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General Strain Theory and Bullying Victimization: Do Parental Support and Control Alleviate the Negative Effects of Bullying

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GENERAL STRAIN THEORY AND BULLYING VICTIMIZATION:
DO PARENTAL SUPPORT AND CONTROL ALLEVIATE
THE NEGATIVE EFFECTS OF BULLYING?

by

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DEDICATION

In dedication to the young boys and girls who continue to battle with being the victim of bullying.

ACKNOWLEDGEMENTS

I would like to express my deep appreciation to all of those who stood by me through this long process. First, I would like to thank Dr. Tia Stevens-Andersen. I am truly honored and privileged to have worked with you on this thesis. Thank you for your instrumental and expressive support, guidance, inspiration, and profound wisdom. You have been here with me through my highs and lows constantly helping me press on even though my inner monologue would tell me to give up. I would not have made it without your continued support and encouragement. I would also like to thank Dr. Brandon Applegate for your comments, expertise, and insight. Finally, I would like to acknowledge my mother and father for always being motivational and supportive throughout my complete academic career. To mom, thank you for always having faith in my abilities and respecting my work. You have been with me from the start listening and encouraging me.

ABSTRACT

With growing reports of bullying victimization ranging from 8 percent to 46 percent in many countries, bullying victimization has been declared an international problem often affecting youth in or near one's school with poor parental supervision. While there has been a growing body of research concerning bullying victimization, few studies have examined the collateral consequences of bullying victimization and the mediating role of family processes through the theoretical lens of general strain theory. This thesis attempts to shed light on such a complex social phenomena and contribute to the bullying and stress literature. This study posits that bullying victimization is positively related to delinquent outcomes, the effect of bullying victimization is attenuated for those with a positive family environment, and the effect of bullying victimization on late adolescent delinquency is dependent upon family process and gender. Using data from the NLSY97, these assumptions were analyzed using binary logistic regression.

The data analyses revealed bullying victimization had a positive direct effect on the odds of engaging in marijuana use and physical assault. Furthermore, home environments characterized by supportive parents and parental control reduced the likelihood of late adolescent delinquency. However, there was no evidence that relationship between experiencing bullying victimization and substance use and violent

behavior in late adolescence was moderated by family processes and/or gender, with the exception of the moderate-strong interaction effect between bullying victimization and parent limit-setting on likelihood of hard drug use.

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CHAPTER 1

INTRODUCTION

The intersection between bullying victimization and juvenile delinquency is of modern interest (Demaray, Malecki, Secord, & Lyell, 2013). Bullying victimization is “considered as a precursor of violent and non-violent delinquent behavior” (Kim, Leventhal, Koh, Hubbard, & Boyce, 2006, p. 1035). Agnew (2001) has identified peer abuse as a significant predictor of delinquent, illegitimate coping strategies among youth. Agnew states many forms of adverse treatment are criminogenic in that they increase the risk of the use of illegitimate coping strategies, such as illicit drug use (Agnew, 2001, 2006; Ostrowsky & Messner, 2005; Hay, 2003) and violent behavior (Hay & Evans, 2006; Agnew, 2001, 2006).

Bullying victimization has been conceptualized different ways (Demaray, Malecki, Secord, Lyell, 2013). While there is some disagreement on what constitutes bullying, bullying is conceptualized commonly as a form of aggression frequently directed toward individuals in which a power imbalance is created between the victim and bully (see, for example, Demaray, Malecki, Secord, Lyell, 2013; Nansel et al., 2001; Olweus, 1994). Bullying can take the form of physical aggression (e.g., punching, kicking, shoving) or verbal aggression (e.g., threats, name calling, slander) (Beale & Scott, 2001; Fekkes, Pijpers, & Verloove-Vanhorick, 2005). Tennenbaum, Varjas, Myers, and Parris (2011) suggest bullying victimization can also take the form of indirect or

relational aggression, such as spreading false information about the victim throughout one's social network or social exclusion. Frequently, bullying victimization consists of "traditional" bullying where the aggressor develops and maintains an imbalance of power through the use of repeated physical or psychological abuse (Nansel et al., 2001; Olweus, 1994). Scholars in the United States have discovered between 8 percent and 17 percent of students report being the victim of bullying in primary or secondary school (Olweus, 1991, 1994; Kristensen & Smith, 2003; Mooij, 1992). However, bullying victimization rates should be interpreted with caution. Reason being, underreporting may occur due to embarrassment, fear of possible retaliation from the bully (Singer, 1988), and the belief teachers and authorities will fail to intervene when bullying victimization occurs (Olweus, 1993; Unnever & Cornell, 2003). Being victim of bullying can have a significant negative impact on later outcomes, such as the development of negative emotionality (e.g., depression, anxiety, anger), delinquency, loneliness, suicidal ideation, low self-esteem, social apathy, poor relationships with parents and friends, and poor academic performance (Demaray, Malecki Secord, & Lyell, 2013; Hawker & Boulton, 2000; Kochenderfer & Ladd, 1996; Paul & Gillessen, 2007). Some contend one of the major sources of juvenile delinquent outcomes originates from exposure to harsh, adverse treatment (see Agnew, 1992, 2001, 2006; Broidy & Agnew, 1997; Broidy, 2001; Hay, 2001, 2003; Haapasalo & Moilanen, 2004; Hollist, Hughes, & Schaible, 2009; Maxfield & Widom, 1996; Maxfield, Ostrowsky & Messner, 2005; Mazerolle, Piquero, & Capowich, 2003). Those holding this point of view further contend one's environment has the potential to moderate or exacerbate the criminogenic effects of exposure to negative stimuli. Baldry and Farrington (2005) posit that positive family environment

has the power to moderate the criminogenic effect of adverse treatment among adolescents.

Recent research suggests the family environment characterized by positive family support and control plays an integral role in the association with adolescent bullying victimization and later outcomes (Baldry & Farrington, 2005; White & Loeber, 2008). Despite a recent development of knowledge regarding the role of the family environment in the bullying victimization-delinquency relationship, research in this area is still limited (Hemphill, Tollit, and Herrenkohl, 2014). By identifying what variables are likely to mitigate the impact of bullying victimization on later outcomes, Hemphill, Tollit, and Herrenkohl (2014) suggest researchers can assist in the prevention and intervention of bullying victimization. In this context, drawing from general strain theory as a theoretical framework, this thesis attempts to fill the void in the literature by answering three questions. First, what are the criminogenic effects of bullying victimization? Second, do parental support and control moderate the relationship between bullying victimization and externalized/internalized delinquency? Finally, does the impact of parental support, supervision, and control on the bullying victimization-delinquency relationship differ for males and females?

CHAPTER 2

THEORETICAL ORIENTATION

Overview of General Strain Theory

Strain theories state that certain stressors increase the likelihood of offending (Merton, 1938). Merton's (1938) classic strain theory focuses on one's inability to achieve culturally approved goals and the distribution of legitimate opportunities for achieving goals. Agnew's (1992) extension of Merton's strain theory takes a social-psychological approach to explaining delinquent behavior. At the micro-level, general strain theory (GST) explains how negative relationships with others may lead to negative emotions, which increase one's inclination towards delinquent and criminal behavior (Agnew, 1992, 2001, 2006; Bernard, Snipes, & Gerould, 2010).

The field of criminology is full of theories often linking negative life experiences to delinquent and criminal behavior (Agnew, 2001, 2006). Agnew (2001) adopts principles from various theories (e.g., social control, social learning) in order to better explain crime and criminal behavior. Specifically, Agnew posits strain from negative life experiences may reduce social control, require social support, foster social learning of criminal and delinquent behaviors, and contribute to negative personality traits favorable to crime. Agnew (2006) suggests one must take into account the cumulative impact of negative events, the perceived magnitude, how recent and how long the strain has occurred, clustering of the negative events, available legitimate behavioral and emotional

coping strategies, and one's disposition to delinquent and criminal coping techniques. Delinquency and drug use are posited as common methods of coping with the stress of negative emotions. Agnew (1992) argues individuals with taxed non-delinquent coping strategies, who possess a low threshold for chronic strain, and/or who experience negative emotions directly related to strain are at the highest risk of delinquency and drug use. Coping strategies may entail the use of drugs to alleviate emotional and psychological distress, or more extreme coping techniques such as violent behavior (e.g., assault) that is directed at the actual source of strain or surrogate of that primary source of strain (Agnew, 2001, 2006; Ostrowsky & Messner, 2005; Hay, 2003).

