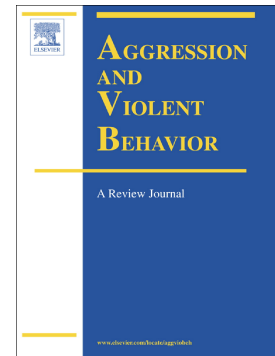


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Assessing General Strain Theory and Measures of Victimization, 2002-2018

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Abstract

General Strain Theory (GST) is one of the leading theories of crime and delinquency in the field of criminology, with victimization identified as a leading source of strain due to the frequency and prevalence of its experience. However, measures of victimization widely range from direct experiences of physical violence to vicarious or even anticipated victimization, making it difficult to isolate the explanatory contribution of GST on crime and delinquency. A systematic review was conducted of peer-reviewed articles to provide a concise understanding of the relationship between victimization and crime and delinquency. Particular attention was given to definitions and operationalization of victimization, as well as whether the studies used longitudinal or cross-sectional samples. Findings suggest a discernible correlation between physical victimization measures and engagement in substance use, bullying behaviors, and general delinquency. However, these findings may be conditioned by the exact operationalization of victimization and outcome measures utilized. More nuanced discussions of the findings, as well as theoretical and empirical implications, are included

Keywords: General strain theory; victimization; systematic review

1.1 Background

General strain theory (GST) posits that crime and delinquency are caused by the presence of negative emotion(s), such as fear, disappointment, depression, anger, and frustration, resulting from an array of strains (Agnew, 1992). In turn, these negative feelings lead to a need to cope, with one potential coping mechanism being crime and/or delinquency. General strain theory proposes three types of strain: the inability to achieve positively-valued goals (goal blockage), the removal of (or threat to remove) positively valued stimuli, and the presence of (or threat to present) noxious stimuli (Agnew, 1992). Agnew's theory focuses on the causes of crime/delinquency by expanding Merton's (1938) idea of strain by asserting that the causes of strain do not solely derive from societal pressure to achieve success. General strain theory has been extensively tested and holds strong merit in the field of criminology (Agnew, Brezina, Wright, & Cullen, 2002; Baker & Pelfrey, 2016).

The negative emotions outlined in GST can be caused by either direct or indirect strains. Direct strain refers to personal experiences while indirect strain refers to anticipated or vicarious strain. Agnew (2002) outlined the importance in considering the effects of direct and indirect victimization on juveniles as a cause of strain. Victimization is of particular interest because of the frequency and prevalence of its experience as well as its salience as an experienced, vicarious, or anticipated source of strain. It is not necessary to measure these three forms of victimization together, but in order to establish effects of indirect victimization that are independent of direct victimization, one must also control for as many forms of victimization as possible. Moreover, Agnew (2002) stated that victimization is an important concept to measure as it is one type of strain that is most likely to lead to delinquency. Compared to other forms of strain, victimization specifically has been understudied in criminological research, but several

studies in the field of psychology have tied victimization to violence and antisocial behavior (Ford et al., 2009; Fedina et al., 2016; Walters & Espelage, 2018). This underscores the importance of measuring victimization in tests of GST.

Victimization is a concept that has been operationalized a number of different ways. This variety of measurement strategies in the literature make it difficult to pinpoint the root causes of strain on crime and/or delinquency and its ties to GST. In order to better understand the relationship between victimization and crime/delinquency, this paper conducted a systematic review of peer-reviewed articles and focused on the definition and operationalization of victimization. The authors initially identified 17 different measures of victimization, and then narrowed the list down further to the six concept areas discussed below. Given the broad concept of victimization in general, narrowing down its measurement enabled the authors to obtain a more precise idea of the ways that specific forms of victimization affect strain. Lastly, the impact of different mediating and moderating variables theoretically implicated in the GST framework were also examined, if applicable, in order to fully understand their role in shaping the degree of support between victimization and crime/delinquency.

1.2 Systematic Review

A literature search was conducted for published, peer-reviewed articles investigating victimization as a source of strain as suggested in GST. The literature search included articles published as early as 2002, as this was when Agnew asserted the importance of victimization as a source of strain and extended through the end of February 2018. To identify potential articles, the search terms “general strain theory” in the abstract and “victimization” anywhere in the text were searched in EBSCOhost and Criminal Justice Abstracts databases.

The search yielded a total number of 116 articles. These articles were assessed for applicability due to the nature of the in-text criteria for victimization measures. A final selection of 56 articles were included as they measured victimization as a source of strain. After the articles were reviewed by the authors, six thematic areas arose: prison/inmate, bullying, violent, school-based, sexual assault/stalking/intimate partner violence (IPV), and multiple/nonspecific. The following section details the empirical findings and the appendix includes a brief overview of the included studies.

1.3 Results

1.3.1 Prison/Inmate Victimization

Three of the articles included in this review focused on victimization in prisons or utilized samples of prisoners. All three studies collected data on direct experiences with violent victimization ranging from fights to assault with a weapon. While two of them, Listwan and colleagues (2013) and McGrath, Marcum, and Copes (2012) also utilized a non-violent measure such as theft. In addition, McGrath and colleagues (2012), collected data on vicarious and anticipated victimization in a custodial setting measured through a series of items about the respondent's experience witnessing non-violent (e.g. theft) and violent (e.g. assault with a weapon) crimes. Two of the studies utilized cross-sectional data, McGrath and colleagues (2012) and Listwan and colleagues (2013), Zweig and colleagues (2015) measured the effects over four waves of data.

Overall, the results suggested victimization in prison increases the likelihood of future criminal behavior. For example, McGrath and colleagues (2012) found that experienced and vicarious strain increased violent behavior (such as fighting, weapon carrying, and destruction of

property) and drug and alcohol use by inmates. While all three articles collected data about victimization in prison, two articles also focused on the effects victimization on reentry. Both articles found an increased likelihood of recidivism among respondents exposed to violence during their incarceration (Listwan et al., 2013; Zweig et al., 2015). More specifically, Listwan and colleagues (2013) found evidence that negative prison environment increased the odds of subsequent arrest and reincarceration. Zweig and colleagues (2015) concluded victimization in prison leads to negative emotional reactions, which in turn increase the likelihood of negative behaviors, including criminal activity, after release. Overall, the results of all three articles find a significant relationship between the prison environment and strain; this relationship exists in studies based on either cross-sectional or longitudinal datasets.

1.3.2 Bullying (Traditional & Cyber) Victimization

Overall, there were nine articles that analyzed bullying victimization behavior. Some earlier articles restricted the analysis to traditional (face-to-face) bullying behavior (Cullen, Unnever, Hartman, Turner, & Agnew, 2008; Moon, Morash, & McCluskey, 2012; Moon & Morash, 2013; Sigfusdottir, Gudjonsson, & Sigurdsson, 2010, Steele, 2016; Walters & Espelage, 2017), while more recent articles have included measures of both traditional and cyberbullying simultaneously (Baker & Pelfrey, 2016; Jang, Song, & Kim, 2013; Wright & Li, 2012).

