reported no self-denigration, 31% reported low levels (scored 1-3), and 13% reported high levels of self-denigration (scored from 4-6).

Examining the bivariate associations, the indicators of caregiver strain were significantly related to various indicators of child maltreatment (see Table 1). The indicators of child maltreatment were negatively related to the initial age of drug or alcohol use and positively
related to running away. Self-denigration was significantly related to eight of the variables, including indicators of child maltreatment, running away, and initial age of drug or alcohol use. Being prostituted as a minor was significantly associated with seven variables in the model, including running away and initial age of drug or alcohol use. In summary, the collection of findings from the preliminary analyses provided justification for further multivariate analyses.

**Multivariate Analyses**

As shown in Figure 1, the measurement model evidenced adequate fit to the data. The Chi-square was non-significant, $\chi^2(24) = 30.85, p = .16$. All of the other indices demonstrated good fit (NC = 1.28; CFI = .98; TLI = .98; RMSEA = .04; WRMR = .77). The loadings of the indicators were statistically significant and strong, ranging from .48 to .91. These results provided a reasonable foundation for testing the structural model.

As shown in Figure 2, the primary structural equation model evidenced adequate fit to the data. The Chi-square was non-significant, $\chi^2(36) = 44.61, p = .15$. All of the other indices demonstrated good fit, meeting the most stringent guidelines (NC = 1.24; CFI = .98; TLI = .98; RMSEA = .04; WRMR = .79). Figure 2 contains the proportion of variance explained for the endogenous variables: child maltreatment, $R^2 = .59$; running away, $R^2 = .41$; initial age of drug or alcohol use, $R^2 = .21$; and being prostituted as a minor, $R^2 = .30$.

Next, the structural paths linking key latent and observed variables relevant to the study hypotheses were examined to assess the proposed relationships. Caregiver strain was positively related to child maltreatment with a large direct effect size ($std.\ coefficient = .77, p < .05$). The indirect effect of caregiver strain on being prostituted as a minor as mediated by maltreatment, running away, and initial age of drug or alcohol use revealed a significant and positive
relationship with a moderate effect size (\( std. \ coefficient = .29, p < .05 \)). Child maltreatment was positively related to running away with a large effect size (\( std. \ coefficient = .64, p < .01 \)) and negatively related to age of initial drug or alcohol use with a moderate effect size (\( std. \ coefficient = -.46, p < .01 \)). The indirect effect of child maltreatment on being prostituted as a minor as mediated by running away and age of initial drug or alcohol use revealed a significant, positive relationship with a moderate effect size (\( std. \ coefficient = .38, p < .05 \)). Running away had a significant and positive direct relationship with being prostituted as a minor with a moderate effect size (\( std. \ coefficient = .40, p < .05 \)). Age of initial drug or alcohol use had a negative relationship with being prostituted as a minor (\( std. \ coefficient = -.29 \)), with a critical value slightly lower than the predetermined significance level for the analysis (\( z = 1.85, p = .06 \)). In summary, the structural paths connecting the key latent and observed variables supported the study hypotheses, with only one proposed path coefficient narrowly failing to achieve the predetermined significance value for a two-tailed hypothesis test.

As the effect of the initial age of drug or alcohol use on vulnerability to being prostituted as a minor had not reach the predetermined level for statistical significance, further analyses were conducted to determine if the combining of the two variables, age of initial drug use and age of initial alcohol use (see Measures), had influenced the effect size of the path coefficient and the statistical significance. Structural equation models were assessed with the individual indicators, age of initial drug use and age of initial alcohol use, entered separately. The path coefficients of both of the individual measures (rather than the combined measure) and being prostituted as a minor were stronger and statistically significant (initial age of alcohol use, \( std. \ coefficient = -.37, z = 2.35, p < .05 \); initial age of drug use, \( std. \ coefficient = -.32, z = 2.07, p < .05 \)) in comparison to coefficient of the combined measure (\( std. \ coefficient = -.28, z = 1.85, p = .06 \)).
The final step in the analysis included the exploratory examination of the origins and effects of self-denigration. Displayed in Figure 2, the structural model including the self-denigration measure also evidenced adequate fit to the data with a non-significant Chi-square, $\chi^2(39) = 48.94, p = .13$. The other indices also demonstrated good model fit (NC = 1.25; CFI = .97; TLI = .98; RMSEA = .04; WRMR = .80).