GST is distinguished from other theories not only due to the relationship between various forms of negative life experiences and crime, but also due to its explanatory power answering the question why various forms of negative life events increase the likelihood of different forms of crime (Agnew, 2001, 2006; Agnew et al., 1996). Further, GST is the only criminological theory that argues one is pressured into delinquency and criminality due to the negative emotions that are a direct result from negative life experiences (Barlow & Decker, 2010)

What are strains?

Strains are specific events or circumstances surrounding events disliked by the individual (Agnew, 2006). Agnew (1992) argues Merton (1938) limited his version of strain theory by focusing solely on one source of strain (i.e., the discrepancy between culturally approved goals of economic success and institutionalized means) for one may experience strain in various ways. According to Agnew (1992), those individuals who experience one or more of the following three forms of strain are at the highest risk of

delinquency: 1) the failure to achieve positively valued goals (e.g., monetary success, socially desired gender role), 2) the actual or anticipated removal of positively valued stimuli (e.g., unemployment, fractured relationship with a loved one, death of a loved one), and 3) the presentation of negatively valued stimuli (e.g., abuse, discriminate treatment, poor academic grade)

Characteristics of strain most likely to lead to delinquency. After much criticism, Agnew (2001) expanded his theory by identifying four characteristics of strains that are most likely to result in crime. Strains are criminogenic when they are seen as unjust, are perceived high in magnitude, are associated with low self-control, and create pressure or incentives for criminal coping. Not every strain will meet all criteria (Kubrin, Stucky, & Krohn, 2009). Some strains may be more criminogenic than others, such as abuse. In his examination of these four conditions, Agnew (2001) posits the more characteristics experienced the more likely one will respond to the negative life event with delinquent behavior. The absence of just one of the characteristics reduces one's inclination to use delinquent behavior as a coping technique. It is important to mention when examining these four characteristics, one should not assess the criminogenic effects of these characteristics cumulatively. One should, as Agnew (2001) argues, measure the criminogenic effects of individual strains separately based on these four characteristics.

Empirical status of general strain theory.

Numerous studies have found support for the association between negative life events, negative emotionality, and criminal behavior (Agnew, 1992, 2001, 2006; Agnew et al., 1996; Broidy & Agnew, 1997; De Coster & Zito, 2010; Ganem, 2010; Francis, 2014; Hay, 2003; Hay & Evans, 2006; Higgins, Piquero, & Piquero, 2011; Moon &

Morash, 2014; Ostrowsky & Messner, 2005; Stucky, & Krohn, 2009). One of the earliest tests of the role negative emotionality plays in the nexus between strain and delinquent outcomes was Agnew's (1985) early test of general strain theory. He found that those with high scores for anger in the Youth in Transition survey were enraged and resentful towards others. As a result, they often displayed antisocial behavior toward parents and others. Considering his findings, Agnew noted that delinquent outcomes typically occur as a result of anger. Moreover, he posited the use of illegitimate coping techniques seem to alleviate the pressure one feels when experiencing strain, at least temporarily. Thus, crime and delinquency is used to cope with negative emotions, therefore reducing strain.

Using data from the National Survey of Children (NSC), Hay and Evans (2006) examined the effects of victimization on later involvement in delinquency. The sample was developed over two separate interviews in 1976 and 1981 to nationally represent youth, other than blacks who were over sampled, which yielded an overall sample of 1,423 respondents. Although Agnew (2001) suggests strain often has a short term effect, the researchers found victimization is a distinct form of strain that has long-term criminogenic effects. Hay and Evans (2006) discovered victimization was a significant predictor of violent-property crime, general delinquency, and substance use. The uniqueness of victimization as a form of strain is validated by the victimization literature (Agnew, 2002; Menard, 2000; Macmillan, 2001; Mersky & Topitzes, 2010; Kilpatrick et al., 1987; Miller, Cohen, & Wiersema, 1996; Smith et al., 2013; Topitzes, Mersky, & Reynolds, 2011).

Considering anger, low self-control, and poor attachment to parental figures, subjects possessing feelings of anger and low self-control significantly were more likely

to engage in serious delinquent behavior (Hay and Evans, 2006). Anger and self-control were also significant predictors of substance use, but to a lesser degree. Poor attachment to parents had a negative relationship with delinquent outcomes. Based on their findings, Hay and Evans (2006) found support in Agnew's (2001, 2006) claims concerning one's reliance on illegitimate means of coping when a strained relationship between a parental figure, negative emotionality, and low constraint are present.

General strain theory, gender, and crime. Agnew's original general strain theory model was intended as gender neutral. However, critics did not accept this notion (for example, see Burton, Cullen, Evans, & Dunaway, 1994, p. 231). Broidy and Agnew (1997) examined the utility of GST in explaining the gender gap in offending and why females offend. They hypothesize strains are more likely to induce anger, hostility, and resentment among males putting them at a higher risk of poor responses to strain. Anger will then lead to lower levels of empathy and moral outrage. Finally, the lower levels of empathy and moral outrage are posited to result in violent and non-violent crime. Broidy and Agnew (1997) further hypothesize females are more likely to respond to strain with depression turning their negative emotions inward instead of displacing those negative feelings onto others. Some females may experience anger as a result of strain. However, they may be more likely to experience depression resulting in the use of drugs and property offenses as a coping technique.

Though much is still to be learned about gender differences in delinquent and criminal outcomes, there appears to be support for Agnew and Broidy's (1997) hypotheses. Research suggests there are gender differences in both the development and use of antisocial responses to stress. Lahey, Waldman, and McBurnett (1999) examined

how biological, individual, and social factors assist in the development of antisocial behavior. The researchers found males are more likely to engage in aggressive responses to stress. Females were shown to use less aggressive responses to stress. Lahey, Waldman, and McBurnett posit one reason for the gender difference is that females as young as preschool age are shown to possess more empathy and guilt than males, and parents use more punitive forms of punishment for boys than for girls. Therefore, boys may be at a higher risk of being presented with noxious stimuli from parents than females.

Building on the work by Broidy and Agnew (1997), Hay (2003) used survey data collected from a sample of 182 adolescents (gender ratio 1:1) to assess the gender gap in delinquency. Testing three hypotheses made by Broidy and Agnew, Hay discovered different ways males and females experience and respond to strain produced by the family. Though the relationship between gender and exposure to family strain was found insignificant, unfair discipline and non-intact family were more of a strain for females, whereas physical punishment and parental rejection were more of a strain among males. Males on average experienced physical punishment 50 percent higher. Anger was a common response for both males and females when confronted with family strain. Strain coupled with feelings of anger was associated with delinquent behavior. The association was much stronger for males than females. These findings are similar to Broidy's (2001) analysis of gender differences in emotional responses to strain, which found that males presented higher levels of anger and a stronger disposition to deviant behavior than females.

Analyzing data from a sample of 385 U.S. Southeastern middle school students, De Coster and Zito (2010) found a significant relationship between negative emotionality and delinquency. Males and females were equally as likely to express their negative emotions through delinquent behavior. Both males and females experienced anger and depression. However, males were more inclined to engage in delinquent behavior than females when depression was present. This suggests unlike guilt, depression may exacerbate anger among males, not females. Moon and Morash's (2014) study of gender differences in emotional responses to strain also yielded support for gender different responses to strain. Specifically, males reported higher levels of anger which explained their involvement in violent and property offense, whereas females reported higher levels of status offenses which explained their involvement in less aggressive delinquency, such as status offending.

Analyzing data from a stratified sample of 1,915 racially and ethnically diverse adolescents aged 11 to 19 in Chicago households, Francis (2014) sought to explain how internalized negative emotions (i.e., depression and anxiety) condition the interaction between five measures of strain and anger to effect gendered delinquent responses. In line with observations made by Warr (2002) and Snyder and Sickmund (2006), Francis observed that the perceiving or experiencing of violence was more prevalent among males. It was also observed that sexual assaults, greater loss of loved ones, school strain, and fear of violent victimization was most prevalent among females, which is in accordance with prior research (De Coster, 2005; Scarpa, 2003; Skogan & Maxfield, 1981; Warr, 198). Inconsistent with Broidy and Agnew's (1997; Broidy, 2001) assumptions, depression and anxiety did not affect girls' inclination toward drug use.

Females had lower reports of violent delinquency, which may be due to depression and anxiety interacting with anger. In the case of males, there was no interacting effect of depression and anxiety on anger. Depression and anxiety only interacted with substance use. The higher levels of depression and anxiety males reported, the stronger the association between strain and frequency of substance use.