Cullen and colleagues (2008) analyzed face to face bullying behavior and the effect it has on subsequent delinquent activity. The measurement of bullying behavior included nine-items ranging from being called names to physical assault that were part of a cross-sectional dataset. Results indicated school bullying victimization has positive, significant effects on delinquent involvement that holds across genders. However, males who were victims were more likely to

use drugs. This effect was stronger among those with weaker social bonds and/or aggressive attitudes.

Following this, Sigfusdottir, Gudjonsson, and Sigurdsson (2010) investigated the effect of bullying behavior in a cross-sectional sample of 7,149 Islandic adolescents (15 to 16 years old). In this study, bullying was operationalized by a set of three questions including verbal and physical bullying. The authors also collected the respondent's bullying behavior towards others and levels of anger. Results indicate that bullying behavior and victimization are both related to crime/delinquency as measured by theft and burglary.

Moon, Morash, and McCluskey (2012) extended this body of literature to South Korea. Using the longitudinal Korean Youth Survey, they analyzed the effect that several sources of strain including, part-time work; victimization, financial and exam-related stress; family and parental conflict, and negative interaction with peers has on subsequent bullying behavior of others. Results suggest that all of these sources of strain, with exception negative interactions with peers, had a positive and significant relationship with bullying behavior at wave 2.

Moon and Morash (2012) evaluated the effects of seven sources of strain including negative life events, family conflict, teachers' emotional punishment, racial discrimination, being bullied, criminal victimization, and negative community environment on subsequent delinquency. In this cross-sectional study, bullying victimization was measured using a scale of 11 items including physical, emotional, and psychological bullying by fellow students. Criminal victimization was measured by summing five victimizations types. In a small sample ($n=296$) of high school students, the authors found evidence that, with the exception to negative neighborhood environment, every source of strain was linked to all three measures of delinquency (violent, property, and status offense).

Steele (2016) studied strains including racial discrimination and verbal bullying by utilizing data from wave 3 (2000-2002) of the Project on Human Development in Chicago Neighborhoods (PHDCN) consisting of 1,156 respondents. Racial discrimination was measured by several items regarding the respondent's experiences with discrimination in different areas of their life; answers were combined and dichotomized. Verbal bullying was measured by a single question asking if anyone made fun of or humiliated the respondent. The study included a third strain measure, exposure to violence, which was operationalized via several questions regarding experience with threats, physical violence, gun violence, and witnessing violence. These questions were then combined into a cumulative scale. The author found that physical victimization was the only social strain that had direct positive effect on marijuana and alcohol use, but only for Hispanics and African Americans.

Recently, this area of research has been expanded to investigate the mediating effect of anger between bullying and delinquency. Using three waves of data from the Illinois Study of Bullying and Sexual Violence, Walters and Espelage (2017) operationalized bullying with a four-item scale: other students picked on me, other students called me gay, other students called me names, or I got hit and pushed by other students. Cognitive impulsivity and anger were used as mediator variables and results found evidence of cognitive impulsivity mediating the victimization-delinquency relationship. This mediating relationship was not present with anger.

While the aforementioned bullying articles limit analyses to traditional bullying, several articles analyze both cyber- and traditional bullying. One such study by Wright and Li (2012), used GST to investigate cyber-victimization in relation to cyber-displaced aggression. In a longitudinal sample of 130 young adults, the authors operationalized cyber-victimization measured on scale of 1 to 9 ranging from never to daily, respectively; face-to-face victimization

measured on scale of 0 (never) to 4 (a few times a week); cyber-displaced aggression measured on scale of 1 (never) to 9 (daily); and face-to-face aggression measured on scale of 1 (extremely uncharacteristic of me) to 7 (extremely characteristic of me). The findings suggest that victimization in both cyber- and face-to-face methods contributed to displaced aggression and displaced cyber-aggression.

Jang and colleagues (2013) tested the relationship between off-line bullying victimization and subsequent perpetration of cyberbullying utilizing two waves of data from the Korean Youth Panel Survey. The independent variable, bullying victimization, was operationalized with two questions: have you ever been severely teased or bantered during the last year and have you been collectively bullied during the last year. Cyberbullying, the dependent variable, was also operationalized through two questions: have you ever intentionally circulated false information on internet bulletin boards about others during the last year and have you ever cursed/insulted other people on chatting/bulletin boards during the last year. Controlling for parental strain, study strain, financial strain, delinquent peer, low self-control, gender, monthly income, results showed that strain explained cyberbullying is declining, but that being bullied offline is significantly related to engaging in cyberbullying behavior. Those who were victimized offline were more likely to become cyberbullies and to externalize their strain online.

A more recent study investigated the relationship between bullying victimization and drug use and weapon carrying (Baker & Pelfrey, 2016). The cross-sectional sample consisted of 3,403 students in grades 6 through 12 and were given a shortened version of the Youth Risk Behavior Survey. Drug use, one of the dependent variables, was broken into two types of drug use: soft and hard. Soft drugs included cigarettes, alcohol, and marijuana while hard drugs consisted of prescription drugs and cocaine. Bullying victimization was parsed into traditional

bullying (e.g. harassed or picked on) and cyberbullying (e.g. bullying in a chatroom or social network site). Results suggest that cyberbullying victimization and anticipated strain of feeling unsafe or scared at school are positively and significantly associated with all three mechanisms of delinquent coping: soft drug use, hard drug use, weapon carrying.

Overall, this body of literature examining bullying victimization indicates that bullying is a significant source of strain. Specifically, each of the nine articles summarized above found a significant relationship between bullying victimization and strain. This effect remains across different types of bullying, face-to-face and cyber-bullying, and across a variety of samples and locations. Studies based on cross-sectional analyses found consistent support for the assertion that bullying is a source of strain and linked to delinquent actions. This support continued in longitudinal analyses of this relationship.

1.3.3 Violent Victimization

One major area of research on the effect of victimization as a source of strain has focused on violent victimizations. Fourteen articles operationalized victimization utilizing a measure of violent victimization. One of the early studies was completed by Piquero and Sealock (2004) and studied gender differences in GST among a cross-sectional sample of 150 youth placed on probation in a juvenile detention facility. Strain was operationalized by presentation of noxious stimuli, experiences of abuse, and created as an additive variable with three scales: the amount of physical abuse directed toward the respondent in the household, the amount of physical abuse directed towards others in the household, and the amount of emotional abuse directed toward the respondent in the household. Negative affect was measured in terms of anger and depression, each with their own scale. The dependent variables were interpersonal aggression and property offending. Findings suggest that respondents who experienced more strain reported more

delinquent activity. Piquero and Sealock (2004) found mixed evidence for the effect of negative emotions on delinquent activity and note that anger in females was positively related to interpersonal aggression even when strain was not significant.