The structural paths linking key latent and observed variables relevant to the study hypotheses featuring self-denigration were examined to assess the proposed relationships (see Figure 2). Child maltreatment was positively related to self-denigration with a moderate effect size ($std. \ coefficient = .48, p < .05$). The associations of child maltreatment with running away ($std. \ coefficient = .66, p < .01$) and initial age of drug or alcohol use ($std. \ coefficient = -.46, p < .01$) were minimally changed. Self-denigration had a significant and positive direct relationship to being prostituted as a minor with a moderate effect size ($std. \ coefficient = .36, p < .05$). In this supplementary model including self-denigration, running away was no longer found to be significantly related to being prostituted as a minor with a notable reduction in effect size ($std. \ coefficient = .23$). Also, the effect size of the association between age of initial drug or alcohol use and being prostituted as a minor slightly decreased ($std. \ coefficient = -.22$).

**Discussion**

The suitability of the theorized pathway for explaining vulnerability to being prostituted as a minor was substantiated and the findings supported the key propositions of this study. Beginning with the effects of caregiver strain on child maltreatment, this study sought to answer the question of whether the level of strain experienced by a child’s caregiver impacts the likelihood of the occurrence of child maltreatment. The study results indicated that the girls with strained mothers were more likely to have been maltreated than the girls whose mothers
experienced less strain. This association of caregiver strain with child maltreatment corresponds to findings by previous studies that have reported that caregivers are often abusive or neglectful due to mental illness, drug or alcohol abuse, domestic violence, or other types of strain or adversity (Ford et al., 2006; Herrenkohl et al., 2008; Turner et al., 2007; Walsh et al., 2002).

Caregiver strain was also shown to have a modest, indirect effect on vulnerability to being prostituted as a minor. This finding of a moderate indirect relationship between caregiver strain and being prostituted as a minor provides support for the prior research that has noted family dysfunction as a risk marker inflating vulnerability to victimization in child sex trafficking in prostitution (Clawson et al., 2009; Estes & Weiner, 2005). In addition, this finding regarding the indirect effect of caregiver strain on later victimization provides evidence of a transgenerational effect of strain, with strain being transferred from mother to daughter. The impact of caregiver strain on girls’ further involvement in criminal events would seem to be mediated by the experience of child maltreatment and its lingering, long-term liability (Agnew et al., 2000; Macmillan, 2001). The detection of a persisting effect of child maltreatment on involvement in further abuse and exploitation may be indicative of conceptualizations previously proffered by theorists and researchers that maltreated children are likely to endure further victimization as they mature (Bowlby, 1980; Finkelhor et al., 2007; Fraley, 2002).

Subsequently, maltreated girls were more likely to have run away and initiated drug or alcohol use at an earlier age than girls who were not abused. The impact of child maltreatment on the likelihood of these two behavioral responses or escape mechanisms supported the study hypothesis that abused girls may attempt to escape the strain of maltreatment through various behavioral responses. The identified effect of maltreatment on running away corresponds to previous research that has documented that minors commonly run away to escape abusive
environments (for review, see Baron, 2003). Furthermore, the finding that maltreated children initiated drug or alcohol use at an earlier age supports prior studies regarding the use of substances by maltreated children to cope with abuse (Bender, 2010; Harrison et al., 1997).

Concerning the prediction that risk-inflating responses of abused minors increase their vulnerability to being prostituted, running away was found to increase the likelihood of entrapment in prostitution as a minor. This finding supports previous reports asserting that runaways are at heightened risk for commercial sexual exploitation. The association noted between child maltreatment and being prostituted as a minor, facilitated by running away, supports prior research that has shown running away to be both a result of maltreatment and a predictor of future involvement in criminal environments, including child sex trafficking (Bender, 2010; Estes & Weiner, 2005; Miller & Mullins, 2009).

The findings regarding the effect of an earlier initiation of drug or alcohol use were somewhat equivocal. The inverse relationship between initial age of drug or alcohol use and the likelihood of victimization in prostitution was present as predicted. However, the pathway coefficient between initial age of drug or alcohol use and being prostituted as a minor did not reach statistical significance at the level that had been predetermined for the study. The association found between the two variables was narrowly non-significant. It has been argued, “Statistical significance tells us very little (if anything) about the practical significance or relative impact of the effect size and should not be used as a stand-alone measure” (Valentine & Cooper, 2003, p. 1). As the path coefficients were statistically significant when the individual measures reporting the initial age of alcohol use and the initial age of drug use were entered separately into the model (see Results), it would seem reasonable to conclude from this
collection of findings that an earlier initiation of drug or alcohol use does increase vulnerability to being prostituted as a minor.

