IDENTIFYING THE PSYCHOLOGICAL MECHANISMS THAT MEDIATE THE
RELATIONSHIP BETWEEN CRIMINAL VICTIMIZATION AND ANTI-SOCIAL
BEHAVIOR AND SUBSTANCE USE

by

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(Under the Direction of Tom McNulty)

ABSTRACT

Path modeling and data from a survey of African Americans is used to test hypotheses
derived from three criminological theories: General Strain Theory, Self-Control Theory, and
Biased Attribution/Attachment Theory. I focus on the psychological mechanisms that mediate
the association between criminal victimization and anti-social behavior and substance use. The
findings show some support for the theories tested. The effect of violent victimization on anti-
social behavior and marijuana use was indirect through depression and low self-control, and the
effect of childhood sexual victimization on affiliations with deviant peers was indirect through
depression and low self-control. Theoretical implications and limitations of the study are
discussed.

INDEX WORDS: Victimization, Anti-social behavior, Substance use, General strain theory,
General theory of crime, Attachment theory, Depression, Self-control,
Hostile view of relationships, Affiliation with deviant peers
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# TABLE OF CONTENTS

**SECTIONS**

1. **INTRODUCTION** .......................................................... 1
2. **THE VICTIMIZATION-ANTI-SOCIAL BEHAVIOR/SUBSTANCE USE LINK** .... 5
3. **POTENTIAL MEDIATORS OF VICTIMIZATION** .......................... 7
   - General Strain Theory ......................................................... 7
   - Self-Control Theory .......................................................... 9
   - Biased Attribution/Attachment Theory ..................................... 10
   - Affiliation With Deviant Peers ............................................. 12
4. **HYPOTHESES** ............................................................. 16
5. **DATA AND METHODS** .................................................. 18
   - Sample .............................................................................. 18
   - Measures ........................................................................... 19
   - Dependent Variables ....................................................... 19
   - Independent Variables ..................................................... 20
   - Mediating Variables ....................................................... 23
   - Analytic Strategy ............................................................ 24
6. **RESULTS** ................................................................. 26
   - Descriptive Statistics ....................................................... 26
   - Direct Effects ............................................................... 28
SECTION 1
INTRODUCTION

Physical and sexual victimization, with the exception of the literature on child abuse, has been largely ignored as a source of anti-social behavior and substance use in the criminological literature. Outside of studies that look at physical abuse by parents and caretakers (Rudo, Powell, and Dunlap 1998; Weaver, Borkowski, and Whitman 2008; Widom 1989) and childhood sexual abuse (Mitchell, Ybarra, and Finkelhor 2007; Widom 1996), it is very rare to see victimization treated as an independent variable. Most often, victimization is treated as a dependent variable that is the outcome of anti-social behavior, being affiliated with deviant peers, or substance use (see Fisher, Sloan, Cullen, and Chunmeng 1998; Krebs and Steffey 2005; Regoecri 2000; Schreck, Fisher, and Miller 2004; Schreck, Stewart, and Fisher 2006).

Numerous recent studies have suggested that physical and sexual victimization have a large impact on violence and anti-social behavior, even after controlling for other relevant variables (Agnew 2002; Baron 2004; Buka, Stichick, Birdthistle, and Earls 2001; Gormon-Smith and Tolan 1998; Hay and Evans 2006; Kilpatrick, Saunders, Resnick, Best, and Schnurr 2000; Margolin and Gordis 2000; Scarpa 2001; Schwab-Stone and Chen 1999). Some studies have looked at the impact of victimization on substance use (Brems, Johnson, Neal, and Freemoun 2004; Davis, Combs-Lane, and Jackson 2002; Gutierres and Van Puymbroeck 2006; Linares 2004; Lo and Cheng 2007; Lo, Kim, and Church 2008; Neff and Waite 2007), but most of these studies have been concentrated in the areas of public health/medicine and psychology. This growing body of research has focused on the effect of victimization on anti-social behavior and substance use, while criminology has continued to largely ignore the victimization-deviance link.

1 Anti-social behavior generally refers to actions that deviate significantly from social norms. In the present study anti-social behavior is operationalized by a set of items measuring involvement in certain illegal activities and dishonesty.
While the studies in the health/medicine and psychology fields are notable, they do have some methodological issues, such as focusing on high-risk or incarcerated samples, samples drawn from substance abuse treatment facilities, and a failure to control for relevant variables in the criminological literature, like affiliations with deviant peers.

One of the reasons for the current study is to remedy this lack of attention paid to the effects of violent and sexual victimization on anti-social behavior and substance use in the criminological literature. This paper also expands the criminological literature on the victimization-deviance link by looking at both substance use and other deviant outcomes simultaneously. A large number of studies to date have documented a correlation between anti-social behavior and substance use (Barnes, Welte, and Hoffman 2002; Coll, Juhnkie, Thobro, and Haas 2003; Dukarm, Byrd, Auinger, and Writzman 1996; Fergusson, Lynskey, and Horwood 1996; Hays and Ellickson 1996; Huizinga, Loeber, Thornberry, and Cothern 2000; Wagner 1996; Welte, Zhang, and Wieczorek 2001), so it is important to look at the two outcomes simultaneously to further study their link. The second purpose of this paper is to test the effects of psychological mechanisms drawn from three different theoretical traditions: General Strain Theory, Self-Control Theory, and Biased Attribution/Attachment Theory, regarding how they mediate the relationship between violent and sexual victimization and anti-social behavior and substance use. While several studies have identified the crime-generating effects of victimization (Fagan, Piper, and Cheng 1987; Singer 1986; Zhang, Welte, and Wieczorek 2001), there have not been studies done to date that try to identify the different psychological mechanisms that could mediate this relationship.

There are two main research questions guiding this research. First, what is the relationship between violent and sexual victimization and anti-social behavior and substance
use? And, secondly, what are the psychological mechanisms which mediate the relationship between violent and sexual victimization experiences and anti-social behavior and substance use? In the present study FACHS, the Family and Community Health Study, is used to test these research questions. The FACHS data set is a longitudinal study of African American families in both Georgia and Iowa. The present analyses uses variables drawn from the target child interviews conducted at wave 4 of the FACHS data collection. The age range of respondents in this study is 16 to 20, with the average age of respondents being 19. A total of 534 respondents are included in the current study after taking into account missing data.