Hay and Evans (2006) extended this research using two waves of data from the National Survey of Children (n=1,423). These data permitted the researchers to measure victimization and subsequent delinquency five years apart maintaining temporal ordering in the analysis. Victimization was measured using six items asking whether they had been beaten up, hit with hand, fist, or other object, having objects thrown at them, having money stolen from them, and being threatened with violence. Data on delinquency was collected at wave two and was operationalized by a series of questions regarding substance use, property delinquency, and violent delinquency. Results found a significant relationship between victimization and delinquency, which remained significant even when controlling for other background factors.

Shortly thereafter, Kaufman (2009) investigated the gendered differences in response to strain. Using the data from first 2 waves of the National Longitudinal Study of Adolescent Health, the author was able to analyze a sample of 12,018 adolescents in grades 7-12. The study analyzed two sources of strain: suicidal behavior by friends/family and violent victimization. Suicidal behavior was measured dichotomously with attempted or completed suicide of a friend or family member in the past 12 months. Violent victimization was a dichotomous measure that was collapsed from several ordinal measures of violent victimization. The author analyzed several types of deviance as the dependent measure ranging from bad temper to violent delinquency. Findings suggest depressive symptoms are predictive of all four deviance measures for females. For males, only depressive symptoms were predictive of suicidal thought and running away. With exception to males in the weekly drinking model, bad temper generally had

no effect on either outcome among males or females. While violent victimization was not statistically significant in the fully specified models for suicidal thought, weekly drinking, or running away it was the strongest predictor of violent deviance. The authors noted that violent victimization had a stronger impact on violent deviance in males compared to females.

Watts and McNulty (2013) also utilized the National Longitudinal Study of Adolescent Health to investigate the relationship between victimization and deviance. In this study, the authors focused on childhood physical abuse including physical and sexual abuse as a measure of violent victimization. The results suggest that childhood sexual abuse is a predictor of criminal offending and that this effect is stronger in males than females.

Baron (2009) extended this body of literature to include vicarious and anticipated victimization. In a cross-sectional sample of 300 respondents aged 16-24 who were not enrolled in school, unemployed, and living in a shelter in Toronto, Canada, the author analyzed the effect of direct victimization, victimization of peers, and anticipated risk and fear of victimization. Results showed that experienced, vicarious, and anticipated risk strain were all positively associated with violent offending, while anticipated fear was negatively associated with violent offending. When applying control variables, experienced victimization was more significant when accompanied with negative emotionality and low constraint. Overall, when higher levels of negative emotionality were accompanied by lower levels of constraint, respondents were more likely to violently offend.

Research branched out to evaluate the presence of mediating effects in the pathway between victimization and subsequent delinquent activity. One such study was performed by Kort-Butler (2010). In this study, the author analyzed the mediating effects of self-esteem and social support between strain, both experienced and vicarious, on delinquent outcomes by using

the first two waves of data from the National Longitudinal Study of Adolescent Health. The results support the effect of violent victimization, measured as five-items assessing the extent to which they experienced and/or witnessed physical violence, as a source of strain. Specifically, personally experienced and vicarious victimization can act as stressors that increase the risk of delinquent outcomes. There was also support for the mediating effect of social support and self-esteem. The results suggest victimization among adolescents with few to no social supports or low self-esteem increased subsequent delinquency.

Using the first two waves of data from the Project on Human Development in Chicago Neighborhoods, Miller, Fagan, and Wright (2014) assessed the effect of peer and parental support as a mediator between vicarious victimization and substance abuse among a sample of 2,345 youth age 9 to 15. The authors found evidence that vicarious victimization increased the short-term odds of alcohol use (measured at a single point), but the effect did not hold when measured longitudinally. Additionally, vicarious victimization was not related to cigarette or marijuana use, and peer support did not mediate the relationship between vicarious victimization and substance use. Family support, however, did mediate the relationship but in a way inconsistent with GST. Results found that the effect of vicarious victimization on substance use was stronger for individuals with high levels of family support. When involvement in delinquency was removed as a predictor, vicarious victimization was related to substance use at wave 1 and wave 2 (Miller, Fagan & Wright, 2014).

Turanovic and Pratt (2013) studied the role of maladaptive coping in the causal pathway between victimization and offending. Utilizing a sample of 1,463 juveniles from three waves of panel data from the Gang Resistance Education and Training program, the authors evaluated the effect of low self-control and victimization on substance use and violent offending. Measuring

victimization as three items that captured the number of times each respondent was the victim of one of more violent acts during last 6 months. Responses ranged from 0-12 and were summed to create an indicator of victimization with scores ranging between 0 and 36. The findings suggest that victims with low self-control are more likely to engage in substance use post-victimization, and low self-control and substance use are found to exert significant conditional effects on the pathway between victimization and offending.

Several studies have relied upon data from the National Survey of Adolescents which is a cross-sectional dataset of American youth age 12-17 living with at least one parent or guardian. Lin and colleagues (2011) examined the effect of violent victimization, vicarious violent victimization, and dual violent victimization on juvenile violent/property crime and drug use. Violent victimization was measured through self-reports where physical force was experienced or threatened while vicarious violent victimization was measured by asking if the respondent had witnessed violent victimization. Dual violent victimization was operationalized as those who reported experiencing at least one incident of both direct and vicarious victimization. Delinquency was in turn operationalized as six-items measuring violent and property delinquent activity, and five items measuring drug use. The authors found support for GST, specifically that violent victimization can lead to delinquency through depression, lowered social control, and increased delinquent peer association. Violent victimization was also found to increase participation in delinquency when victims are embedded in situations where delinquent peer association is high and social control is low (Lin, Cochran & Mieczkowski, 2011).

Lee and Kim (2017) analyzed these same data to investigate potential gender differences. While focusing on only experienced and vicarious strains, which were operationalized similarly to the study by Lin and colleagues (2011), the authors found evidence that experienced

victimization had a stronger impact on subsequent violent behavior than vicarious victimization. Lee and Kim (2017) did not, however, find support for gender differences in the effects of experienced and vicarious victimization.

Al-Badayneh and colleagues (2012) analyzed the effect that violent victimization and the fear of violent victimization has on subsequent bullying behavior in a cross-sectional sample of 1,000 Jordanian college students. The study operationalized fear with a five-item scale evaluating fear of crime and neglect, as well as physical, psychological, and emotional abuse. While the authors did not provide more detail, violent victimization was operationalized by several items including experienced and vicarious victimization. Results suggested that violent victimization is related to bullying others and bullying victimization. The importance of victimization, however, varies between the types of bullying behavior and the victim.

Link and colleagues (2016) applied GST to study the relationship between victimization, both experienced and vicarious, and violence perpetration among adults with serious mental illnesses by using data from several waves of the Community Outcomes of Assisted Outpatient Treatment Study (n=184). Serious violent victimization was measured by the number of times the respondent was a victim of serious violence; witnessing abuse was measured dichotomously and the authors controlled for parental drug abuse and stressful life events; engaging in violence was measured as whether any interpersonal violence was committed in the past 3 months or past 12 months. Findings suggested that parental drug abuse during childhood and negative life stressors across the life course increased the risk of engaging in violence. Interestingly, and contrary to much of the literature discussed above, violent victimization did not predict engaging in violence in any models and witnessing victimization was not a predictor in the presence of control variables.