The results of the supplementary model incorporating self-denigration supported the hypothesis that self-denigration was more likely to be experienced by girls who had been maltreated than by girls who had not been maltreated. This association of child maltreatment with self-denigration validates the proposition by Broidy and Agnew (1997) that girls may respond to strain with self-denigratory emotion. Also, self-denigration was found to have an impact on likelihood of being prostituted as a minor, validating previous research regarding effect of shame on sexual revictimization (for review, see Classen et al., 2005).

The four conditions necessary for identifying a mediating effect (Holmbeck, 1997) of self-denigration on the association between the risk-inflating behavioral responses and further victimization in prostitution were met. Running away and initial age of drug or alcohol use were significantly related to being prostituted, and they were also significantly related to self-denigration (see Table 1 and Figure 2). Self-denigration was significantly related to being prostituted, while controlling for running away and initial age of drug or alcohol use (see Figure 2). Lastly, the magnitude of the effects of both running away and initial age of drug and alcohol use on the likelihood of being prostituted as a minor both diminished when controlling for self-denigration (see Figure 2). Therefore, self-denigration may be generating vulnerability to sexual exploitation for those minors who runaway or begin using substances at an earlier age.

Limitations of the Study

Although the availability of data for testing the theorized pathway was advantageous, it also produced several limitations. The data were collected from African American females living in the United States who took part in a longitudinal study on the effects of child sexual abuse.
Accordingly, the findings of this study can only be applied to girls who are sexually exploited in the United States, to the exclusion of international, adult, or boy victims of sex trafficking. Also, the sample lacked cultural diversity, limiting its generalizability to other races and ethnicities. However, minority girls, from low-income families, living in an urban neighborhood possessed key documented risk markers for exploitation in prostitution, so the availability of such a sample to assess the theorized pathway was also considered to be methodologically beneficial.

Despite the careful selection and assessment of the indicators for the latent variables and the observed indicators, it is not possible to guarantee that these measures fully captured the variables of interest. For example, the primary variable of interest in this study, commercial sexual exploitation of minors in prostitution, was not the focal point of the original research for which these data were collected. As a result, information was not collected concerning whether a need to survive drew a girl into prostitution or if she was entrapped by a trafficker. Commercial sexual exploitation of children is defined by the TVPA of 2000 as the exchange of anything of value for the sex act of a minor, so what has been commonly labeled survival sex or trading sex is defined as commercial sexual exploitation and such exploitation has been found to be highly detrimental (Albanese, 2007; Estes & Weiner, 2005; Inciardi, 1993). Therefore, identifying a pathway into commercial sexual exploitation was considered to be beneficial regardless of whether payment in money or in drugs occurred, or if traffickers profited in each and every case.

Further limitations arose from the original data collection procedures. Although the child sexual abuse measure was initially collected prospectively, other measures included in the study were collected from the participants based on their recollections of childhood during follow-up interviews. Even though the original data were prudently collected, retrospectively collected data are not considered as reliable as data collected at the time of its occurrence (Butz, 1981).
A limitation of structural equation modeling is that alternative models may be specified that adequately fit the patterns in the data (Kline, 2005). For example, self-denigration could have been specified as a result (or correlate) of being prostituted rather than as a predictor. However, as research has found shame to be a long-lasting consequence of child maltreatment and a predictor of sexual revictimization (for review, see Classen et al., 2005), self-denigration was specified as a consequence of child maltreatment and a predictor of being prostituted.

Contributions of the Study

As previously mentioned, risk markers of victimization in child sex trafficking had been documented, however prior research on the topic had not yet established how these risks develop or combine to create heightened vulnerability. For example, caregiver dysfunction or adversity and child maltreatment had been commonly noted as risk markers in child sex trafficking victims (Clawson et al., 2009; Estes & Wiener, 2005), yet an understanding of how these risks combine to create vulnerability to sexual exploitation had not been empirically explored or clarified. Also, the use of structural equation models, rather than single equation models, allowed for extended specification of the theorized mechanisms. For example, running away was found to be both a consequence and predictor of sexual victimization. This observation that running away functions as a conduit of revictimization validates findings by previous researchers on runaways that have shown that abused girls who run away are more likely to be sexually exploited than those who run away but have not been previously abused (Tyler & Johnson, 2006).