The limitation that this study uses cross-sectional data should be mentioned. The reason this is important is because this study is specifically designed to test time-ordered events and mediation. This paper implicitly assumes that victimization is a state-based phenomenon. Victimization is being viewed as a catalyst for change in people’s lives; people are not the same after being victimized. There is, however, another way victimization is approached in the literature, and that is the population heterogeneity approach. In this view, people who are victimized are intrinsically different from non-victims (Fisher, Sloan, Cullen, and Chunmeng 1998; Gover 2004; Regoeczi 2000; Schreck and Fisher 2004; Schreck, Stewart, and Fisher 2006). These individuals are different based on various factors, two commonly tested factors being routine activities and levels of self-control (Fisher, Sloan, Cullen, and Chunmeng 1998; Gover 2004; Miethe, Stafford, and Long 1987; Mustaine and Tewksbury 1998; Regoeczi 2000; Schreck and Fisher 2004; Schreck, Stewart, and Fisher 2006). Numerous studies have observed that individuals with risky routine activities and low self-control are more likely to be victimized than individuals who do not engage in risky activities and have higher levels of self-control (Fisher, Sloan, Cullen, and Chunmeng 1998; Gover 2004; Miethe, Stafford, and Long 1987;
Mustaine and Tewksbury 1998; Schreck and Fisher 2004; Schreck, Stewart, and Fisher 2006). The state-based and population heterogeneity approaches to victimization have causal flows going in opposite directions of each other. If the analysis done in this study was truly time-ordered and showed positive results, it would give support for the state-based theory of victimization. Since the data lack true time-ordering, this limits how strong the evidence provided by this study can be. There is no way to know for sure that the relationships discovered don’t work just as well in the other causal direction, which would support a population heterogeneity approach to victimization. What this paper can provide is a strong direction for future research making state-based arguments about victimization that utilizes longitudinal data sets.
SECTION 2

THE VICTIMIZATION-ANTI-SOCIAL BEHAVIOR/SUBSTANCE USE LINK

The lack of attention paid to victimization as a source of anti-social behavior and substance use is surprising, given the victimization literature that is available and what it has to say about the impact of being victimized. Most of the literature on victimization identifies victimization experiences as very traumatic and these experiences are likely to be seen as unjust (Kilpatrick, Saunders, Veronen, Best, and Von 1987; Miller, Cohen, and Wiersema 1996; Resick 1987). Violent and anti-social behavior that is directed at others may serve as a coping mechanism and can help individuals reassert a sense of control over their lives (Brezina 2000). Substance use could be an outcome of victimization as well, as this behavior can help to ameliorate the distress of the victimization experience (Brezina 2000).

In a review of the literature on the effect of physical victimization on anti-social behavior, Margolin and Gordis (2000) note that physical abuse teaches aggressive behavior and normalizes physical abuse in close relations. They cite a vast literature that connects being physically victimized in childhood with rough play with peers during adolescence, higher peer ratings of aggression and anti-social behavior, and higher rates of disciplinary problems at school (Margolin and Gordis 2000). They also cite literature that connects sexual abuse with aggression, delinquency, and destructiveness (Margolin and Gordis 2000). In another review of the literature, Macmillan (2001) notes numerous studies that relate abuse during childhood with an earlier onset of violence among youths and an increase in dating violence among adolescents who were physically abused as children. In the same review Macmillan (2001) mentions studies that show that adolescents that have been the victims of nonfamilial violence show more serious involvement in criminal activity, have more “delinquent lifestyles”, and have more delinquent
peers. Violent victimization may thus also increase affiliations with deviant peers as well as increasing one’s own violent behavior (Macmillan 2001). After controlling for previous involvement in anti-social behavior and numerous sociodemographic characteristics, Menard (2001) found that experiences of nonfamilial victimization during adolescence tripled the odds of adult involvement in violent and property offenses and doubled the odds of being involved in domestic violence.

In a study of current substance use and lifetime victimization experiences, Davis et al. (2002) found that those who had reported past experiences of physical and sexual assault were more likely to be current substance abusers than those who had not been victimized in the past. In a similar study, Lo and Cheng (2007) found that childhood physical abuse was a strong predictor of current substance use in a sample of young adults. Another study gave the dramatic figure that individuals who were the victims of nonfamilial violence in adolescence had their odds of problem drug use in adulthood increased by 90% over adults who were not victimized in adolescence (Menard 2001). This relationship held after controlling for prior involvement in anti-social behavior and a host of sociodemographic variables.
SECTION 3

POTENTIAL MEDIATORS OF VICTIMIZATION

Many of the major theories in criminology stress a psychological mechanism that causes or increases anti-social behavior. While these theories might agree that violent and sexual victimization can lead to anti-social behavior and substance use, they would disagree on the psychological mechanism that would mediate that relationship. In the present study, psychological mechanisms from 3 different theoretical traditions- General Strain Theory, Self-Control Theory, and Biased Attribution/Attachment Theory are tested simultaneously to see which are most consistent with the data.

GENERAL STRAIN THEORY

Robert Agnew’s (1992; 2001) General Strain Theory (GST) argues that negative stimuli, or strains, which can be caused by aversive social conditions, relations, or experiences, foster negative emotionality. This negative emotionality increases risks for anti-social behavior and substance use by fostering belligerence and irritability, lowered inhibitions, a lack of concern with the future, and a need for coping (Agnew 1992; 2001). While the linking of strain and anti-social behavior is an old idea in the criminology literature, identifying negative emotionality as the mediating variable between strain and anti-social behavior represents a dramatic reworking of classic strain theory.

In the present study, the negative emotion used as a mediator to test GST and the relationship between victimization and anti-social behavior and substance use is depression. Much past research has shown there to be a strong, positive correlation between anti-social behavior and depression (Capaldi 1992; O'Connor, McGuire, Reiss, Hetherington, and Plomin

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2 The reason depression was not included in the model in addition to anger/frustration was because anger/frustration was not measured at wave 4 of data collection in the FACHS study.
1992; Patterson, Reid, and Dishion 1992). While the causal order is often seen as flowing from anti-social behavior to depression (Capaldi 1992; Patterson, Reid, and Dishion 1992), it could also operate in the opposite direction with depression, especially when it is rooted in unjust treatment, resulting in anti-social behavior (Simons, Yi-Fu, Stewart, and Brody 2003). Simons et al. (2003) found that depression partially mediated the relationship between discrimination and anti-social behavior. It can be argued that depression increases irritability, lowers inhibitions, and that a desire to cope with this emotional state is strong. Another way of putting this is that depression may reduce social control. Anti-social behavior and substance use may provide a means to vent frustration and deal with this negative emotional state (Simons, Yi-Fu, Stewart, and Brody 2003).

It has been argued that criminal victimization, specifically physical or sexual victimization, should be considered a key strain in the GST literature (Agnew 2001). Physical and sexual victimization are likely to be seen as unjust, often occur in settings with little social control, and can expose victims to criminal models of behavior (Agnew 2002). In the fields of psychology and psychiatry there have been numerous studies that have identified much higher rates of depression in sexually and physically abused individuals than in the general population (Gomes-Schwartz, Horowitz, and Sauzier 1985; Mannarino, Cohen, and M. 1989). A limited number of studies have used GST to explain the link between criminal victimization and anti-social behavior and substance use (Agnew 2002; Baron 2004; Hay and Evans 2006; Neff and Waite 2007). What remains to be done are studies that look at depression as the mediator between criminal victimization and anti-social behavior and substance use.
SELF-CONTROL THEORY

Gottfredson and Hirschi (1990) proposed in “A General Theory of Crime” that the key psychological variable explaining anti-social behavior is self-control. They argue that it is individuals low in self-control who are attracted to deviance and crime. Individuals low in self-control have a here-and-now orientation, and are shortsighted in terms of the future consequences of their actions. These individuals are not able to defer gratification, and will look for the quick and easy way to gain the things they desire. Crime provides an avenue to gain things individuals place value on with very little hard work being necessary. Individuals low in self-control are more likely to engage in activities that are risky but can result in large rewards. Analogous behaviors like gambling and substance use are correlated with other criminal behavior in individuals with low self-control.