Applying GST to Bullying Victimization

Attention to bullying victimization within the scope of GST most notably emerged after the expansion and elaboration of GST in which Agnew (2001) suggested “peer abuse” is a significant predictor of delinquent and criminal outcomes. Agnew, Brezina, Wright, & Cullen (2002) used the National Survey of Children to determine why some exposed to strain are more likely to rely on criminal coping than others. The researchers discovered that the link between peer abuse and delinquency depended on age. Externalized delinquent outcomes were common among older adolescents aged 12-16, especially if they were high in negative emotionality and low constraint. However, the researchers did not find a significant effect of peer abuse on delinquency among younger adolescents. Agnew and colleagues suggest older adolescents may be more capable of responding to peer abuse aggressively due to the lack of parental support with coping and increased exposure to delinquent coping, whereas younger adolescents may be less capable of externalizing behavior. When younger adolescents responded to peer abuse, they were more likely to utilize a more internalized form of deviance, such as drug use in response to depression.

Bullying victimization is posited as a major source of strain for some youth (Agnew, 2001). In addition, it is posited as a source of significant negative effects on

psychological health that puts one at a significant risk of delinquent coping (Olweus, 1993). Many forms of bullying (e.g., aggressive, verbal, relational, indirect, cyber) are considered criminogenic in that they increase the risk of the use of coping strategies that do not result in a positive outcome for the victim. One may rely upon “externalized” delinquent coping. These are aggressive acts committed against others. Alternatively, one may rely upon “internalized” delinquent coping. These are acts focused upon oneself with the intent to harm or alleviate the negative affective states derived directly from the strain (Tenenbaum, Varjas, Meyers, & Parris, 2011). Coping strategies may entail the use of drugs to alleviate emotional and psychological distress (Agnew, 2001, 2006; Hay, 2003; Ostrowsky & Messner, 2005) or more extreme coping techniques (Agnew, 2001, 2006; Hay & Evans, 2006) such as violent behavior (e.g., assault) that is used to alleviate psychological pressure that may be directed at the actual source of strain or surrogate of the primary source of strain (Agnew, Brezina, Wright, & Cullen, 2002; Mazerolle & Piquero, 1997; Mazerolle, Piquero, & Capowich, 2001).

There are three reasons, according to Agnew (1992, 2001), and Hay (2003), for the use of delinquent and criminal behavior as a coping mechanism for bullying victimization. Crime and delinquency may be a means of removing oneself from the environment where the adverse treatment is present. As an alternative explanation, one may use illegitimate means to retaliate and get back at the individual(s) presenting the noxious stimuli. In some cases, the person receiving the retaliation may be a surrogate. One may choose to commit a violent act against someone who represents the source of noxious stimuli in order to relieve negative emotions resulting from the strain. The use of drugs and other non-violent behavior may be one’s way of coping with the anger directly.

By using drugs, they are able to suppress negative emotions, rather than addressing interpersonal problems.

Victims of bullying may respond to strain with the use of coping strategies in a legitimate manner. Some victims are more likely than others to cope with strains through non-criminal coping when the costs are perceived as too high to cope in an illegal manner or one may possess the ability (e.g., resources, intelligence, problem solving skills) to cope in a legal manner (Agnew, 2006). One may rely upon problem-focused coping techniques (e.g., counseling) in order to discover a positive solution to stress management, which may provide extra resiliency to deleterious outcomes of bullying victimization (Baldry & Farrington, 2005).

Gender Specific Responses to Bullying Victimization. Though GST has received a substantial amount of empirical attention, it remains fairly unclear from the perspective of GST the gender differences in how one experiences and copes with bullying victimization. Drawing attention upon this void in GST research, Cullen, Unnever, Hartman, Turner, and Agnew (2008) examined the impact bully victimization within the school environment has on substance use and juvenile delinquency. The researchers discovered victims of school bullying were more likely to engage in delinquent behavior and substance use, even after controlling for low self-control, antisocial attitudes, parent and school attachment, and coercive parenting. Though Brody and Agnew (1997) posit males are more likely to respond to strain with wayward conduct, the results in the Cullen et al revealed a relationship between victimization and delinquency existed among both males and females. The results further indicated the relationship between victimization and substance was present among males. Being bullied as a female had no effect on

substance use. It is also fairly unclear why male victims of school bullying were more likely to rely on illegal substance use as a coping technique. According to Warr (1993), adolescent boys may be more prone to substance use due to increased access to drugs. The Substance Abuse and Mental Health Services Administration (2006) suggests males tend to engage in drug related behaviors at a younger age than females.

In a similar study, Hay, Meldrum, and Mann (2010) drew upon recent bullying research to examine gender differences in the relationships between externalized and internalized responses to bullying victimization. Their analysis revealed adolescent victims of traditional bullying (physical and verbal harassment) are at a high risk for both externalized delinquency (delinquent acts committed against another) and internalized delinquency (self-harm and suicidal ideation). Traditional bullying had greater effects on internalized delinquency than externalized delinquency. Their analysis further revealed there were no gender differences in the extent of exposure to traditional bullying victimization. Therefore, if bullying victimization was to produce gender differences in delinquent outcomes it is not due to the extent of their exposure. Instead, the differences would be the result of one's response to traditional bullying. Contrary to Cullen et al.'s (2008) study, there were no significant moderating effects of gender. The effect of traditional bullying on externalized and internalized delinquency was similar across gender groups with the effects of traditional bullying being greater for suicidal ideation and self-harm than externalized delinquency. These results contradict gender specific GST arguments made by Broidy and Agnew (1997) in which there are gender differences in responses to verbal and physical peer abuse. Theorized by Broidy and Agnew, males are expected to externalize rather than internalize their delinquent behavior when coping

with strain. These inconsistent results justify the need for additional research to clarify gender specific responses to traditional bullying victimization.

Parents as Protective Factors

Parents play an integral role in youths' resilience to negative outcomes associated with bullying. Resilience refers to overcoming negative life events through a multi-dimensional process consisting of individual factors (e.g., problem solving, empathy), relationship factors (e.g., perceive social support, peer acceptance, positive parenting), community contexts, (e.g., avoidance of violence, access to education), cultural factors (e.g., religious affiliation), and physical ecology factors (e.g., access to a healthy environment) (Alvord & Grados, 2005; Zolkoski & Bullock, 2012). According to Masten and Coatsworth (1998), there are numerous ways one may conceptualize resilience and positive outcomes. For the scope of this thesis, resilience will refer to achieving positive outcomes irrespective of challenges associated with bullying victimization (Alvord & Grados, 2005, Masten, 2001) and resisting the use of illegitimate coping techniques linked to the risks involved with bullying victimization.

Resilience among bully victims can depend on many influential factors. Research indicates family indicators such as interactive protective factors, parental support, and parental control, as well as risk-based protective factors age, race, gender, and house, hold structure, play an integral role in the nexus between bully victimization and delinquent internalizing and externalizing behaviors (refer to Agnew, 2001, 2006; Farrington & Ttofi, 2011; Hemphill, Tollit, & Herrenkohl, 2014; Wang, Iannotti, & Nansel, 2009). Resilience can be increased by protective factors but inhibited by risk factors (Zolkoski & Bullock, 2012). High positive support and control by parents is

especially protective for White and Black males younger than 13 years old (Hemphill et al., 2014).

As Agnew (2001, 2006) suggests, negative stimuli associated with low social support and control due to rejection or lack of attachment by parents increases the risk of illegitimate methods of coping. General strain theory suggests this may be due to the reduction of costs, lack of supervision, lack of parental instruction of positive coping techniques and pro-social behaviors, and lack of investment in conventional norms, in addition to other things. The presence of social control is less likely when there is a lack of emotional bond between children and parents, thus making it more difficult for youth to exercise resilience.

Support can be distinguished by the assumption that human nature is good and positive expressive and instrumental support help people. Parental support is often characterized by warm parenting style, provide autonomy, acceptance, advice giving, provide needs for love and affection, esteem and identity. Control contends that wayward conduct is natural and those delinquent urges must be curbed by restraining perceived negative influences. Parental control is often characterized by direct control over behaviors and emotional bond/attachment to conventional others. It is assumed that parental support and control can protect those exposed to strain by providing resilience to delinquent outcomes.

Parental Support, Parental Control, and Bullying Victimization. Protective factors have the power to alter potential negative outcomes if implemented at the correctly. It is believed that expressive and instrumental parental support and higher levels of consistent parental supervision and limit-setting (control) have great potential to

promote positive emotional and behavioral resilience to peer abuse (Bowes, Maughan, Caspi, Moffitt, & Arseneault, 2010). Studies have suggested that the perception of higher levels of parental support and control is positively related to adolescent well-being (Bowers, Smith, & Binney, 1994; Demaray & Malecki, 2003). Barlow and Decker (2010) posit parental intervention can dramatically reduce the negative effects of strain among adolescent victims of peer abuse. Doing so would allow parents to take on the role of “strain responders.”