More recently, two articles analyzed data from the Pathways to Desistance to assess the effects of victimization in a sample of adolescent offenders (Barbieri & Craig, 2018; Craig, Cardwell & Piquero, 2017). The longitudinal nature of these data permitted the researchers to maintain temporal ordering in their analyses between violent victimization, both direct and indirect, and subsequent offending. Craig and colleagues (2017) expanded the GST literature by including criminal propensity, which are individual characteristics that increase the odds of coping to strain through crime. The results suggest that violent victimization, both direct and indirect, are linked to subsequent offending (Craig, Cardwell & Piquero, 2017). Barbieri and Craig (2018) find similar results; victimization, both experienced and indirect, increased the likelihood of criminal coping. Interestingly, this effect varied by race. Specifically, Hispanic and Black respondents were more likely to use delinquent coping mechanisms after experiencing victimization compared to white respondents. This study also investigated the interactive effect of victimization and religiosity on criminal coping. The findings suggest that the interaction between victimization and religiosity is not significant in understanding subsequent offending (Barbieri & Craig, 2018).

Overall, the results from articles focusing on violent victimization as a source of strain find general support for GST. The only exception is found in Link and colleagues' (2016) work, which focused on a small sample of respondents with mental illness. While the majority of research used samples originating from the United States, support has also been found in international samples. Research that has focused on gender differences has found mixed results with one study finding support for gender differences (Kaufman, 2009) and one not finding support (Lee & Kim, 2017). Finally, mixed results were seen when considering mediating effects. Kort-Butler (2010) found support when considering social supports and self-esteem,

while Miller, Fagan, and Wright (2014) found mixed results that were contrary to GST when considering peer and parental support with other forms of crime/delinquency.

Generally, studies that were researched using cross-sectional or longitudinal datasets produced support that violent victimization is a source of strain in GST. Interestingly, Miller and colleagues (2014) used a combination of both cross sectional (predictors and dependent variables were operationalized from a single wave of data) and longitudinal analyses (dependent variable was operationalized at wave two). Changes in the analysis (substance use measured at wave one or wave two) affected the results. When measured simultaneously, vicarious victimization was predictive of alcohol use, but this effect was not found when substance use was measured at wave two. Other changes in the model appeared to affect the results. Specifically, when accounting for self-reported delinquency, substance use was not well explained by vicarious victimization, but vicarious victimization was a significant predictor when other delinquency was removed as a predictor. All of the fourteen articles summarized found a significant relationship between violent victimization and crime/delinquency.

1.3.4 School-Based Victimization

Another area of focus among GST researchers are school-based sources of strain and victimization. A total of nine articles were identified as concentrating on school related victimization, loosely defined as direct, anticipated, or vicarious victimization occurring (A) within the school environment and (B) via interactions with a peer or teacher. Button (2015; 2016) examined both anticipated victimization (how many days of school missed due to feeling unsafe) and direct victimization (the number of times property was damaged or stolen, threatened or injured with a weapon, or involvement in a physical fight where treatment from the school nurse was required) among a sample of high-school youth within the 2007 Delaware High

School Youth Risk Behavior Survey. Within this sample (n=2,639), 6% identified as lesbian, gay, bisexual, or questioning (LGBQ). Their results concluded victimized LGBQ youth were 53.8% more likely to report suicide ideations than non-LGBQ youth (Button, 2015).

Furthermore, they were more likely to carry a weapon to school (Button & Worthen, 2017).

Button and Worthen (2014) used the Youth Risk Behavior Survey and utilized data combined from three years of collection. They focused explicitly on 539 ninth through twelfth graders who identified as LGBQ or have reported same-sex sexual contact. Victimization was operationalized with five-items: the number of days they missed school during the past month because they felt unsafe, and the frequency during the past year in which they had property stolen, been threatened or injured with a weapon at school, been in physical fight at school, and been injured in a physical fight that had to be treated by a nurse or doctor. Button and Worthen (2014) concluded that GBQ male youth are more likely to skip school due to anticipated fear of victimization and are more likely to experience threatening or intimidating types of harassment, while lesbian youth are more likely to experience victimization, and females as a whole are more likely to report suicidality.

Using a cross-sectional sample of 2,011 sixth-twelfth grade students in the Appalachian region of the United States, Elrod, Soderstrom, and May (2008) examined several predictors of both in- and out-of-school delinquency. Nine predictors were examined and included a(n): negative peer influence scale (8-items examining whether their peers engage in trouble); attachment to school scale (9-items measuring whether they like various authority figures in their school); self-reported victimization (comprised of 6-items measuring whether they were the victim of theft; robbery; physical threats or attacks; verbal threats; sexual assault; and being picked on or bullied during the school year); general strain scale (10-item scale asking whether

they have experienced various stressful conditions such as divorce or a family move); victimization response scale (6-items assessing whether they would report threats made to them); importance of others scale (5-items indicating how important perceptions of different events are such as grades earned); external alienation scale (5-items examining how alienated they feel); weapon threat response scale (6-items assessing whether they would report weapons-related events); and a school climate scale (8-items examining whether they feel they are treated in respectful or positive ways). In line with previous research, Elrod, Soderstrom, and May (2008) noted that males who report higher levels of school-based victimization were in turn more likely to engage in delinquency in and outside of school. This is especially true for youth with higher levels of negative peer influence, lower levels of school attachment, those that are male, and those who report more strain and social alienation. No racial or ethnic differences were found.

Zavala and Spohn (2013) utilized a cross-sectional sample of 734 male high school sophomores and juniors from the National Survey of Weapon-Related Experiences, Behaviors, and Concerns of High-School Youth. In this study, both vicarious and anticipated strain were included with vicarious victimization measured as whether a friend or family member had been attacked with a gun; been shot; been at a party or social gathering where others were carrying gun or shots were fired; if they had seen other youth carrying guns in their neighborhood; and if they had ever seen someone severely/fatally wounded with a weapon. Anticipated strain was measured by asking how likely they felt they would be shot, stabbed, or not be alive by age 25. Victimization (two questions asking how often in the last 12 months have they been threatened with or wounded by a weapon both on school and off school property) and perpetration (if they showed, threatened, or used a weapon against someone during the past 12 months) were both used as dependent variables. Zavala and Spohn (2013) determined vicarious victimization was a

significant predictor of future perpetration, while anticipated victimization was a predictor of victimization but not involvement in delinquency.

Ousey, Wilcox and Schreck (2015) reported that experiencing violent victimization during the school year increases the victim's frequency of involvement in violent offending. By using longitudinal data from the Rural Substance Abuse and Violence Project, the authors assessed how the overall propensity to commit crime and propensity for violence was the result of violent crime victimization. Victimization was operationalized as the summed responses from 5-items which asked students to report the number of times during the school year they were the victim of physical assault, robbery, sexual battery, and/or threatened with a firearm or other weapon. Surprisingly however, there were no interaction effects when including measures of personality traits and social relationships conducive for criminality and predicted by GST, such as social control, self-control, delinquent peers, deviant values, and gang-membership.