Gottfredson and Hirschi (1990) argue that parenting is the main explanation for why individuals have low self-control. Parents who do not monitor their children and consistently discipline them when they engage in anti-social behavior produce individuals who are shortsighted, selfish, and incapable of deferring gratification. Many studies in the self-control literature have looked at the role of low self-control in mediating the relationship between inconsistent parenting and anti-social behavior, with mixed results (Burt, Simons, and Simons 2006; Cochran, Wood, and Sellers 1998; Gibbs, Giever, and Martin 1998; Hay 2001; Vazsonyi and Belliston 2007).

Numerous studies have identified low self-control as leading to a higher likelihood of being victimized, and often this is through low self-control’s effect on lifestyles and routine activities (Holtfreter, Reisig, and Pratt 2008; Kent, Xiaoh, and Bangon 2008; Piquero, MacDonald, Dobrin, Daigle, and Cullen 2005; Schreck, Wright, and Miller 2002; Schreck,
Stewart, and Fisher 2006; Stewart, Elifson, and Sterk 2004). In the present study it is argued that experiences of violent and sexual victimization could possibly result in low self-control. This is not to deny that parenting practices are a key factor in determining levels of self-control, but that other experiences, such as being victimized, could influence or change individual levels of self-control.

Gottfredson and Hirschi (1990) argued in “A General Theory of Crime” that a person’s level of self-control is set by about age 10 and does not change throughout the life course. Multiple studies have already disputed this claim and shown that self-control varies across the life course and have also found that the effect of low self-control on anti-social behavior is contingent on other factors, like social bonds (Doherty 2006; Winfree, Terrance, Ni, and Finn-Aage 2006). Levels of self-control can vary across the life course, and perhaps levels of self-control can be partially determined by traumatic experiences such as being criminally victimized, or can be altered by such experiences. In reviewing literature on the consequences of physical and sexual abuse, Arias (2004) notes that among other issues, abused children suffer from attention deficits at school, an inability to stay still and focus. This kind of behavior is expected of children with low self-control: an inability to focus on tasks at hand, being fidgety, and lacking overall concentration. Perhaps the well-documented link between victimization experiences and anti-social behavior and substance use could be mediated by changes in individual levels of self-control in the direction of having less self-control. Findings of this kind would make for an intriguing expansion of the existing self-control literature.

BIASED ATTRIBUTION/ATTACHMENT THEORY

The third and final proposed mediator between victimization and anti-social behavior is a hostile, distrusting view of relationships. Ken Dodge’s Biased Attribution Theory (1980; 1986)
and Attachment Theory (Ainsworth, Blehar, Waters, and Wall 1978; Bowlby 1969; Lyons-Ruth 1996) are two theoretical perspectives from developmental psychology that propose that a hostile, distrusting view of relationships causes individuals to develop skeptical and biased views of people’s intentions and behaviors, and that this increases the chances they will develop conduct problems. Dodge contends that anti-social individuals hold a view of people as untrustworthy and potentially exploitative, and that this leads them to be aggressive and untrusting in their interactions with others in order to avoid being taken advantage of or victimized. Individuals with a hostile view of relationships read aggression and malevolent intent in actions by others, even very harmless actions. Past research has been consistent with this theorizing, showing that aggressive children and institutionalized delinquents have this view of relationships (Dodge, Bates, and Pettit 1990; Dodge and Newman 1981; Slaby and Guerra 1988).

Both Dodge’s Biased Attribution Theory (1980; 1986; 1991) and Attachment Theory (Ainsworth, Blehar, Waters, and Wall 1978; Bowlby 1969; Lyons-Ruth 1996) have argued that the parent-child bond is the source of a hostile view of relationships. A harsh, rejecting parenting style is the cause most widely discussed in both theories that leads to a hostile view of relationships. Attachment theory argues that children with caring, nurturing parents develop a positive and trusting view of relationships, whereas children with harsh and rejecting parents develop an insecure attachment style marked by a distrusting approach to relationships that causes them to approach others with suspicion. There have been a handful of studies in the psychology literature that have looked at the correlation between childhood physical maltreatment and sexual abuse and having an insecure attachment style in adolescence and adulthood (Alexander and Anderson 1994; Gormley 2004; Schreiber and Lyddon 1998; Toth and
Cicchetti 1996; Wekerle and Wolfe 1998). Similar studies do not appear to have been done in the Biased Attribution Theory literature.

Perhaps alongside the parent-child relationship, experiences of nonfamilial physical and sexual victimization in childhood and adolescence could also contribute to developing a hostile view of relationships. While these experiences of nonfamilial physical and sexual victimization could be a one-time occurrence or a reoccurring event, either way they would have to be considered traumatic experiences that could drastically alter one’s view of relationships and attachment patterns. The individual victim of nonfamilial violence or sexual abuse could approach others in a similar manner to the individual with harsh and rejecting parents: with suspicion, aggression, and a fear of being exploited. We would expect this person to engage in more anti-social behaviors than their peers who have a trusting view of relationships. If a hostile view of relationships were found to mediate the relationship between victimization and anti-social behavior, this would make for a worthwhile expansion of both Attachment Theory and the Biased Attribution Model.

AFFILIATION WITH DEVIANT PEERS

A reoccurring and strong correlation is found in the criminological literature between affiliations with deviant peers and anti-social behavior. While the relationship can flow both ways, and the two variables can be viewed as reciprocal, the predominant causal flow appears to be from affiliation with deviant peers to anti-social behavior, based on longitudinal studies (Elliott and Menard 1996; Warr 2002). Several studies have identified affiliations with deviant peers as leading to a higher risk of being violently victimized (Schreck and Fisher 2004; Schreck, Fisher, and Miller 2004). Perhaps the causal flow can go the other way as well, with individuals who have been violently and/or sexually victimized later affiliating with deviant peers. Lauritsen
et al. (1991) found that victimization influenced “delinquent lifestyles” in a sample of American adolescents. Interestingly, their measure of “delinquent lifestyles” included both self-reported delinquent acts as well as delinquent affiliations. Perhaps victimization influences not only individual involvement in anti-social behavior, but also one’s deviant affiliations. Thus, a measure of affiliations with deviant peers is included in the analyses in an effort to determine the extent to which it is affected by victimization experiences as well as how it affects anti-social behavior and substance use.

In addition to a direct relationship between victimization and affiliations with deviant peers, it may be that victimization affects a person’s friendships and affiliations indirectly through the psychological mechanisms identified in this study. Affiliations with deviant peers are thus also treated as a potential outcome of victimization where the psychological mechanisms mediate this relationship.