Though research has examined the effect of social support and control on negative outcomes (Demaray & Malecki, 2003) and prevention strategies for bullying victimization (Rothon, Head, Klineberg, & Stansfeld, 2011), a limited amount of research has examined parental support and control as a protective factor mitigating delinquent outcomes from bullying victimization. Early studies commonly focused on the direct bully victimization-delinquency relationship and ignored family processes (Demaray et al., 2013; Espelage & Swearer, 2003). Based on recent literature, findings suggests social support and control mitigates negative outcomes of bullying (Camodeca & Goossens, 2005; Grant et al., 2000; Matsunaga, 2009; Tennenbaum, Varjas, Meyers, & Parris, 2011).

Suggested by Cohen and Hoberman (1982), social support can assist in the development of positive psychological and behavioral outcomes among youth experiencing significant stress from negative life events. As Wilson and Herrnstein (1985) argue, positive, supportive parenting increases attachment and care between the adolescent and parent, thus strengthening parental control over the youth. Poor parental knowledge, openness, and action towards bullying victimization (Demaray, Malecki,

Secord, & Lyell, 2013; Matsunaga, 2009) raises concern highlighting an important problem area researchers, advocates, and policy makers need to place focus.

Cullen (1994) suggests the lack of social support increases the likelihood of strains producing delinquent outcomes. When youth perceive poor social support, one may reflect upon one's situation and assume support from parents will never be present leading one to presume the use of illegitimate forms of coping are the only techniques available to reduce strain (Curtis, 1988). Rigby (2000) reported from the analysis of the effect of perceived social support on adolescent victims of peer abuse that persistent peer abuse associated with perceived low parental support contributed to negative outcomes. Victims who perceived moderate parental support reported more positive behavioral outcomes and general psychological well-being. Parents as strain responders are an important source of social control reducing bullying victimization. However, some research indicates too much parental control characterized by over protection may put youth at an increased risk of peer abuse, thus putting youth at a higher risk of delinquent coping (Berdondini & Smith, 1996; Duncan, 1999). Conceptualizing parental control as parental knowledge of adolescents' friends, location, and activities, Boel-Studt and Renner (2013) reported moderate parental control was associated with a lower risk of peer victimization. But as parental control increased, it became more of a disruption to adolescent's daily lives. Youth who reported higher levels of parental supervision also reported an increase in bullying victimization. The study further indicated gender interacts with the relationship between parental control and bullying victimization. Boys who reported overprotective parents at a higher risk of psychological peer abuse, whereas girls were at a higher risk for both physical and psychological peer abuse.

Rothon, Head, Klineberg, and Stansfeld (2011) indicate family support can have differential effects on psychological and behavioral outcomes depending on the gender of the victim. The researchers suggest it is important for parents to initiate positive support among young boys. The reason being, girls generally receive differential treatment within the household. Girls are more likely to receive support from the family. Further, girls are more likely to seek out support to reduce strain. Irrespective of gender, the researchers indicate good family management including the positive support within the household lowers the risk of internalizing behavior (e.g., substance abuse) and externalizing behaviors (e.g., violence) among victims of bullying.

Research Hypotheses

Research hypotheses were developed based on assumptions made by Agnew and others regarding the role family level protective factors play in the relationship between pre-adolescent bully victimization and negative outcomes. This thesis will test three research hypotheses to examine whether parental support and parental control alleviate the negative effects of bully victimization (refer to Figure 1). **Hypothesis # 1: *Bully victimization during pre-adolescence is positively related to delinquent outcomes.***

Hypothesis # 2: *The effect of family processes on delinquent outcomes depends on having a history of being bullied, such that the effect of a positive family environment will be greatest among those who have been bullied.* The final hypothesis focuses on gender differences in the effects of bullying victimization on delinquent outcomes.

Hypothesis #3: *I expect the protective effect of positive family environment to have the greatest impact on delinquency outcomes for girls.*

CHAPTER 3

METHODOLOGY

The purpose of the current study is to apply general strain theory (GST) in the examination of whether parent variables moderate the effect of bullying victimization on delinquent outcomes. In other words, does a positive family environment during adolescence affect whether victims of bullying participate in delinquency? The prior chapter specified three testable hypotheses, and they are: 1) bully victimization during pre-adolescence is positively related to delinquent outcomes, 2) the effect of family processes on delinquent outcomes depends on having a history of being bullied, such that the effect of a positive family environment will be greatest among those who have been bullied, and 3) the protective effect of positive family environment are expected to have the greatest impact on delinquency outcomes for girls. It is expected those who are victims of bullying during adolescence will have a stronger inclination towards delinquent outcomes. Further, it is expected positive support and control from the victim's parents will moderate the negative effects of bullying, especially among female victims. These assumptions will be analyzed and tested in order to determine if bullying victimization and parental factors contribute to the cultivation of violent and non-violent delinquent behavior

Data Source

Overview of NLSY97

Data come from the National Longitudinal Survey of Youth 1997 (NLSY97). The NLSY97 is a nationally-representative survey of youth aged 12 to 16 as of December 31, 1996 (Bureau of Labor Statistics, 2005). Information collected in the NLSY97 focuses on labor market experiences, school-to-work transitions, and community and work backgrounds. Researchers further gather information on religion, sexual experiences, drug and alcohol use, criminal history, relationship with parents, and other sensitive topics (Bureau of Labor Statistics, 2005). Though initially designed to allow in-depth investigation into educational and labor market activities, the data are suited to the current study due to the availability of longitudinal information on youth's history of bullying victimization, family environment, and delinquency. For a more complete, detailed description of the NLSY97, one may refer to the 2005 NLS Handbook.

NLSY97 Survey Design

In 1997, the Bureau of Labor Statistics began a longitudinal survey studying a youth cohort aged 12 to 16 as of December 31, 1996 (Bureau of Labor Statistics, 2005). In order to develop a nationally representative study representing youth born between 1980 and 1984 who resided in the United States in 1997, the researchers randomly selected and screened 75,291 households in 147 primary sampling units to identify youth eligible for sampling by age, gender, race, and ethnicity (Bureau of Labor Statistics, 2005). Researchers oversampled Black and Hispanic youth. After initial screening for eligible youth, 8,984 resident youth participated in the first round of data collection.

NLSY97 Data Collection

The NLSY97 is an annual survey conducted in person or, in some cases, via telephone. Youth are interviewed using a computer-assisted personal interviewing system, also known as CAPI (Bureau of Labor Statistics, 2005). The computer based system uses a system of checks during the interview and overtime from round-to-round to reduce inconsistency in the data and data-entry errors, thus allowing the researchers to implement a questionnaire with a more intricate design than paper-and-pencil questionnaires (Bureau of Labor Statistics, 2005). For example, if a respondent indicated they have never used marijuana but reported they did in one of the prior interviews, the system responds with questions immediately to check for inconsistency in the response and allows the respondent to either adjust their answer or explain the inconsistency in the data.

Certain sections of the questionnaire consist of sensitive areas such as one's engagement in physical violence and substance use. These sets of questions are presented through an audio computer-assisted self-interview (ACASI) method to increase respondent anonymity (Bureau of Labor Statistics, 2005). The respondent enters one's response to sensitive questions directly into the system without the interviewer having the ability to link the active responses to the respondent. The use of ACASI allows the respondents to read the questions directly from the screen or through a set of headphones, thus allowing respondents the ability to feel more comfortable responding to sensitive questions that may embarrass one and cause psychological distress (Bureau of Labor Statistics, 2005). The use of computer-assisted interview techniques have the ability to allow respondents to be more forthcoming and truthful in their responses, therefore

improving validity in the research and richness of data (Kissinger, Rice, Farley, Trim, Jewitt, Margavio, and Martin, 1999; Randolph, Virnes, Jormanainen, and Eronen, 2006).

Subsample

The current study uses a sub-sample of youth aged 12 and 13 at the time of the first interview. Limiting the subsample to 12 and 13 year olds allows the examination of the parental support and control as a mitigating factor in the bullying victimization-delinquency relationship during the entire adolescence period. An additional 40 age-eligible youth who reported not living with a parental figure were excluded from the analysis. This resulted in a final sample size of 2,849.

Some cases were identified as missing from bullying victimization, late adolescent delinquency, and family processes variables. Cases were declared missing due to refusal, do not know, ineligibility, or non-interview. At most, 8 percent were missing. Therefore, missing cases were deemed not a huge problem and were dealt with using list wise deletion.

Variables

Dependent Variables

The outcome of interest in this study is late adolescent delinquency, which was measured by responses to three questions in round five of data collection (2001 interview) regarding respondent marijuana use, cocaine/hard drug use, and physical violence during the approximately one year period since the last interview. At the time of the interview, respondents were 17 to 18 years old.