Moon and Morash (2017) examined the strengths of five sources of strain, measured both objectively (frequency of experience) and subjectively (ranking of how much they disliked the strain), and their relative impact on delinquency. Using longitudinal data from 771 Korean adolescents, their results determined that three school-based strains, teacher's punishment, gender discrimination, and criminal victimization, were significant and consistent predictors of delinquent behaviors, despite how measured. Additionally, the authors concluded that these relationships were not mediated by situational-based anger or depression.

Thaxton and Agnew (2017) sought to address the inconsistent findings among studies examining conditioning effects as specified in GST. Using cross-sectional data from 1995, of the National Evaluation of the Gang Resistance and Education Training program, 945 eighth-grade students were asked about their experiences with delinquency, strain, and gang membership.

Victimization was operationalized as a 4-item scale indicating the number of times in the past year they were hit, robbed, attacked with a weapon, or had things stolen from them. Thaxton and Agnew (2017) additionally measured vicarious and direct strains related to police and school experiences. Their results did show support for the role of criminal propensity (ten risk factors such as parental attachment and monitoring, impulsivity, and delinquent peers, see Agnew, 2013) to serve as a moderator on the relationship between strain and delinquency.

In sum, the research focusing on school-related victimization found a significant relationship between direct victimization and involvement in delinquency among all nine articles summarized. However, inconsistent support is found for the role of criminal propensity. Thaxton and Agnew's (2017) cross-sectional study found support for the mediating role of criminal propensity, while Ousey, Wilcox, and Schrek (2015) did not find support when assessing the interactive effects of similar risk factors among their longitudinal panel design.

1.3.5 Sexual Assault, Stalking, and Intimate Partner Victimization (IPV)

Overall, there were four articles that examined sexual assault, stalking, or IPV victimization behavior. One article explicitly focused on stalking as a direct source of victimization using cross-section data from the Supplemental Victimization Survey (n=1,599) and concluded that not all stalking experiences trigger the same degree of reactions. Specifically, victims with stalkers who spied, followed, or posted information about them online were significantly more likely to report feelings of fright or unease (Ngo & Paternoster, 2016). Furthermore, and contrary to expectations, results showed that feelings of annoyance or anger resulted in a significant decrease in likelihood to change daily activities.

Zavala (2017) addressed intimate partner violence within same-sex relationships by utilizing a sample of 3,000 college students. Measuring victimization as internalized homophobia

and discriminatory experiences related to sexual orientation, he determined that these unique experiences were significant predictors of subsequent domestic violence perpetration.

Sigfusdottir and colleagues (2008) determined sexual abuse was likely to lead to two negative emotions, anger and depression, among a sample of 9,113 Icelandic high school students. Those who reported depression following sexual abuse were in turn more likely to report suicidality, while anger was a stronger predictor of general delinquency (theft including use of physical force, burglary, and vandalism).

Using a sample of 2,359 youth aged 12-19, Carson, Sullivan, Cochran, and Lersch, (2009) measured victimization as age of first physical assault and age of first sexual assault, while also controlling for age, gender, race, and socioeconomic status. Negative emotions (depression and suicidal thoughts) and social bonds (friends, family, and school problems) were examined for their potential to mediate the relationship between early experiences with victimization and frequency and onset of drug use (their dependent variables). Results determined direct and early sexual assault to be a significant predictor of drug use. Additionally, weakened social bonds partially mediated the relationship, decreasing the coefficients but not nullifying their significance.

Overall, this thematic area also supported the relationship between direct measures of victimization and delinquent outcomes as all four articles found significant relationships between victimization and negative outcomes, but victimization also appears to predict drug use and intimate partner violence. In addition, Carson and associates (2009) concluded that social bonds serve as a partial mediator between early victimization via sexual and/or physical assault and drug use, which is in line with the summary findings for the prior section. All four studies relied

on the use of cross-sectional survey data making discussions on causality or long-term effects difficult.

1.3.6 Multiple/Non-Specific Sources of Victimization

This final section was also the largest, with 17 articles using multiple measures of victimization. As mentioned previously, Agnew (2002) sets the foundation for the empirical importance of victimization in the general strain literature. In terms of victimization, he examined the effects of multiple sources of strain including those directly experienced, vicariously experienced, and even those anticipated. These measures ranged from in-school victimization, the overall school climate, victimization at the hands of family and friends, and violence within the neighborhood. In the end, Agnew (2002) concluded that physical victimization was the leading source and strongest predictor of crime/delinquency.

Two studies concluded that the relationship between victimization and delinquent outcomes was dependent upon the types of strain measured as well as the types of delinquent outcomes considered. Using data from the Women's Experience with Violence study, Slocum, Simpson, and Smith (2005) sampled 271 incarcerated women. Three dichotomous outcome variables were estimated: drug use, nonviolent crime, and offensive violence. Strain measures included noxious neighborhood variables and stressful life experiences, as well as violent victimization. Their results found that women were more likely to engage in violence when experiencing severe or out-of-the-ordinary stressful events and more likely to engage in drug use following exposure to neighborhood violence.

Furthering this complicated relationship, Lo, Kim, and Church (2008) stated the relationship between drug use and victimization is dependent on both the type of drugs examined and source of victimization, also noting the importance of drug availability and accessibility as a

determinant of drug use. Using seven waves of data from the National Youth Survey, Lo and colleagues (2008) measured the effects of three types of victimization, sexual, physical, and other (e.g. theft and property damage) on substance use. Their results suggest some individuals, particularly adults, are more capable of obtaining drugs whether legally or illegally than teenagers and young adults, and thus, accessibility may be a factor in the correlation between victimization and drug use over the life-course.

Peck (2013) sought to address empirical limitations within GST research on the role of race and potential for differing experiences with strain. Using the first wave of data from the National Longitudinal Study of Adolescent Health, dichotomous measures of family strain (did any family member attempt suicide within the past 12 months), neighborhood strain (how happy are you living in current neighborhood; do you usually feel safe), education strain (6-items questioning attachment, safety, and whether they get in trouble), economic strain (does mother receive public assistant), fairness (are students at your school prejudiced; do teachers treat you fairly), and criminal victimization (5-item scale asking if in the past 12 months have they been threatened or injured with a weapon, jumped, or involved in a physical fight) were included. Results determined that while criminal victimization was a significant predictor of depression among Hispanic, Black, and white youth, consistent results were not evident for predictors of strain on delinquency. None of the measures of strain were significant for Hispanics, while prejudice was significant only for Black and familial suicide only for whites.

Shortly after, Spohn and Wood (2014) also assessed potential racial or ethnic differences and concluded victimization via assault and negative life events increased the risk of serious delinquency for whites, while recent assault victimization and negative life events were a risk factor for Hispanic youth. Using cross-sectional data from the National Survey of Adolescents in

the United States, Spohn and Wood (2014) concluded that the relationship between victimization and self-reported serious delinquency appears contingent upon the source of victimization, contextual factors such as past harsh parental punishment, and race. More specifically, white youth appear more susceptible to physical punishment, Hispanic youth are seemingly deterred by recent harsh punishment, while being a victim of assault and negative life events were not significant predictors of delinquency for Black youth.