Affiliations with deviant peers have an important place in all three of the theories tested in this paper. In GST, Agnew (1992) argues that affiliations with deviant peers are one of the factors affecting dispositions towards anti-social behavior. Strained individuals who have deviant peers are more likely to already be disposed towards deviance and may be more likely to attribute their adversity to others (Agnew 1992). Adversity may actually lead individuals to join or form deviant peer groups under certain circumstances (Agnew 1992). The strained individual with deviant peers is more likely to react to strain with deviance than the person who does not have deviant peers. While Agnew (1992) has identified a large number of conditioning factors that make strained individuals more likely to engage in deviance (including low constraint, temperament, prior learning history, etc.), affiliations with deviant peers is the only one used in this study due its important place in all three theories tested and for the sake of parsimony.
Gottfredson and Hirschi (1990) have made a “birds of a feather” argument in self-control theory regarding affiliations with deviant peers. Individuals with low self-control are likely to have stronger bonds with other individuals of low self-control than with individuals with high self-control. Individuals with low self-control are alienated from their conventional peers and are more likely to associate with like-minded individuals, individuals also low in self-control. Gottfredson and Hirschi do not believe that affiliations with deviant peers lead to anti-social behavior, but they do believe that associating with deviant peers is one of the consequences of low self-control. Individuals low in self-control engage in anti-social behavior, and individuals who engage in anti-social behavior hang out together, so therefore, individuals low in self-control tend to hang out together.

One of the consequences of having a hostile view of relationships should be alienating others because of aggression towards them and an untrusting view of one’s peers. This is likely to cause individuals with a hostile view of relationships to be rejected by their peers. Dodge (1980) contends that children with a hostile attribution bias read aggression in both benign and ambiguous situations where their non-aggressive peers do not. These aggressive children react to perceived aggression with aggression of their own, which is likely to alienate peers who believe their aggression is not warranted (Dodge 1980). Lesser (1959) observed this relationship; aggression that is perceived as unwarranted by one’s peers is met with social rejection, while aggression that is perceived as legitimate is actually correlated with popularity among one’s peers. Rejected, and with no one else to turn to, aggressive children have only each other to hang out with. Since these are the individuals that are supposed to be more likely to engage in anti-social behavior according to both Attachment Theory and the Biased Attribution Model, the resulting group is one made up of individuals with a hostile view of relationships that
is more likely to engage in deviant behavior than their more conventional peers, and individuals in the group could reinforce each other’s deviant behavior.
SECTION 4

HYPOTHESES

In summary, this paper has identified that past experiences of physical and sexual victimization are correlated with anti-social behavior and substance use. Psychological mechanisms based on three different criminological theories have been noted that could mediate this relationship. While these theories are often viewed as competing, each has been supported by prior research. Perhaps these theories are actually a complementary set of psychological mechanisms through which victimization experiences affect anti-social behavior and substance use. Therefore, some support for all three theories tested is expected.

These ideas are tested using one wave of data from a longitudinal study of hundreds of African-Americans. It is assumed that victimization experiences can result in involvement in anti-social behavior and substance use. It is also assumed that victimization experiences can result in the psychological states that mediate the relationship between criminal victimization and anti-social behavior and substance use.

Based on these beliefs, the first hypothesis is that all of the victimization variables will be related to affiliations with deviant peers, anti-social behavior and substance use. The second hypothesis is that once the mediating variables are included in the model, the direct relationship of victimization on affiliations with deviant peers, anti-social behavior and substance use will be reduced to insignificance. The effect of the independent variables on the dependent variables will be through the psychological mechanisms once they are included in the model. Thus, the psychological variables will fully mediate the relationships between the independent and dependent variables. A depiction of this causal model can be found in figure 1. As the model shows, victimization is related to all 3 of the psychological mechanisms, and all 3 of the
psychological mechanisms are associated with affiliations with deviant peers, anti-social behavior, and substance use. Affiliations with deviant peers are also associated with both anti-social behavior and substance use.

Figure 1: Causal Model
SECTION 5
DATA AND METHODS

SAMPLE

The present study draws on data from wave 4 of the Family and Community Health Study (FACHS), a multisite investigation of neighborhoods and families and their effects on the health and development of children (Conger, Ebert-Wallace, Sun, Simons, McLoyd, and Brody 2002; Simons, Lin, Gordon, Brody, Murry, and Conger 2002b; Simons, Simons, Chen, Brody, and Lin 2007). The FACHS sample consists of several hundred African-American families living in both Iowa and Georgia. The sample looks at families in both small and large cities, and the socioeconomic status of families ranges from the very poor to those with an upper middle income. At the time of original recruitment, each family included a child who was in the fifth grade. At each wave of data collection interviews were conducted with the target child and their primary caregiver. At the start of data collection, 259 African-American families were involved (114 in Georgia and 144 in Iowa), and a total of 867 African-American children (400 boys and 467 girls; 462 in Iowa and 405 in Georgia) and their primary caregivers took part in the study. In the current study the total number of cases examined after taking into account missing data is 534, 298 females and 236 males. A full description of the sampling procedure and interview processes used in the FACHS study can be found in previous articles (see Simons et al. 2002b; Simons et al. 2007; Simons, Yi-Fu, Stewart, and Brody 2003).

Wave 4 of the FACHS data set was used because this is the only wave that contains all of the variables used in this study. Wave 3 does not contain measures of low self-control. A longitudinal analysis was not possible because of the independent measures used. Items measuring childhood sexual victimization experiences and experiences of sexual assault since
age 15 were not included in the target respondent questionnaire until wave 4. Also, in previous waves the measures of victimization used in this study asked respondents about their violent victimization experiences and their friends’ and families’ victimization experiences in the same question. These items conflated individually experienced and vicarious victimization, and were not appropriate measures to use in the current study. It was not until wave 4 that respondents were asked in separate questions about their victimization experiences and their friends’ and families’ victimization experiences.

MEASURES

The current analyses used measures of violent and sexual victimization, psychological mechanisms, affiliations with deviant peers, anti-social behavior, and substance use\(^3\) collected at wave 4 in the FACHS data set. Complete data for all the measures used in this study were available for 534 individuals, 298 females and 236 males. The average age of respondent in wave 4 was 19, and the range in ages for respondents identified in this study was from 16 to 20.\(^4\)

The specific measures used in this study are described below.

DEPENDENT VARIABLES

Anti-Social Behavior

This construct is made of self-reported items drawn from the conduct disorder section of the Diagnostic Interview Schedule for Children, Version 4 (DISC-IV). This construct has demonstrated consistent reliability and validity (Shaffer, Schwab-Stone, Fisher, Cohen, Piacentini, Davies, Conners, and Regier 1993; Simons et al. 2007). The items in this measure are a series of 21 questions asking how often in the previous year the respondent engaged in

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\(^3\) Items measuring the use of substances other than alcohol and marijuana are not included in this study because of the lack of variation in responses and extreme skew. For the harder drugs respondents were asked about, less than 3.5% reported any use in the previous year.

\(^4\) Twelve 21 year-olds were removed from the sample to isolate those respondents who were not of legal drinking age at the time of the survey.
certain anti-social acts such as shoplifting, purse snatching, robbery, setting fires, lying in order to gain something of value, physical assault, etc. A count of the number of behaviors engaged in is used in this study, with a possible range of 0-21, and the coefficient alpha is .66. The mean number of anti-social behaviors engaged in during the previous year was 2.9, with a standard deviation of 3.62.