Marijuana use was indicated by asking youth if they used marijuana, grass, or pot, even if only once, since the date of the last interview. Use of marijuana was

dichotomized and coded as 1 if the respondent reported using marijuana since the last interview date, otherwise the response was coded as 0.

Hard drug use was indicated by asking youth if they ever used cocaine, heroin, or any other hard drug not prescribed by a doctor since the date of last interview. Hard drug use was dichotomized and coded as 1 if the respondent reported using cocaine, heroin, or any other hard drug since the last interview date, otherwise the response was coded as 0.

Physical assault was indicated by asking youth if they attacked someone with the idea of seriously hurting them or have had a situation end up in a serious fight or assault of some kind since the last interview date. Physical assault was dichotomized and coded as 1 if the respondent reported attacking someone or a situation that ended up in a serious fight or assault since the last interview date, otherwise the response was coded as 0.

Independent Variable

The independent variables analyzed fall into three categories: primary independent variable, control variables, and conditioning variables. The primary independent variable is the main variable concerned with the hypotheses tested in the current study: bullying victimization. The control variables included those variables traditionally found within criminal justice research, and they are age, gender, race, and household structure. The conditioning variables included two family environmental factors Agnew (2006) suggests are important variables in the strain crime relationship (Agnew, 2006): parental control and parental support.

Bullying Victimization. The primary independent variable of interest in this study was bully victimization. *Bully victimization* was measured by asking respondents if they were the victim of repeated bullying before they turned age 12. Bully victimization was

dichotomized and coded as 1 if the respondent reported being the victim of repeated bullying, otherwise the response was coded as 0.

Control Variables

The control variables are gender, race, and household structure. *Gender* was recoded into a dummy variable, where female was coded as 1 and male was coded as 0. *Race* consisted of Black, Hispanic, and non-Black and non-Hispanic (reference category). *Household structure* was conceptualized as the respondents' relationship to the household parent figure at the time of the interview in 1997. The categories were recoded to include three categories: intact biological, blended, and single parent. Since the difference between a household consisting of biological parents and single parent household is of interest, a series of two dummy variables were created with single parent household as the reference category.

Conditioning Variables

Deemed by Agnew (2006) as integral in the strain-crime relationship, the current study examines parental control and parental support as conditioning variables on the bully victimization-delinquency relationship. Two sets of conditioning variables were created to tap into parental support and control during adolescence from age 12 to 16 (measured from 1997 to 2000).

Parental control was tapped in two ways: parental limit-setting and supervision. Parental limit-setting was conceptualized as the extent to which parents set limits on youth behaviors and activities rather than youths setting limits themselves. Parent limit-setting created from three questions about who sets limits with regards to curfew, what they watch for television and movies, and who the respondent hangs out with. Responses

in 1997, 1998, and 1999 were averaged to create a limit-setting scale.¹ Limit-setting scales were recoded so responses ranging from 3 refer to youth setting limits to 9 for parents setting limits. so that low values indicate respondent set the limits, middle values indicate both parents and youth set the limits, and high values indicate parents sets the limits.

Parental supervision was conceptualized to indicate the extent residential mothers and fathers keep track of their child's everyday life (Eaton, Krueger, Johnson, McGue, & Iacono, 2009). Parental supervision was created from four questions regarding youth perceptions of their parents' knowledge about their close friends, who they are with when not at home, their teachers, and their close friends' parents (0= knows nothing to 4 = knows everything). Responses for each parent were averaged to create an overall indicator of parental supervision between 1997 and 2000.

Parental support was conceptualized as youth perception of parental supportiveness. Each year youth were asked whether each parental figure was very supportive, somewhat supportive, or not very supportive. Parental support consists of the number of 'very supportive' parent figures reported between 1997 and 2000, averaged.

Statistical Analyses

Because marijuana use, hard drug use, and physical violence were all dichotomous measures of delinquency, the hypotheses for this study were tested via binary logistic regression (DeMaris, 1995). Logistic regression models were used to estimate the effects of the independent variables on the probability of participating in delinquent behavior (Lottes, DeMaris, & Adler, 1996; Park, 2013).

¹ The measures of parental limit-setting were not included during the 2000 interview. Limit-setting for mid-adolescence was measured using only the 1999 interview.

The following steps were repeated for each outcome variable:

The first hypothesis states that bully victimization during pre-adolescence is positively related to delinquent outcomes. To estimate the impact of bullying victimization during adolescence, the first model included the indicator of bullying victimization with control variables. To test hypothesis two, which states that the effect of family processes on delinquent outcomes depends on having a history of being bullied, such that the effect of a positive family environment will be greatest among those who have been bullied, the second model adds the indicators family control, supervision, and support, and the third model adds the cross-products indicators of family environment and bullying victimization. Finally, to examine hypothesis three, which states that the protective effect has the greatest impact for girls, model four includes three-way interactions of indicators of family environment, bullying victimization, and gender.

CHAPTER 4

RESULTS

Univariate Analyses

Demographics

As shown in Table 4.1, the subsample on average was predominantly White ($M=.55$, $SD=.50$) males ($M=.52$, $SD=.50$) residing in an intact biological (both biological parents) household ($M=.54$, $SD=.50$). Nearly 52 percent ($n=1,471$ youth) of the 2,849 respondents considered oneself as male, whereas 48.4 percent ($n=1,378$ youth) considered oneself as female. Just over half of the subsample identified oneself as White ($n=1,505$ youth). Nearly 45 percent of the rest of the sample identified oneself as either Black ($n=701$ youth) or Hispanic ($n=615$ youth). On average, respondents were more likely to reside in an intact household. Just over 54 percent ($n=1,459$ youth) of the subsample claimed to live with both biological parents. Other than living with both biological parents, only 32 percent ($n=867$ youth) indicated living with only one parent. Blended households were less common among the subsample ($M=.14$, $SD=.34$).

Bullying Victimization

Among the subsample, 99.8 percent ($n=2,843$ youth) responded to the question regarding bullying victimization. Of those youth who responded, 19.8 percent of the

subsample (n=564 youth) indicated during the round 1 interview they had been the victim of repeated bullying before age 12.

Late Adolescent Delinquency

An examination of late adolescent delinquency variables revealed roughly 92 percent responded to the questions regarding marijuana use (n=2,616 youth), cocaine and hard drug use (n=2,613 youth), and engagement in physical assaultive behaviors (n=2,618 youth). Of those youth who responded, just over 26 percent of the subsample (n=687 youth) indicated they had used marijuana since the last interview.. Of those youth who responded, nearly 8 percent of the subsample (n=192 youth) indicated they had used cocaine or another hard drug since the last interview. For physical assaults, 8.1 percent (n=231 youth) missing due to refusal, do not know, ineligibility, or non-interview. Of those youth who responded, nearly 7 percent of the subsample (n=183 youth) indicated they had physically attacked someone since the last interview date.

Parental Control and Support

On average, youth found their parents to be more accommodating when setting limits (see Table1). With a mean of 5.8 (SD=1.18) parents and youth tend to mutually decide what limits are set. It appears parents were more accommodating to the youth and took less control over limit-setting during adolescence. With a mean of 2.31 (SD=.66) for parental supervision during adolescence, the data suggests parents possess some knowledge regarding their youth's everyday life, whereabouts, school, adaptations, and activities. Youth on average possessed 2.31 (SD=.66) very supportive parental figures between 1997 and 2001.

Bivariate Analyses

Bivariate analyses were conducted to examine correlations among bullying victimization, indicators of late adolescent delinquency, indicators of parental support and control, and control variables. The analyses are presented in Table 4.2. The current study uses the Pearson product moment correlation coefficient.² The bivariate analyses indicated bullying victimization was significantly correlated with both marijuana use and physical assault at the $p < 0.01$ level.

Correlations among family process variables and late adolescent delinquency were examined. An assessment of the potential relationships revealed statistically significant negative correlations between indicators of parental support, parental control (limit-setting and supervision), marijuana use, and hard drug use at the $p < 0.001$ level. Though the family process variables were correlated with physical assault, only parental support and supervision were significantly correlated with physical assault at the $p < 0.001$ level.

Assessing the potential relationships between indicators of parental support and control, the bivariate analysis revealed statistically significant correlations between all parental control and support variables at the $p < 0.001$ level. It is particularly important to note the correlation between indicators of parental support and control. As the literature suggests, parental support is associated with the present of parental control (see Cohen and Hoberman, 1982).