Using cross-sectional data from the Dating Violence among Latino Adolescent study, Cudmore, Cuevas, and Sabina (2017) found partial support for the positive relationship between polyvictimization and delinquency among Latino youth. More specifically, polyvictimization, measured as the total number of criminal, sexual abuse, child maltreatment, or peer/sibling victimization events, appears to increase anger which in turn increases the risk of involvement in self-reported delinquency.

Manasse and Ganem (2009) utilized data from two waves of the National Youth Survey which measured victimization as experiences with property theft, parental abuse, attack with a weapon, motor vehicle or bike theft, items stolen from their car, sexual attack or pressure to engage in sexual behaviors, and pickpocketing. They reported that victimization had a significant and positive effect on depression and self-reported delinquency, but depression did not fully mediate this relationship. More recently, Jang and Song (2015) determined that both objective (composite scale of experienced violent victimization, anticipated victimization, family strain, and neighborhood disorder measures) and subjective (how stressful these negative life events were perceived) measures of strain were predictors of anger and depression/anxiety, however, only anger was then positively associated with subsequent delinquency and drug use among their longitudinal sample of Korean youth ($n=3,449$).

With data from the Global School-based Student Health Survey, and administered in the Philippines, Barrera, Gaga-a, and Pabayos (2016) also found a relationship between depression and victimization, but the findings were overall mixed. Victimization was measured as experiencing violence, discrimination, sexual harassment, social exclusion, and food deprivation and dependent variables included suicidality, substance use, and truancy. The authors concluded violent experiences, discrimination, and sexual harassment were significant predictors of suicidality, and that these relationships were mediated by depression. While violent experiences and food deprivation were significant predictors of substance use, though depression appears to only mediate the food deprivation-substance use relationship. Lastly, violent experiences, sexual harassment, and food deprivation were significant predictors of truancy; depression weakened but did not nullify these relationships.

Jang and Johnson (2003) used cross-sectional data from the National Survey of Black Americans which incorporated a 120-category scale measuring a vast array of negative life events which include financial; residential; job, school, death, accident-related; legal; interpersonal; criminal victimization; and physical health measures. They presented support for the conditioning effects of religiosity and negative emotions on deviant behaviors, specifically drug use and fights or arguments. Further, results did not show support for the roles of self-esteem and self-efficacy despite their salience in Agnew's (1992) original propositions of GST.

Keith, McClure, Vasquez, Reed, and May (2015) examined whether two separate measures of gender identity, masculinity and femininity, moderated the impact of negative emotionality in response to strain by assessing the National Longitudinal Study of Adolescent Health and utilizing data from waves three and four. Results suggested that those who identify as masculine are more at risk of anger while those identifying as feminine are at a decreased risk.

They go on to suggest that gender identity may impact the emotional responses to strains and how life experiences are interpreted. As it relates to victimization, Keith and colleagues (2015) found inconsistent support for the conditioning effects of gender identity on anger and depression in response to child abuse, victimization (composite scale measuring experiences with property or violent crime within the previous year), and economic and romantic strains.

Baron (2004) collected data from 400 youth aged 12-24 who have run away, been kicked out of their homes, or who otherwise spend a good portion of their time in public locations. He found that youth who experienced more emotional or violent victimization while homeless were more likely to report criminal engagement. Interestingly, this relationship appeared to be moderated by levels of self-efficacy; those with high levels of self-efficacy were more likely to engage in criminal behaviors following victimization. Following the same sampling parameters, Gallupe and Baron (2009) interviewed 313 street youth and determined that those who have experienced being ripped off or physically abused while living on the street are significantly more likely to use hard drugs. Additionally, they concluded that the role of delinquent peers appears to moderate the relationship between property and physical victimization on drug use

Agnew and colleagues (2011) examined victimization as the numbers of times an individual was hit, been threatened with or had a weapon used on them, or had something stolen from them, by analyzing five waves of data from the Gang Resistance Education and Training program evaluation (p. 170). These four-items were combined into a singular measure and results suggested a positive and reciprocal relationship between victimization and self-control, particularly that victimization can reduce self-control which may in turn lead to increased delinquent behaviors.

Using longitudinal data from the Youth in Europe Project, Yilmaz, Lo, and Solakoglu (2015) found that Turkish youth were more likely to respond to school strains, negative life events, and physically violent victimization with smoking, particularly among males. Further, they concluded that both anger and depression were significant predictors of smoking and noted their interactive effect among male respondents.

Comparing a cross-sectional sample of 290 Native American and white female prisoners, Vigessaa (2013) studied the impact of physical, sexual, and emotional abuse in both child- and adulthood. Results indicated that women who experienced abuse as an adult were 2.1 times more likely to commit a drug-related offense and were at an increased risk of recidivism. Lastly, no discernible racial differences were found in self-reported histories of both child- and adulthood abuse across the three domains measured.

Moon, Blurton, and McCluskey (2008) collected cross-sectional data from a sample of South Korean middle schools ($n=777$). Victimization was measured as seven items that assessed family conflict, parental punishment, teacher punishment, financial strain, exam stress, bullying experiences, and criminal victimization (p. 590). Respondents were asked how often they experienced these strains (A) in the past month and (B) during their lifetime but prior to the previous 6 months. Further, respondents were then asked to rank how unjust each strainful experience was (0=no injustice; 9=very unjust) to capture Agnew's (2001) discussion on the importance of perceived injustice within GST research. Moon, Blurton, and McCluskey (2008) concluded that older and recent strains were both significant predictors of delinquent behaviors. More specifically, recent and older teacher punishment (both physical and emotional), recent and older criminal victimization, and older financial strains were significant predictors of delinquency.

Overall, this thematic area covered a broad array of victimization measures including sexual, physical, and emotional abuse; property or criminal victimization; conflict in school, home, the neighborhood, or among friends; harsh punishment; test anxieties; pickpocketing; food deprivation; social exclusion; racial discrimination; and financial problems. On average, the authors in this thematic area used 5 different categories of strain, with at least one of those items measuring victimization (Jang & Johnson, 2003 excluded as they included a 120-item scale of negative life events, a clear outlier among the other studies). Researchers often collapsed the measures into a singular scale, thus limiting our ability to classify them into a more specific category.

Generally, the findings suggest a strong relationship between victimization and crime/delinquency. Specifically, fourteen of the seventeen articles (82.4%) discussed in this theme found statistically significant relationships. However, five of the seventeen articles were able to utilize longitudinal data and their findings suggest that when researchers began identifying the specifics of this relationship between victimization and crime/delinquency, things begin to muddy. For instance, variables such as gender identity, source of victimization, and negative affect are vital considerations within GST research as the findings suggest these measures condition the strength of this correlation. Additionally, the collapse of multiple and different categories of victimization into singular measures of strain make it impossible to delineate which source of victimization is responsible for the delinquent outcomes measured.