Marijuana Use

This measure consists of a single question in wave 4 that directly asked the respondent how often in the past 12 months they used marijuana in order to get high. Possible responses were never, 1-2 times, 3-11 times, about 1-2 times per month, about 3-4 times per month, or more than once a week. The responses were coded 0-5. The mean score for this question was .86, with a standard deviation of 1.58.

Alcohol Use

This measure consists of a single question in wave 4 that directly asked the respondent how often in the past 12 months they had a lot to drink, which is defined as having 3 or more drinks at one time. Possible responses were never, 1-2 times, 3-11 times, a few times per month, about 1-2 times per week, or several times per week, with responses coded 0-5. The mean score for this question was .71, with a standard deviation of 1.19.

INDEPENDENT VARIABLES

Violent Victimization

This measure is a simple count variable that combines two different questions in wave 4 that record violent victimization experiences. The two questions are “Has anyone in the neighborhood surrounding your house ever used violence, such as in a mugging, fight, or sexual assault, against you?” and “In the past 12 months, were you a victim of a violent crime?” A
simple yes or no response was recorded for both questions. No was recoded as 0 and yes recoded as 1 and the two questions were combined to produce a count variable with a simple 0-2 distribution measuring violent victimization.\(^5\) This question could include experiences of both familial and non-familial victimization, as the perpetrator is not identified. The mean score on this measure was .08, with a standard deviation of .28.

**Childhood Sexual Victimization**

This measure is a scale constructed from 3 items that asked about sexual abuse experienced before the age of 15. The 3 questions asked whether a respondent had been touched sexually, persuaded to engage in a sexual act, or forced to engage in a sexual act by an adult or someone in charge of or responsible for them. The possible responses were never, once, 2-4 times, or more than 4 times. These possible responses were recoded as 0-3 and the 3 questions were combined to create a scale with a 0-9 range where low numbers indicate a low level of victimization and high numbers indicate a high level of victimization. This measure effectively differentiates between respondents with childhood experiences of sexual victimization ranging from none and very little to many. This question could include experiences of both familial and non-familial victimization, as the perpetrator is not identified. The coefficient alpha for this scale is .79. The mean score on this scale was .23, and the standard deviation was .95.

**Sexual Assault since 15**

This measure combines two different questions that record sexual assault experiences since age 15. The two questions asked whether since the age of 15 the respondent had been forced to engage in a sexual act by a boyfriend or girlfriend or an adult who was not the respondent’s boyfriend or girlfriend. The possible responses were never, once, 2-4 times, or

---

\(^5\) This measure is not specific to certain types of victimization and can’t encompass all possible kinds of victimization. It is limited to the questions that asked about individual violent victimization available in this survey.
more than 4 times. Never was recoded as 0 and the other 3 response categories were recoded as 1 for both questions. This variable was collapsed because of an extreme amount of skew when coded similarly to the childhood sexual victimization variable, and an unsatisfactory coefficient alpha level. The recoded responses were combined to produce a variable with a simple 0-2 distribution measuring sexual assault since the age of 15. The mean of this count was .12 with a standard deviation of .40.

Sex

In performing the analyses, sex is controlled for. Numerous studies to date have noted that there are sex differences in both physical and sexual victimization, with males experiencing violent victimization at a higher rate than females, and females experiencing sexual victimization at a higher rate than males (Gershon, Minor, and Hayward 2008; Marquart, Nannini, Edwards, Stanley, and Wayman 2007; Sundaram, Laursen, and Helweg-Larsen 2008). Additionally, a consistent finding in the criminological literature is that males are more often involved in criminal behavior than are females (see Bjerregaard and Smith 1993; Canter 1982; Heimer and De Coster 1999; Mears, Ploeger, and Warr 1998, among others). Additionally, sex may be related to one or more of the psychological mechanisms in the study. Some past research has shown that females are more likely to become depressed when facing stressful life events than are males (Gershon, Minor, and Hayward 2008; Green and Diaz 2008). Perhaps similar findings in regards to self-control and views of relationships could be found when controlling for sex. For all of these reasons, a dummy variable for sex is included in the current study, with females coded as the references category (male=1).
MEDIATING VARIABLES

Depression

To measure depression, items drawn from the Diagnostic Interview Schedule for Children, Version 4 (DISC-IV) were used. The depression section of the DISC-IV contains 21 questions regarding how often in the past year the respondent had felt grouchy, sad, worthless, tired or restless, slept more than usual, thought about suicide, etc. A count of these responses is used in this study, with a possible range of 0-21, and the coefficient alpha is .90. The mean score on this count in wave 4 was 4, and the standard deviation was 4.76.

Low Self-Control

A low self-control measure was created by combining 11 items from the Kendall and Wilcox (1979) inventory of self-constraint (e.g., You have to have everything right away; You have to be reminded several times to do things) with the Eysenck and Eysenck (1977) 6 item scale of risk-taking (e.g., You enjoy taking risks; You would do almost anything for a dare). The 17-item measure that resulted adequately captures the many elements of low self-control that Gottfredson and Hirschi (1990) described in their General Theory of Crime, including shortsightedness, impulsivity, risk-taking, etc. (Simons et al. 2007). All items in the measure had a response format that ranged from not at all true (1) to very true (3). The range for this measure is 17-51 and the coefficient alpha is .73. The mean score on this measure was 21.5, with a standard deviation of 4.27.

Hostile View of Relationships

A four-item variable was created for the current analysis to measure the construct hostile view of relationships. The four items focused on whether or not the respondent takes a cynical view of people’s actions and motives (e.g., People often try to take advantage of you; You have
often been lied to). The possible responses were mostly true and mostly false. A mostly true response was coded as showing a hostile view of relationships, and a count of the 4 items was created with a range of 0-4. The coefficient alpha for this measure is .70. The mean of this count was 1.8 with a standard deviation of 1.42.

Affiliation with Deviant Peers

Respondents self-reported their affiliations with deviant peers based on an instrument adapted from the National Youth Survey (Elliott, Huizinga, and Menard 1989). They were asked how many of their close friends had engaged in 12 separate deviant acts in the past year. Possible responses were none (1), some (2), or all (3). Some of the acts identified were: stealing something worth more than $50, joyriding, using drugs and alcohol, and getting pregnant out of wedlock or impregnating someone out of wedlock. These responses were summed to obtain a total score ranging from 12-36 measuring how much deviant behavior a respondent’s friends were involved in. The coefficient alpha for this scale is .81. The mean number of affiliations was 16.7, with a standard deviation of 3.65.