The study findings compellingly substantiated the key propositions of general strain theory, effectively adapting and testing the theory as an explanation of sexual exploitation. As was implicitly proposed by Agnew et al. (2000) in a discussion on the effects of caregiver strain on children, this study provided convincing evidence of the transference of strain from caregiver
to child. The transgenerational transmission of strain provides validation for general strain theory and strong evidence of the long-lasting and potent influence of strain on families and children.

**Implications for Social Service Providers**

Along the analytically-identified pathway, there seem to exist critical junctures primed for either protective intervention or elevated endangerment. Based on the findings regarding the effect of caregiver strain, the escalation of child victimization identified by the pathway may be prevented by the timely provision of necessary services to adversely affected caregivers such as parenting classes, substance abuse treatment, mental health therapy or medication, or assistance to victims of domestic violence.

Family counseling for maltreated minors seems to be critical, based on the finding indicating that caregiver strain increases vulnerability to further endangerment and victimization. In light of the findings regarding the impact of self-denigration, treatment for such minors also may need to include strategies centered on reprocessing cognitions of not being deserving of healthy relationships and shaping new beliefs of worthiness in relation to others. Maltreated minors may also benefit from understanding how the effects of child abuse (e.g., feelings of shame) may place them at an elevated risk for revictimization or exploitation. To facilitate such treatment, the development of training materials for therapists and child advocates is needed to assist such professionals with resolving these vulnerabilities in abused or neglected minors.

This study has validated previous research by indicating that runaways face elevated vulnerability to sexual exploitation (Clawson et al., 2009; Estes & Wiener, 2005). Runaway girls have few options for obtaining shelter or other basic necessities, which opens them up to exploitation and involvement in criminal activities (Wilson & Widom, 2010). Safe shelter seems to be vitally important to prevent further victimization of runaways in sexual exploitation.
Directions for Future Research

Indisputably, scholarly research in the area of child sex trafficking is severely lacking (Goździak & Bump, 2008; Williams & Frederick, 2009). Research using varied, nationally representative, and even transnational samples is needed in order to confirm and possibly extend the findings of this study. Prevention education, supported by empirically-based information, would aid in protecting at-risk minors by warning them about the manipulative tactics used by sex traffickers. Few investigations into the nature of the exploitative relationship between sex traffickers and minor victims have been conducted. Such research would supply critical information to law enforcement or other professionals who come in contact with minor victims being exploited and controlled by traffickers. In addition, little evaluation of programs serving sexually exploited minors has occurred, limiting the development of effective treatment strategies.

Conclusion

This study theoretically framed a pathway of vulnerability to child sexual exploitation in prostitution. The analysis of this pathway linking caregiver strain, child maltreatment, and risk-inflating responses has provided greater comprehension of the processes that increase victim vulnerability. Also, the quantitative analyses supplied further validation of previous research on child sex trafficking victims that primarily had been documented using qualitative methods.

This study suggests that maltreated minors, already suffering from adversity due to harmful family conditions, tragically become the very minors who are most likely to endure further exploitation in child sex trafficking. When caregivers can no longer provide sufficient protection or care, rather than these girls becoming nobody’s daughters (Hanna, 2002), attempts are needed to assist their caregivers. When required, the community of responsible adults must intervene with adequate guardianship to prevent the sexual exploitation of such minors.
References


Bender, K. (2010). Why do some maltreated youth become juvenile offenders? A call for further
investigation and adaptation of youth services. *Children and Youth Services Review, 32*, 466-473.


Table 1. Descriptive Statistics and Bivariate Correlations of All Study Variables (N = 174)

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Note: Coefficients were computed using Pearson product moment, phi, or point-biserial correlation. * p < .05, ** p < .01, two-tailed.
Figure 1. Measurement Model

Note: $\chi^2(24) = 30.85$, $p = .16$; NC = 1.28; CFI = .98; TLI = .98; RMSEA = .04; WRMR = .77

* $p < 0.05$, ** $p < 0.01$, two-tailed.
Figure 2. Primary and Supplementary Structural Equation Models

Primary Structural Equation Model

![Primary Model Diagram]

Note: $\chi^2(36) = 44.61, p = .15; NC = 1.24; CFI = .98; TLI = .98; RMSEA = .04; WRMR = .79$

Supplementary Structural Equation Model including Self-Denigration

![Supplementary Model Diagram]

Note: $\chi^2(39) = 48.94, p = .13; NC = 1.25; CFI = .97; TLI = .98; RMSEA = .04; WRMR = .80$

*p < 0.05, **p < 0.01, two-tailed.*