² Pearson product moment correlations were substantively similar to the results of the Chi-square and independent samples t-tests. Using the bivariate correlation matrix allows more parsimony when assessing potential relationships between variables.

Binary Logistic Regression Analyses

Regression of Marijuana Use

Table 3a and 3b presents the results of binary logistic regressions of the log odds of marijuana use four years after victimization. Model 1 included bullying victimization and demographic characteristics. Looking first at the results for bullying victimization, there is a highly significant and positive effect. Victims of bullying had an odds of marijuana use approximately 39 percent higher than non-victims. The effect of intact biological household is also significant but negative, indicating that those who reside with both biological parents had a 28.8 percent lower odds of marijuana use than those residing in single parent households. Racial and ethnic minority respondents also had a significantly lower odds of using marijuana. Specifically, the odds of marijuana use for those who identified as Black was 44.7 percent lower compared to Whites. The same was true for Hispanic respondents. Compared to Whites, Hispanic respondents had a 21.6 percent lower odds of reporting marijuana use.

Model 2 added indicators of parental support and control. Looking at the results for parental control, there is a highly significant and negative overall effect. Households with higher levels of parental control had a lower odds of marijuana use. A unit increase in parent limit-setting was associated with a 22.9 percent reduction in the odds of marijuana use. Households with higher levels of parental supervision also had reduced odds of marijuana use. A unit increase in parental supervision was associated with a 31.4 percent reduction in the odds of marijuana use. A unit increase in the average number of very

supportive parents was associated with a 17.2 percent reduction in the odds of marijuana use.

Model 3 added a two-way interaction between bullying victimization and each indicator of parental support and control. There were no significant two-way interactions between bullying victimization and parent limit-setting, parental supervision, and parental support.

The same is true for Model 4. The inclusion of three-way interactions between bullying victimization, female, and each family process variable resulted in a non-significant effect for each interaction. This finding suggests the relationship between bullying and parenting does not depend on gender.

Regression of Hard Drug Use

Table 4a and 4b presents the results of binary logistic regressions of the log odds of hard drug use four years after victimization. Model 1 included bullying victimization and demographic characteristics. An examination of the results indicate only intact biological household and race were significantly associated with hard drug use. The odds of reporting hard drug use for respondents residing in an intact biological household were 36.3 lower than respondents residing in a single parent household. As for Black respondents, they had an 85.7 percent lower odds of hard drug use compared to Whites. Model 2 added indicators of parental support and control. The effect of parental support was significant and negative, indicating on average a reduction in the odds of hard drug among those with more very supportive parents. A unit increase in the average number of very supportive parents was associated with a 17.2 percent reduction in the odds of hard

drug use. Looking at the results for parental control, there is also a highly significant and negative overall effect. A unit increase in parent limit-setting was associated with a 21.7 percent reduction in the odds of hard drug use. As for parental supervision, a unit increase in the level of supervision was associated with a 34.2 percent reduction in the odds of hard drug use.

Model 3 added a two-way interaction between bullying victimization and each indicator of parental support and control. Of all two-way interactions parent limit setting was the only interaction having a significant and negative effect on the odds of hard drug use. Figure 2 graphs the predicted probabilities of hard drug use for white youth who reside in intact biological households with average levels of parental supervision and supportiveness. As illustrated graphically, the effect of bullying victimization depends on parent limit setting. Bullied adolescents who set the limits have a higher probability hard drug use. When parents set more of the limits on behaviors, victims and non-victims of bullying have a similar probability of hard use. In particular, the effect of bullying victimization on hard drug use is diminished by a factor of $\exp(-0.503)=0.605$ for each unit increase in parent limit setting.

Model 4 added three-way interactions between bullying victimization, female, and each family process variable. The logistic regression analysis indicated a non-significant effect exists for each three-way interaction. This finding suggests the relationship between bullying and parenting does not depend on gender.

Regression of Physical Assault

Table 5a and 5b presents the results of binary logistic regressions of the log odds of hard drug use four years after victimization. Model 1 included bullying victimization and demographic characteristics. Bullying victimization had had a significant and positive effect on the likelihood of engaging in physical assaults. Compared to non-bullied victims, being bullied was associated with an 83.3 percent increase in the odds of engaging in physical assault. It is interesting that unlike marijuana and hard drug use, being female had a significant and negative effect on the likelihood of engaging in physical assault. Compared to males, the odds of engaging in physical assaults for females were 34.5 percent lower. Intact biological parent households also had a significant and negative effect. The odds of engaging in physical assaults for those respondents living in an intact biological household are 32.4 percent lower than those respondents residing in a single parent household.

Model 2 added indicators of parental support and control. Unlike marijuana and hard drug use, the average number of very supportive parents and parental supervision were the only statistically significant family process indicators. A unit increase in the average number of very supportive parents was associated with a 40.9 percent reduction in the odds of physical assault. The effect of parental supervision was also significant and negative, indicating a reduction in the odds of physical assault. A unit increase in parental supervision was associated with a 23.8 percent reduction in the odds of physical assault.

Model 3 added two-way interactions between bullying victimization and each indicator of parental support and control. There were so significant two-way interactions

between bullying victimization and parent limit-setting, parental supervision, and parental support.

The same was true for Model 4. Three-way interactions between bullying victimization, female, and each indicator of parental support and control resulted were non-significant. This finding suggests the relationship between bullying and parenting does not depend on gender.

Table 4.1: Univariate Analysis for all Variables (n=2,849)

Variables	Mean	SD
Control Variables		
Black	.22	.41
Hispanic	.21	.41
White	.55	.50
Male	.52	.50
Female	.48	.50
Intact Household	.54	.50
Blended Household	.14	.34
Single Household	.32	.47
Independent Variable		
Bullying Victimization	.20	.41
Dependent Variables		
Marijuana Use	.26	.44
Hard Drug Use	.08	.27
Physical Assaults	.07	.25
Conditioning Variables		
Parent Limit-setting	5.8	1.18
Parent Supervision	1.22	.62
Avg. Supportive Parents	2.31	.66

Table 4.2: Bivariate Correlation Matrix

	Bully Victimization	Marijuana Use	Hard Drug Use	Physical Assault	Parent Limit- setting	Parental Supervision	Parental Support
Bully Victimization	1	.064**	.031	.079**	-.017	-.072***	-.072***
Marijuana Use		1	.416***	.214***	-.160***	-.157***	-.094***
Hard Drug Use			1	.171***	-.095***	-.102***	-.074***
Physical Assault				1	-.014	-.092***	-.099***
Parent Limit- setting					1	.204***	.062***
Parental Supervision						1	.348***
Parental Support							1

*** $p < .001$ ** $p < 0.01$ * $p < 0.05$

Table 4.3: Binary Logistic Regression: Marijuana Use (n=2,849)

Variables	Model 1	Model 2	Model 3	Model 4
	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Constant	.498***	6.063***	1.629***	.259***
Independent Variable				
Bullying				
Victimization ^a	1.388*	1.339*	1.926	2.127
Controls				
Intact				
Biological ^b	.712*	.804	.807	.795*
Blended ^b	1.264	1.328	1.330	1.329
Female ^c	.857	.849	.847	.928
Black	.553***	.583***	.584***	.574***
Hispanic	.784	.766*	.765*	.763*
Family Process				
Variables				
Limit-setting		.771**	.778**	.779**
Supervision		.686**	.707**	.712*
Parental Support		.828*	.796*	.832

Table 4.3 continued

Variables	Model 1 Odds Ratio	Model 2 Odds Ratio	Model 3 Odds Ratio	Model 4 Odds Ratio
Two-Way Interaction				
Bullying*Limit-setting			.950	.851
Bullying*Supervision			.884	1.135
Bullying* Parental Support			1.183	1.066
Bullying*Female				.620
Female*Limit-setting				.997
Female*Supervision				.996
Female* Parental Support				.899
Three-Way Interaction				
Bullying*Female* Limit-setting				1.339
Bullying*Female* Supervision				.556
Bullying*Female* Parental Support				1.440
Nagelkerke R ²	.031	.085	.086	.090
Hosmer and Lemeshow				
X ²	2.459*	21.593	15.057*	11.166*

a. Reference category is Not Victimized by Bullying.

b. Reference category is Single Parent Household.

c. Reference category is Single Parent Household.

d. Reference category is Male

*** $p < .001$ ** $p < 0.01$ * $p < 0.05$

Table 4.4: Binary Logistic Regression: Hard Drug Use (n=2,849)