ANALYTIC STRATEGY

Path modeling using AMOS 16.0 was employed for this study to test whether the psychological variables mediated the relationships between the measures of victimization and anti-social behavior and substance use. The reason path modeling was used instead of full-blown structural equation modeling was two-fold. First, the psychological, affiliation with deviant peers, and anti-social behavior measures used in the present study are well-established scales that have been used in many other studies (Simons, Lin, Gordon, Brody, and Conger 2002a; Simons et al. 2007; Simons, Yi-Fu, Stewart, and Brody 2003). Using the single items in those measures as latent constructs of an unobserved variable would have been unnecessary and
messy. Problems would have arisen with model complexity and fit. Secondly, making the various types of victimization latent constructs of an unobserved victimization variable did not work well. The variables simply do not hold together, and were better viewed separately. The situation was the same when trying to combine the anti-social behavior scale with the two substance use items.

The first part of the analysis involved producing some basic descriptive statistics. Next, path modeling was used to regress affiliation with deviant peers, anti-social behavior, and substance use on the victimization measures to determine the relationships between victimization and affiliations with deviant peers, anti-social behavior and substance use. In the next model, the psychological measures were introduced as endogenous variables to determine the extent to which they mediated the relationships between the victimization measures and the three outcomes, and to determine if affiliations with deviant peers mediate the psychological mechanisms.

A mediating relationship exists when a variable accounts for the association between a predictor and some outcome. Baron and Kenny (1986) noted three conditions that must be met to establish a mediating relationship. First, the predictor and outcome variables must be significantly associated. Second, the mediating variable must be significantly associated with both the predictor and outcome variables. And lastly, controlling for the mediating variable must significantly reduce the association between the predictor and outcome variables.

A final, simplified path model was obtained by keeping only the paths from the fully specified model that included all of the study variables that were significant, along with proposed changes in the modification indices that improved model fit and were theoretically justified.
SECTION 6
RESULTS

DESCRIPTIVE STATISTICS

Table 1 presents the correlations for the study variables, as well as their means and standard deviations. Table 1 shows that each of the victimization variables is significantly associated with at least one of the psychological variables in the study. Violent victimization is positively associated with depression and low self-control, as is childhood sexual victimization. Being sexually assaulted since the age of 15 is positively associated with a hostile view of relationships. Violent victimization is positively associated with affiliation with deviant peers, anti-social behavior and marijuana use, while childhood sexual victimization is positively associated with affiliation with deviant peers and alcohol use. Being sexually assaulted since the age of 15 is positively associated with alcohol use. Furthermore, depression and low self-control are positively associated with affiliation with deviant peers, anti-social behavior and marijuana use. The correlation of .44 between depression and anti-social behavior is one of the larger correlations in the table. A hostile view of relationships is positively associated with alcohol use, and this is the only outcome it is significantly associated with. Also of note is that two of the mediators, depression and low self-control, are significantly and positively associated, as are two of the outcomes, anti-social behavior and marijuana use. At .42, the correlation between anti-social behavior and marijuana use is fairly robust. And finally, affiliation with deviant peers is significantly associated with anti-social behavior and marijuana use, but not with alcohol use. The correlations between affiliation with deviant peers and anti-social behavior and affiliation with deviant peers and marijuana use are sizeable, at .43 and .53, respectively.
Table 1. Correlation Matrix for the Study Variables (N = 534)

<table>
<thead>
<tr>
<th></th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
<th>10.</th>
<th>11.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sex (male = 1)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Violent Victim</td>
<td>.04</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Childhood Sex V</td>
<td>-.11*</td>
<td>.10*</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Sexual Assault Since 15</td>
<td>.05</td>
<td>-.04</td>
<td>.03</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Depression</td>
<td>-.15**</td>
<td>.15**</td>
<td>.11**</td>
<td>.04</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Low Self-Control</td>
<td>-.01</td>
<td>.16**</td>
<td>.20**</td>
<td>-.03</td>
<td>.22**</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Hostile View of Relationships</td>
<td>.05</td>
<td>-.01</td>
<td>-.01</td>
<td>.20**</td>
<td>.01</td>
<td>-.03</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Affiliation With Deviant Peers</td>
<td>.06</td>
<td>.28**</td>
<td>.11*</td>
<td>.01</td>
<td>.18**</td>
<td>.38**</td>
<td>.07</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Anti-Social Behavior</td>
<td>.14**</td>
<td>.22**</td>
<td>.03</td>
<td>.08</td>
<td>.44**</td>
<td>.28**</td>
<td>.06</td>
<td>.43**</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Marijuana Use</td>
<td>.04</td>
<td>.20**</td>
<td>.01</td>
<td>-.03</td>
<td>.18**</td>
<td>.23**</td>
<td>.07</td>
<td>.53**</td>
<td>.42**</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>11. Alcohol Use</td>
<td>-.09</td>
<td>.02</td>
<td>.11*</td>
<td>.11*</td>
<td>.01</td>
<td>.01</td>
<td>.11**</td>
<td>-.02</td>
<td>.01</td>
<td>.01</td>
<td>X</td>
</tr>
</tbody>
</table>

Mean: .44  .08  .23  .12  4  21.5  1.8  16.7  2.9  .86  .71
Standard Deviation: .50  .28  .95  .40  4.76  4.27  1.42  3.65  3.62  1.58  1.19

* p < .05, ** p < .01
DIRECT EFFECTS

Table 2 presents the standardized direct effects of the independent variables on affiliations with deviant peers and the outcomes. The results show that there are differences by gender in the sample. The males in the sample report significantly more anti-social behavior than do the females, and the females use alcohol significantly more than do the males. Violent victimization is positively associated with affiliations with deviant peers, anti-social behavior, and marijuana use, and childhood sexual victimization is associated with affiliation with deviant peers and alcohol use. The standardized regression coefficients of affiliation with deviant peers, anti-social behavior, and marijuana use on violent victimization are the largest in this model, at .266, .213, and .200, respectively. These results mirror the bivariate findings reported in table 1. Contrary to the bivariate findings, being sexually assaulted since 15 is significantly associated with both anti-social behavior and alcohol use once the effects of the other types of victimization are taken into account. These results do not fully support the first hypothesis made. While 2 of the 3 victimization measures are related to affiliations with deviant peers and each victimization measure is related to at least one of the outcomes, the victimization measures are not all related to affiliations with deviant peers and all 3 of the outcomes.

MEDIATING EFFECTS

Table 3 reports the results produced after including the psychological variables as potential mediators of the relationships between the exogenous and outcome variables. The first three columns record the extent to which the victimization measures predict increases or decreases in the psychological variables. Violent victimization is significantly and positively associated with higher levels of depression and lower self-control, as is childhood sexual
Table 2. Standardized Regression Coefficients Relating Affiliation with Deviant Peers and the Dependent Variables to the Exogenous Variables (N = 534)

<table>
<thead>
<tr>
<th></th>
<th>Affiliation with Deviant Peers</th>
<th>Anti-Social Behavior</th>
<th>Marijuana Use</th>
<th>Alcohol Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (male=1)</td>
<td>.063</td>
<td>.125***</td>
<td>.031</td>
<td>-.081*</td>
</tr>
<tr>
<td>Violent Victimization</td>
<td>.266***</td>
<td>.213***</td>
<td>.200***</td>
<td>.015</td>
</tr>
<tr>
<td>Childhood Sexual Victimization</td>
<td>.091**</td>
<td>.022</td>
<td>-.006</td>
<td>.098**</td>
</tr>
<tr>
<td>Sexual Assault since 15</td>
<td>.010</td>
<td>.079*</td>
<td>-.021</td>
<td>.109*</td>
</tr>
<tr>
<td>Model Fit Indices</td>
<td>Chi-sq.=296.461, d.f.=12, p=.000</td>
<td>RMR=.983, GFI=.871, CFI=.279</td>
<td>RMSEA=.211 (.190, .232)</td>
<td></td>
</tr>
</tbody>
</table>

* p < .10, ** p < .05, *** p < .01

victimization. Being sexually assaulted since the age of 15 is significantly and positively associated with having a hostile view of relationships. All the significant regression coefficients are in the expected direction and are fairly consistent with predictions made. None of the three types of victimization were associated significantly with all three of the psychological variables, but they were all associated with at least one.