1.4 Discussion

In order to obtain a picture of the state of the literature on GST, a systematic review was conducted focusing upon victimization as the key source of strain. A total of 56 articles were

identified that fit our inclusion criteria and were subsequently categorized into one of six categories. In general, the results revealed overwhelmingly positive support for Agnew's (2002) hypothesized link between victimization and crime/delinquency, despite differences in operationalization. While the cross-sectional results tended to offer stronger support of GST, many of the results from longitudinal studies did as well. However, not all the evidence was supportive, particularly with respect to GST's proposed mediators. For example, while Kort-Butler (2010) found social support mediated the effects of victimization on later delinquency, Button's (2016) analyses failed to indicate that social support mediated the effects of victimization on later outcomes among LGBQ youth. Similar mixed results have been reported for depression and anger (Barrera, Gage-a & Pabayos, 2016; Manasse & Ganem, 2009; Walters & Espelage, 2017).

Perhaps some of these mixed results could be explained by subgroup differences. Agnew (2017) recently reconceptualized GST to argue that one's criminal propensity conditions the likelihood of delinquent coping upon being exposed to a strainful event. In other words, those who are at a higher risk for crime or delinquency will be more likely to engage in delinquent coping. While the extant evidence offers weak support for this argument (Craig et al., 2017; Jang & Song, 2015; Ousey, Wilcox, & Schreck, 2015), these studies are limited in their generalizability. Clearly this is an important point for further research to consider.

As previously discussed, potential differences by sex, race/ethnicity, and sexual identity has received support in the literature. Many studies revealed males tended to be more likely to engage in offending and other antisocial behavior than females when encountered by some form of victimization (Elrod, Soderstrom, & May, 2008; Watts & McNulty, 2013; Yilmaz, Lo, & Solakoglu, 2015). For example, Watts and McNulty (2013) indicated that sexual abuse

victimization was a stronger predictor of later delinquency among males than females. Further, some evidence has indicated potential racial/ethnic differences; Barbieri and Craig (2018) found Hispanic and Black youth who experienced either direct or vicarious violent victimization were more likely engage in later criminal coping than white youth (though see also Carson et al., 2009; Cudmore, Cuevas, & Sabina, 2017; Peck, 2013; Spohn and Wood, 2014; Vigessaa, 2013). Further, the studies that focused upon school-based victimization found LGBTQ youth were not only more likely to be victimized at school but were also more likely to engage in negative behaviors such as suicidality, substance use, and weapon-carrying than their heterosexual peers (Button, 2015, 2016; Button & Worthen 2014, 2017).

One of our primary goals was to investigate if victimization operationalization strategies affected the degree of support for the strain-crime/delinquency relationship. Across the six different topics identified, most of the studies tended to support the effects of victimization on offending, regardless of how it was operationalized. Thus, in support of Agnew's (2002) arguments, victimization, regardless of the type, appears to be a particularly salient predictor of later offending. However, the current literature does not make it possible to delineate which source of victimization causes delinquent outcomes. In other words, it is not clear which matters the most: the source of victimization (i.e. known vs. unknown perpetrator), the frequency of the victimization, or the severity of the victimization. While Agnew (2002) posits that these factors are all important in predicting criminal coping, the current operationalization strategies do not allow us to isolate the effects of each factor. Future studies should seek to extend the measures currently in use in order to disentangle these potentially disparate effects.

Another potential mechanism that should also be considered is the extent to which an individual considers an event to be strainful or not. This is a particularly important point given

GST's arguments that strain creates pressure within an individual and it is this pressure that leads to some form of coping. Even if someone is victimized, if they do not perceive it as such then it may not create the need for coping. There is some indirect evidence for this point (Negriff, Schneiderman, & Trickett, 2017; Widom & Morris, 1997). Negriff and her colleagues compared later mental health and risk behavior outcomes among individuals who had court-substantiated cases of child maltreatment. Regardless of the official reports, those who self-reported they were maltreated as children were more likely to have poor mental health and engage in risk-taking behaviors as an adult. Widom and Morris (1997) found similar results; regardless of official reports of child sexual abuse, retrospective self-reports of such abuse were predictive of depression.

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Topic 1: Prison/Inmate Victimization			
Author(s), Year	Operationalization	Study Design	Results
McGrath, Marcum, & Copes (2012)	Directly and vicariously measured as times witnessed or been victimized in last year, ranging 0 to 6.	Cross-sectional	2 types of strain (experienced and vicarious) were related to higher levels of violent behavior and drug/alcohol use by inmates.
Listwan, Sullivan, Agnew, Cullen, & Colvin (2013)	Measured direct victimization within last 12 months of incarceration in interviews with prisoners	Cross-sectional	Negative prison environment was associated with a higher probability of arrest and re-incarceration. Negative relations with other inmates were associated with higher likelihood of re-incarceration.
Zweig, Yahner, Visser, & Lattimore (2015)	Directly measured victimization with self-reports and coded dichotomously 1=been victimized, 0=never	Longitudinal	Prison victimization leads to negative emotionality upon release which increases likelihood of re-offending
Topic 2: Bullying (Traditional and Cyber) Victimization			
Author(s), Year	Operationalization	Study Design	Results
Baker, & Pelfrey Jr (2016)	Traditional bullying directly measured as either been or have not been bullied in last year. Cyberbullying directly measured times bullied on a scale from 0 (never) to 4 (every day) in last year	Cross-sectional	Cyberbullying victimization and anticipated strain via feeling unsafe or scared at school are significantly associated with all three mechanisms of delinquent coping: soft drug use, hard drug use, and weapon carrying.
Cullen, Unnever, Hartman, Turner, & Agnew (2008)	Directly measured how often student was bullied at school since beginning of school year (never to daily)	Cross-sectional	School bullying victimization has significant effect on delinquent involvement across gender. Stronger among those with weaker social bonds and/or aggressive attitudes.
Jang, Song, & Kim (2013)	Directly measured have you ever been bullied, yes or no	Longitudinal	Engaging in cyberbullying behavior is significantly related to being bullied offline
Moon, Morash, & McCluskey (2012)	Directly measured bullying using a victimization index	Longitudinal	Youth strained by prior victimization (including being bullied) and conflicts with parents are most likely to engage in bullying
Moon & Morash (2012)	Directly measured bullying victimization and criminal victimization using scales	Cross-sectional	Strain has significant correlations with delinquency measures. Youth with criminal victimization experience are more likely to engage in violent, property-related, and status delinquency.
Sigfusdottir, Gudjonsson, & Sigurdsson (2010)	Directly measured individual and group victimization in the last year as occurred or didn't occur	Cross-sectional	Bullying behavior and victimization are related to delinquency (theft and burglary).
Steele (2016)	Directly measured bullying victimization across the lifespan asking if an event ever occurred, yes or no	Cross-sectional	Only physical victimization had direct, positive, effect on marijuana and alcohol use, but only for Hispanic and