Variables	Model 1	Model 2	Model 3	Model 4
	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Constant	.126***	5.655***	1.177***	.359***
Independent Variable				
Bullying				
Victimization ^a	1.349	1.268	5.948	1.600
Controls				
Intact				
Biological ^b	.637*	.755	.768	.741
Blended ^b	1.032	1.093	1.080	1.079
Female ^c	1.041	1.036	1.042	.492
Black	.143***	.149***	.146***	.138***
Hispanic	.857	.823	.806	.796
Family Process Variables				
Limit-setting		.783**	.877	.765*
Supervision		.658*	.670*	.732
Parental Support		.750*	.606*	.714

Table 4.4 continued

Variables	Model 1 Odds Ratio	Model 2 Odds Ratio	Model 3 Odds Ratio	Model 4 Odds Ratio
Two-Way Interaction				
Bullying*Limit-setting			.605*	.657
Bullying*Supervision			1.290	1.995
Bullying* Parental Support			1.736	1.322
Bullying*Female				25.335
Female*Limit-setting				1.344
Female*Supervision				.678
Female* Parental Support				.845
Three-Way Interaction				
Bullying*Female* Limit-setting				.745
Bullying*Female* Supervision				.395
Bullying*Female* Parental Support				2.231
Nagelkerke R ²	.058	.096	.107	.119
Hosmer and Lemeshow				
X ²	8.453*	8.656*	6.439*	5.590*

a. Reference category is Not Victimized by Bullying.

b. Reference category is Single Parent Household.

c. Reference category is Single Parent Household.

d. Reference category is Male

*** $p < .001$ ** $p < 0.01$ * $p < 0.05$

Table 4.5: Binary Logistic Regression: Physical Assault (n=2,849)

Variable	Model 1 Odds Ratio	Model 2 Odds Ratio	Model 3 Odds Ratio	Model 4 Odds Ratio
Constant	.091***	5.419***	1.700***	.302***
Independent Variable				
Bullying Victimization ^a	1.833**	1.732*	.522	.464
Controls				
Intact Biological ^b	.676*	.792	.803	.788
Blended ^b	1.062	1.101	1.100	1.112
Female ^c	.655*	.619*	.629*	.857
Black	1.273	1.226	.306	1.198
Hispanic	.728	.658	.658	.649
Family Process Variables				
Limit-setting		1.027	.999	.970
Supervision		.762*	.759	.796
Parental Support		.591**	.499**	.650

Table 4.5 continued

Variable	Model 1 Odds Ratio	Model 2 Odds Ratio	Model 3 Odds Ratio	Model 4 Odds Ratio
Two-Way Interaction				
Bullying*Limit-setting			1.094	1.107
Bullying*Supervision			1.046	1.133
Bullying* Parental Support			1.736	1.381
Bullying*Female				1.249
Female*Limit-setting				1.094
Female*Supervision				.913
Female* Parental Support				.461*
Three-Way Interaction				
Bullying*Female* Limit-setting				.984
Bullying*Female* Supervision				.777
Bullying*Female* Parental Support				2.227
Nagelkerke R ²	.034	.062	.066	.074
Hosmer and Lemeshow				
X ²	4.726*	9.080*	16.496	6.710*

a. Reference category is Not Victimized by Bullying.

b. Reference category is Single Parent Household.

c. Reference category is Single Parent Household.

d. Reference category is Male

*** $p < .001$ ** $p < 0.01$ * $p < 0.05$

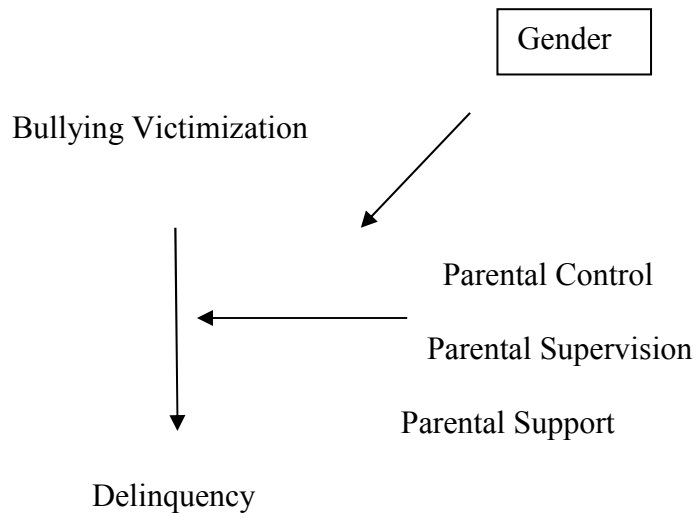


Figure 2.1: Theoretical Model

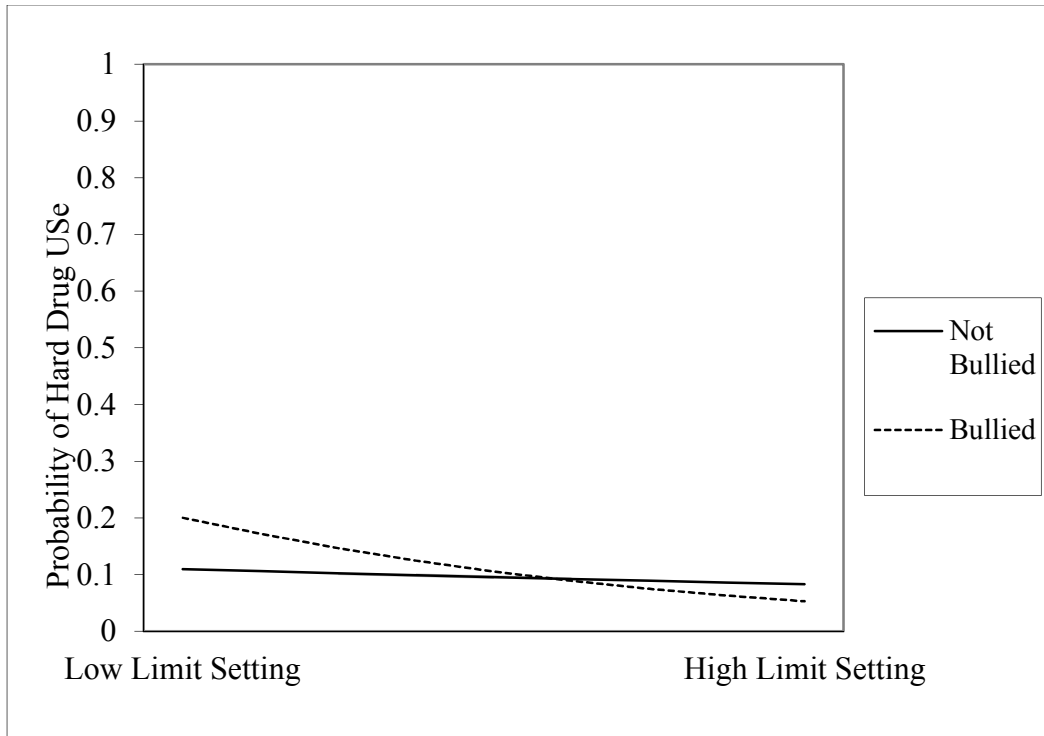


Figure 4.2: Interaction Bullying Victimization*Parent Limit-Setting

CHAPTER 5

DISCUSSION AND CONCLUSION

Cole (1975) suggests the key aspect of a theoretical paradigm is its ability to provide researchers the ability to look through any theoretical lens to develop and solve relative empirical questions to explain any social phenomena. Bullying victimization and the potential collateral consequences for adolescents of both genders is one area of research scholars have sought to explain through a variety of theoretical frameworks. Posited as a potential highly criminogenic form of strain (Agnew, 2001), general strain theory (GST) has renewed interest in developing a broader understanding of bullying victimization and potential alleviating factors that may reduce and prevent negative outcomes (Cullen et al., 2008). In line with general strain theory, the present study explored whether bullying victimization is positively related to delinquent outcomes, whether the effect of bullying victimization is attenuated for those with a positive family environment, and a number of potential interaction effects between bullying victimization and late adolescent delinquency.

Overall, the current findings provide modest support for the applicability of GST in the explanation of the bully victimization-delinquency relationship. The data analyses revealed that bullying victimization as a form of strain leads to delinquent outcomes. Specifically, bullying victimization has a small-moderate positive direct effect on the odds of engaging in marijuana use and physical assault. These two relationships

remained unyielding when indicators of family processes were included in the model. By examining bullying victimization in Wave 1 and late adolescent delinquency in Wave 5, the current study establishes temporal order. Though the temporal lag here surpasses the desired maximum time lag of 12 to 18 months, it is believed the present study captures lagged effects of bullying victimization on late adolescent delinquency (Agnew, 2001). Suggesting that peer abuse plays an integral part in the development of delinquent behaviors, the current findings contribute to the up-and-coming stress literature.