The fourth column records the extent to which all of the exogenous and endogenous variables are associated with affiliation with deviant peers. Violent victimization is the only victimization measure significantly associated with affiliation with deviant peers once all the variables are in the model. The association between childhood sexual victimization and affiliation with deviant peers has been mediated by depression and low self-control; this regression coefficient has been reduced by 71%, from .091 to .026. This column also shows that all of the psychological variables are significantly associated with affiliation with deviant peers. The largest coefficient here is between low self-control and affiliations, at .321, and it is highly significant. Also of note is that once all the variables are entered into the model, there are significant sex differences in affiliations with deviant peers, with males having more deviant affiliations than females.
Table 3.  Standardized Regression Coefficients Relating Affiliation with Deviant Peers and the Dependent Variables to the Exogenous and Endogenous Variables (N = 534)

<table>
<thead>
<tr>
<th></th>
<th>Depression</th>
<th>Low Self-Control</th>
<th>Hostile View of Relationships</th>
<th>Affiliation with Deviant Peers</th>
<th>Anti-Social Behavior</th>
<th>Marijuana Use</th>
<th>Alcohol Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (male=1)</td>
<td>-.148***</td>
<td>.007</td>
<td>.041</td>
<td>.071*</td>
<td>.164***</td>
<td>.010</td>
<td>-.086**</td>
</tr>
<tr>
<td>Violent Victimization</td>
<td>.152***</td>
<td>.146***</td>
<td>.004</td>
<td>.207***</td>
<td>.063*</td>
<td>.052</td>
<td>.028</td>
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<tr>
<td>Childhood Sexual Victimization</td>
<td>.082*</td>
<td>.184***</td>
<td>-.004</td>
<td>.026</td>
<td>-.053</td>
<td>-.063*</td>
<td>.104**</td>
</tr>
<tr>
<td>Sexual Assault since 15</td>
<td>.049</td>
<td>-.032</td>
<td>.195***</td>
<td>.002</td>
<td>.056</td>
<td>-.038</td>
<td>.091**</td>
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<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
<td>.089**</td>
<td>.393***</td>
<td>.079**</td>
<td>-.025</td>
</tr>
<tr>
<td>Low Self-Control</td>
<td></td>
<td></td>
<td></td>
<td>.321***</td>
<td>.083**</td>
<td>-.001</td>
<td>.031</td>
</tr>
<tr>
<td>Hostile View of Relationships</td>
<td>.069*</td>
<td>.020</td>
<td>.049</td>
<td>.101*</td>
<td>.305***</td>
<td>.494***</td>
<td>-.034</td>
</tr>
<tr>
<td>Affiliation with Deviant Peers</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

Model Fit Indices

Chi-sq.=63.575, d.f.=12, p=.000  
RMR=.536, GFI=.979, CFI=.923  
RMSEA=.090 (.069, .112)

* p < .10, ** p < .05, *** p < .01
Columns 5, 6, and 7 record the extent to which all of the exogenous and endogenous variables, including affiliation with deviant peers, are associated with the three outcomes. Among the endogenous variables, depression and affiliation with deviant peers are significantly and positively associated with anti-social behavior and marijuana use, low self-control is significantly and positively associated with anti-social behavior, and a hostile view of relationships is significantly and positively associated with alcohol use. Of the victimization measures, violent victimization is still significantly associated with anti-social behavior, but the size of the coefficient has been greatly reduced, from .213 in the previous model to .063 in the current model, a reduction of 70%. The association between violent victimization and marijuana use has been reduced to insignificance as a function of depression, low self-control and affiliation with deviant peers. Childhood sexual victimization has some unexpected results. Childhood sexual victimization is still significantly associated with alcohol use, and the size of the regression coefficient has actually gone up slightly, from .098 to .104. Also in contrast to expectations, childhood sexual victimization is significantly and negatively associated with marijuana use. While this finding is unexpected, this coefficient is rather small at -.063. Being sexually assaulted since age 15 is no longer significantly associated with anti-social behavior once the psychological variables are included in the model. This coefficient is reduced by 29%, from .079 to .056. This relationship appears to be mediated by a hostile view of relationships. Being sexually assaulted since age 15 is still significantly associated with alcohol use, while the size of the coefficient has been reduced slightly, from .109 to .091.

A simplified model was obtained by keeping only the paths from the previous model that were significant. After running this reduced model, two previously significant paths were reduced to insignificance. These were the path from violent victimization to anti-social behavior
and the path from childhood sexual victimization to marijuana use. The model fit indices still did not point to a good fitting model at this point. The chi-square was still highly significant and the RMR and RMSEA figures were above general cutoff levels to be considered a good fitting model. Based on the modification indices, a few changes were made to improve model fit.

Among the exogenous variables, sex and childhood sexual victimization needed to be correlated, as did violent victimization and childhood sexual victimization. Based on the earlier review of the greater prevalence of victimization among girls and women, this link is justified, and the psychology literature has noted a correlation between physical and sexual abuse (Schaaf and McCanne 1998; Thompson, Arias, Basile, and Desai 2002). Among the endogenous variables, a path needed to be specified going from depression to low self-control. This linkage will be discussed further in the conclusion. Finally, among the outcomes a path needed to be specified from marijuana use to anti-social behavior, and the association between anti-social behavior and substance use has been previously noted in this paper, justifying this linkage.

This modified and simplified model can be found in figure 2. This figure provides a visual depiction of table 3 plus the recommended modifications, which is an easier way to display the avenues by which the exogenous and endogenous variables produce their effects. The figure indicates that violent victimization has an indirect effect on both anti-social behavior and marijuana use through its association with depression, low self-control and affiliation with deviant peers. Violent victimization has both a direct effect on affiliations with deviant peers and an indirect effect through depression and low self-control. Violent victimization is working through depression and low self-control, supporting both General Strain Theory and Self-Control Theory. Childhood sexual victimization has an indirect effect on affiliation with deviant peers, anti-social behavior, and marijuana use through its association with depression and low self-
control, findings supporting General Strain Theory and Self-Control Theory. Childhood sexual victimization also still has a significant direct effect on alcohol use when the psychological measures are included in the model. The effect of being sexually assaulted since age 15 on alcohol use is partially mediated by a hostile view of relationships. This measure also has an indirect effect on affiliation with deviant peers through its association with a hostile view of relationships. The results for being sexually assaulted since age 15 show some support for Biased Attribution/Attachment theory.