It is important to note that a small-moderate positive effect does not suggest the bullying victimization-delinquency relationship is insignificant. As suggested by Agnew (2006), strain does not exist independently in space and time. Instead, strain tends to coexist with other forms of strain – some producing more strain than others – creating a cumulative effect that contributes to one’s disposition to wayward conduct. In addition, the strain experienced from bullying victimization may lead those less prone to delinquency (e.g., intellectual academics) to engage in deviant behavior in order to remove oneself from the stressful environment or lash out seeking revenge against the source of strain. Environments where bullying is present may foster social learning (Agnew, 2001). Victims of bullying may attempt to mimic illegitimate coping strategies utilized by peers experiencing similar forms of strain.

There was no evidence that relationship between experiencing bullying victimization and substance use and violent behavior in late adolescence is moderated by family processes and/or gender, with the exception of the moderate-strong interaction effect between bullying victimization and parent limit-setting on likelihood of hard drug use. Boes-Studt and Renner (2013) found that higher levels of parental limit-setting

fostered wayward conduct due to parental control becoming more of a disruption in adolescents' lives. The present study provides evidence to the contrary. In support of GST, the positive effect of bullying victimization on hard drug use is attenuated when parents are setting the limits on adolescents' activities. This finding is notable since it implies researchers should look past direct effects between bullying victimization and delinquent outcomes in order to uncover what conditions produce a weaker effect of strain. Low social control exacerbates the criminogenic effect of strain (Agnew, 2001). Home environments characterized by low parental control are more likely exacerbate the criminogenic effect of strain due to low direct control, low attachment, and low commitment reducing the costs of crime and ability to cope in a legitimate way (Agnew, 2001).

Beyond the scope of bullying victimization, the current study's findings lend additional support for GST. The analyses suggest the possession of very supportive parents and higher levels of parental control reduces the likelihood of marijuana use and hard drug use. In addition, the likelihood of physical assault was reduced when the home environment was characterized by more supportive parents and higher levels of limit-setting on one's behaviors and activities. Very supportive parents and high parental control are identified by Agnew (2001) as a protective factor reducing the likelihood of illegitimate coping due to strain (see also Hirschi, 1969). These findings add to the emerging literature suggesting that home environments characterized by supportive parents and parental control play an integral role in reducing the likelihood of wayward conduct. To better understand how parental support and control foster resilience, future

research is needed to examine what specific forms of parental supervision and limit-setting may prevent or foster deviance.

Though the findings contribute to our understanding of the bullying victimization-delinquency relationship and moderating effects of family processes through the theoretical lens of GST, the conclusions made based on the current findings should be viewed through the limitations of the study. The NLSY97 is beneficial for researchers who desire the benefits of longitudinal data. The present study examined involvement in deviant behavior that may be in response to bullying victimization at a later point in time and space. Therefore, by capturing bullying victimization in Wave 1, family processes from Wave 1 to Wave 4, and late adolescent delinquency in Wave 5 the appropriate causal order is established (Lauritsen, Sampson, & Laub, 1991). By reporting experienced repeated bullying prior to age 12, the present study cannot guarantee other forms of strain are not contributing to reported late adolescent delinquency. As previously mentioned, Agnew (2006) suggests strains are not independent occurrences at one point in time and space. Instead, strains are often accompanied by negative affective states and other strains at another points in time that may create a cumulative effect. Therefore, the current study cannot guarantee the direct effect between bullying victimization (prior to age 12) and late adolescent delinquency (age 17-18) is not partially contributed to negative affective states (NAS) or other forms of strain not examined here. The relationship between bullying victimization and late adolescent delinquency may be the result of negative emotionality, in particular anger or depression, or another form of strain contributing more to the relationship as the effect of bullying victimization potentially becomes lost over time (Kubrin, Stucky, & Krohn, 2009). The NLSY97

provides a depression scale. However, the depression scale was not included into the questionnaires until the year 2000. Future research should identify negative affective states and other forms of strain frequently associated with bullying victimization in order to develop a full picture of the mechanisms involved in the bullying victimization-delinquency relationship.

It should also be noted that future research should examine a shorter temporal lag between bullying victimization and delinquency. By taking the approach to limit the temporal lag to approximately 12 to 18 months, one has the ability to match Agnew's theoretical argument that strains not only have a cumulative effect contributing to the long term collateral consequences of bullying on wayward conduct, but most strains result in a situational negative affective response that is often instant and short lived (Agnew & White, 1992; Agnew, 2001).

The perception of a negative life event is key to understanding situational responses. People perceive negative life events in different manners. One event may be highly stressful to one individual, whereas the same event may be less stressful to another. Based on the response to whether respondents were the victim of repeated bullying before age 12 (yes or no) and engaged in wayward conduct at the age of 17-18, the presence of strain was suggested based on the positive relationship between bullying victimization and late adolescent delinquency. Therefore, present study was unable to tap into respondents' perceptions of the degree to which bullying victimization was strainful due to the use of a binary operationalization of bullying victimization. At the age of 12 and 13 in 1997, it is unlikely youth truly understood the concept of bullying victimization. The use of a dichotomous measure of bullying victimization is an

inadequate assessment of bullying and should not be considered a true measure of bullying victimization. A simple categorization of victim and non-victim of repeated bullying ignores the complex nature of bullying victimization. Studies indicate victims may fall into the category of traditional bully victim, cyber bully victim, relational bully victim, bully-victim, and observer (Hay, Meldrum, and Mann, 2010; Moon, Hwang, & McCluskey, 2011). Some may not perceive some of their peers' actions as a form of bullying and thus, resulting in the underreporting of victimization. Parents and authority figures play a key role in the misunderstanding of bullying due to poor parental knowledge and involvement in educating youth about bullying (Olweus 1993; Nansel et al., 2001). Therefore, bullying victimization rates should be taken lightly for these statistics may not be true indicators of the issue (Shin-Kim, Leventhal, Koh, Hubbard, & Boyce, 2006). A more in-depth test of GST could address this issue in a direct manner by establishing a more in-depth measure of bullying victimization methods. Furthermore, GST could address this issue by tapping into the perception of strain as unjust, recency and frequency of the strain, strain high in magnitude, the presence of low levels of social control, and the pressure or incentive for criminal coping (Agnew, 2001).

Though the current study aimed to examine two-way and three-way interaction effects for the relationship between bullying victimization and late adolescent delinquency, only one two-way interaction effect emerged as significant. The use of surveys are often a classic method of testing classic and general strain theory, but it has been noted as a poor technique to tease out interaction effects (Agnew, 2006). An interaction effect is when the influence of one variable on another is dependent upon another variable (Kubrin, Stucky, & Krohn, 2009). Recall, the current study found that

the effect of bullying victimization on hard drug use was dependent upon parent limit-setting. Since the survey methods used in the NLSY97 did not fully capture the theorized interaction effects, future research should implement qualitative research techniques such as intensive observation or in-depth interviews that are more adept at capturing complex relationships between concepts. Qualitative research methods might do a better job at capturing the complex nature of the strain-crime relationship. The use of vignettes such as those used by Mazerolle, Capowich, and Piquero (2003) may be more adept at discovering interaction effects. It is plausible and easy to set up hypothetical scenarios that test a variety of interactions between bullying victimization, negative affective states, and family processes and then determining whether these are in some way related to deviant adaptations.

Similar to prior bullying research (see Cullen et al., 2008; Moon et al., 2011), the overall results suggest GST offers an incomplete explanation of bullying victimization in this subsample of adolescents. Only two of the three outcomes were statistically related to bullying victimization. In addition, only one of the six interaction effects predicted by GST to mediate the bullying victimization-delinquency relationship was significantly related to one of the three outcomes. The lack of significant findings using theoretically sound measures (other than bullying victimization) and interactions is surprising and unsatisfactory. Additional research is required to determine to what extent GST as a general theory of crime and deviance can explain the causes and consequences of bullying. Furthermore, additional research is needed to develop a better measurement of bullying victimization and measure a wide array of negative affective states (e.g., anger, depression, anxiety) and coping resources (e.g., association with delinquent peers, extra-

curricular activities, social support) not included in the current study to reach a more in-depth understanding of their influence on the causes and consequences of bullying in the United States.

In conclusion, it is important to emphasize the current findings as a whole makes a notable contribution to our knowledge on the collateral consequences of bullying victimization and the key role family processes play in the intervention and prevention of wayward conduct. Shedding light on general strain theory's general application to all forms of strain and deviant adaptations, bullying victimization should be examined in a more in-depth manner that emphasize the variety of bullying victimization methods and internalized/externalized forms of deviance (see Hay, Meldrum, and Mann, 2010, for a recent example).

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