![Figure 2. Reduced Path Model (N = 534)](image-url)
Despite the widespread support for a link between being criminally victimized and anti-social behavior and substance use, more research is required. One reason is that too little of this research has been done in the criminology literature. Most of the studies that have made the link have been in the health/medicine and psychology fields. While these studies are important, there also need to be studies done looking at the victimization-deviance link in the criminological literature that use sound theories to explore why this link exists. This study attempted to fill this gap in the literature.

The present analysis used predictions from three different theoretical traditions to test what psychological mechanisms may be the mediating step between victimization and deviance. While all three of these theories could be used to argue for a link between physical and sexual victimization and anti-social behavior and substance use, each emphasizes a different psychological mechanism through which this relationship flows. Gottfredson and Hirschi (1990) have emphasized self-control, while Agnew (1992) has emphasized negative emotionality, and Attachment Theory (Ainsworth, Blehar, Waters, and Wall 1978; Bowlby 1969; Lyons-Ruth 1996) and the Biased Attribution Model (Dodge 1980; 1986) have emphasized a hostile view of relationships.

The analysis of the direct effects of the victimization variables on affiliations with deviant peers and the dependent variables indicated that violent and childhood sexual victimization were related to affiliations with deviant peers, violent victimization and being sexually assaulted since age 15 related to anti-social behavior. Violent victimization is related to marijuana use, and childhood sexual victimization and being sexually assaulted since age 15 are
related to alcohol use. Hypothesis 1 is thus not fully confirmed, but given some support. All of the victimization variables are not related to affiliations with deviant peers and all the outcomes, but two of the three variables are related to affiliations with deviant peers and each victimization measure is related to at least one of the outcome variables.

Hypothesis 2 was also not fully confirmed, but was also given some support. Even with the mediating variables included in the model, violent victimization was still directly associated with affiliations with deviant peers, and both childhood sexual victimization and being sexually assaulted since age 15 were still directly associated with alcohol use. There were, however, some mediating effects. In the final model, violent victimization is no longer directly associated with anti-social behavior and marijuana use, while being sexually assaulted since age 15 is no long directly associated with anti-social behavior.

The final model indicated that being violently victimized and being sexually victimized in childhood related to higher levels of depression and lower levels of self-control, while being sexually assaulted since the age of 15 related to having a hostile view of relationships. Being violently victimized was also related to having affiliations with deviant peers. All three of the mediating psychological variables were related to affiliations with deviant peers, while depression and low self-control were related to anti-social behavior. Depression was related to marijuana use, supporting General Strain Theory, and a hostile view of relationships was related to alcohol use, supporting Biased Attribution/Attachment Theory. Thus, all of the psychological mechanisms were related to affiliations with deviant peers and each one contributed to the variance explained in at least one of the outcomes, giving some support to all the theories being tested. Most importantly, depression and low self-control were related to anti-social behavior, as expected and thus supporting General Strain Theory and Self-Control Theory. Contrary to
expectations, however, having a hostile view of relationships was not related to anti-social behavior; the effect was through affiliations with deviant peers. Affiliations with deviant peers was related to both anti-social behavior and marijuana use. Also of note was that marijuana use was related to anti-social behavior, which falls in line with previous studies that correlated substance use with anti-social behavior. And finally, the psychological mechanisms at least partially mediated the relationships between the victimization measures and the outcome variables, showing some support for each of the theories tested. The only exception was the link between childhood victimization and alcohol use, which was not mediated by any of the psychological mechanisms or affiliations with deviant peers.

Another finding of note in this study is the significant association between depression and low self-control. In expanding general strain theory, Agnew et al. (2002) identified what they saw as the key personality traits that would determine which individuals reacted to strain by engaging in deviant behavior. Their key personality trait was negative emotionality, which is synonymous with feelings like anger and depression, and “low constraint.” The description of low constraint is extremely similar to Gottfredson and Hirschi’s concept of self-control. Whereas Gottfredson and Hirschi focus on parental monitoring and discipline to determine low self-control, Agnew et al. (2002) at least partially identify low self-control with genetics, and as such were proposing a behavioral-genetics approach to crime. It is intriguing that in this study one of their key personality traits predicting who is likely to respond to strain with deviance, negative emotionality, here represented by depression, is significantly associated with low self-control. It could be that instead of these two key traits simply being correlated due to genetics and physiology, these traits actually impact each other. Perhaps people experience strain, become depressed, and this also negatively impacts their level of self-control. This finding
impacts the general strain and self-control theory literatures by showing that the mediating mechanism between strain and deviance, negative emotionality, can be positively associated with low self-control.

This finding makes clearer the belief that these various theories of deviance, usually seen as competing perspectives, may actually represent complementary perspectives. On their own, General Strain Theory, Self-Control Theory, and Biased Attribution/Attachment Theory do not explain a large amount of variance in anti-social behavior and substance use. Each one of the psychological variables in the model was related to affiliations with deviant peers and at least one of the outcomes, but none of them explained a large amount of variance on their own. While each has an element of truth, none of them can be labeled as the one general explanation of deviant behavior. But taken together as complementary pieces of a larger theoretical framework, these theories could represent a fairly comprehensive picture of the impact that adverse events like criminal victimization have on risks for anti-social behavior and substance use.

Two limitations of this study should be mentioned. First, the study is based on cross-sectional data. This can cause issues in determining the temporal order of events in the model. The childhood sexual victimization measure would appear to be immune from this issue, as it records events well removed from the timeframe when the mediating variables and the outcomes were measured. But the violent victimization measure and possibly the measure of sexual assault experiences since age 15 are measuring events that could have occurred either simultaneously with or even after the psychological and outcome measures in the model. There is no way to be sure that the causal order is not being misspecified in the model, and that the proposed outcomes could actually be causes of violent victimization and being sexually assaulted since age 15. As noted earlier in the paper, the lack of time-ordering could mask support for a
population heterogeneity explanation of victimization that is not being tested in this study. This is a sacrifice that had to be made due to the questions that were posed at different waves of data collection in this particular data set. Future studies using longitudinal data should measure victimization experiences and then measure psychological mechanisms and anti-social outcomes at a later wave of data collection. These studies should also control for affiliations with deviant peers, self-control, routine activities, anti-social behavior, and substance use in a wave preceding the one where victimization is measured. This way, the argument could be made that the relationships found in this study still exist even when controlling for prior factors that could lead to being victimized. Without these variables in the current study it cannot be said for sure that prior affiliation with deviant peers, low self-control, routine activities, anti-social behavior, and substance use aren’t causing victimization. The relationship between victimization and anti-social behavior and substance use could be a spurious one or in the other causal direction if the correct variables are controlled for.

Finally, the current study uses a sample that consists only of African Americans. While it is difficult to believe that the psychological mechanisms affecting the link between victimization and anti-social behavior would vary by racial or ethnic group, this remains a possibility to be tested empirically. Future studies of this type should use diverse samples to determine if the findings in this study are generalizable to a wider population.
REFERENCES