			African American youth.
Walters & Espelage (2017)	Bullying victimization directly measured with University of Illinois Victimization Scale, responses ranging 0-4	Longitudinal	Cognitive impulsivity (not anger) mediates the victimization-delinquency relationship.
Wright & Li (2012)	Directly measured several types of bullying victimization on a scale ranging 1(never) to 9(daily).	Longitudinal	Both cyber and face-to-face victimization contributed to displaced aggression and displaced cyber aggression.
Topic 3: Violent Victimization			
Author(s), Year	Operationalization	Study Design	Results
Al-Badayneh, Al-Khattar, Al-Kresh, & Al-Hasan (2012)	Bullying measured directly with a 21 item scale	Cross-sectional	Exposure to violence had a consistent effect on victimization and perpetration of bullying activities.
Barbieri & Craig (2018)	Measured direct and witnessed violent victimization separately in a summative scale of experiencing or witnessing violent crimes in the past six months.	Longitudinal	Both experienced and witnessed violent victimization increased subsequent offending. Hispanic and Black respondents were more likely to use criminal coping compared to whites in response to experienced victimization.
Baron (2009)	Measured victimization directly through counts over past year. Measured victimization indirectly through vicarious victimization and anticipated victimization in next 12 months.	Cross-sectional	Experienced, vicarious, and anticipated (risk) strain all positively associated with violent offending. Anticipated (fear) negatively associated with violent offending. When applying control variables, experienced victimization was more significant when accompanied with negative emotionality and low constraint.
Craig, Cardwell & Piniquero (2017)	Measured direct and witnessed violent victimization in the past six months, respectively. Both of these scales were dichotomized as no victimization and any victimization.	Longitudinal	Both direct and indirect violent victimization increased subsequent offending.
Hay & Evans (2006)	Victimization measured using six items asking if they had been: beaten up, hit with hand or fist, hit with other object, money stolen from them, someone threaten them.	Longitudinal	Significant relationship between victimization and delinquency. The relationship was significant even when controlling for other background factors.
Kaufman (2009)	Suicidal behavior measured vicariously through friends or family, either did or did not engage in suicidal behavior. Violent behavior measured directly.	Longitudinal	“Non-angry” negative emotions (depressive symptoms) are predictive of suicidal thought and running away for both males and females, whereas anger (bad temper) had no effect on either outcome.

Kort-Butler (2010)	Used a scale to measure direct and anticipated victimization across lifespan and school years, respectively.	Longitudinal	Direct and vicarious victimization can be viewed as stressors that lead to delinquent outcomes. Victimized adolescents with few to no social support / self-esteem led to later delinquency.
Lee & Kim (2017)	Measured direct and vicarious victimization, if participant ever experienced certain actions.	Cross-sectional	Strains from victimization significantly increase subsequent gang fights, robbery, and assault. Experienced victimization had stronger effects than vicarious victimization. No evidence of gendered effects of experienced and vicarious victimization
Lin, Cochran, & Mieczkowski, (2011)	Direct violent victimization measured through self-reports. Vicarious victimization measured asking if seen anywhere	Cross-sectional	First, violent victimization can lead to delinquency through depression, lowered social control, and increased delinquent peer association. Second, violent victimization can increase participation in delinquency when victims are embedded in situations where delinquent peer association is high and social control is low.
Link, Cullen, Agnew, & Link, (2016)	Direct serious violence measured as a count. Vicarious witness dichotomous, whether did or did not witness	Longitudinal	Strain and stress from parental drug abuse, negative life stressors, and violence all significant predictors of violence even when controlling for other variables. Violent victimization, however, did not predict subsequent violent actions.
Miller, Fagan, & Wright (2014)	Vicarious victimization measured using 8 variables whether participant witnessed or did not witness each variable	Longitudinal	Increasing levels of vicarious victimization was related to an increase likelihood of alcohol use by adolescents in the short term. Vicarious victimization did not have long term impact on any of the three types of substances assessed (alcohol, tobacco, marijuana). The moderating effects of family support were not consistent with GST.
Piquero & Sealock (2004)	Direct and vicarious abuse measured as additive variable in household	Cross-sectional	Respondents who reported more strain reported more delinquent activity. Mixed findings for negative emotions and delinquent acts. Female's anger was positively related to interpersonal aggression even when strain was not significant.
Turanovic & Pratt (2013)	Victimization measured using 3 items that captures the number of times each individual was victim of one or more violent acts during last 6 months	Longitudinal	Victims with low self-control are more likely to engage in substance use post-victimization. Low self-control and substance use exerted significant conditional effects on the pathway between victimization and offending.

Watts & McNulty (2013)	Physical and sexual abuse experienced before starting the 6 th grade.	Longitudinal	Sexual abuse a more robust predictor of criminal offending among males than females.
Topic 4: School-Based Victimization			
Author(s), Year	Operationalization	Study Design	Results
Button & Worthen (2014)	Anticipated and direct victimization measured	Cross-sectional	Victimization significantly increased the risk of poor academic performance, substance use, and suicidality. Males more likely to skip school out of fear, suggesting more males might be victims of “threatening victimization” or acts of intimidation. Overall, victimization experiences are significantly related to negative outcomes for LGBQ youth.
Button (2015)	Anticipated and direct victimization measured	Cross-sectional	Youth who identify as LGBQ were significantly more likely to report victimization and suicidality. Those who were victimized were 53.8% more likely to consider, plan, and/or attempt suicide than non-victimized LGBQ counterparts. Victimization is a risk factor for suicidality in LGBQ youth.
Button (2016)	Anticipated and direct victimization measured	Cross-sectional	52.6% of LGBQ reported victimization. Property victimization is most frequent. Strain of victimization increases risk for all three negative outcomes (poor academic performance, substance use, suicidality), even if they have social support.
Button & Worthen (2017)	Anticipated and direct victimization measured.	Longitudinal	Victimization increased the likelihood of weapon carrying in both LBGQ and hetero students. LBGQ more likely to be victimized and carry weapon to school. School victimization is a relevant source of strain related to weapon carrying (and social support does not moderate the relationship).
Elrod, Soderstrom & May (2008)	Directly measured victimization with 6-item scale.	Cross-sectional	Students who reported high levels of victimization, low levels of attachment to school, male, experienced greater levels of strain in their life, and felt most alienated from their peers were significantly more likely to engage in both in-school and out-of-school delinquency.

Moon & Morash (2017)	Directly measured victimization by whether respondents or family members experienced victimization of various crimes.	Longitudinal	3 strains (teacher's punishment, gender discrimination, and criminal victimization) increased delinquent behaviors (regardless of objective or subjective measurement).
Ousey, Wilcox & Schreck (2015)	Directly measured violent victimization by number of times respondent had been victim of violent crimes.	Cross-sectional	Violent victimization elevates overall amount of criminal offending and increases odds of violent rather than nonviolent behavior during criminal acts.
Thaxton & Agnew (2017)	Directly measured victimization with 4-item scale.	Cross-sectional	Criminal behavior more likely among those with a strong propensity for criminal coping and gang membership.
Zavala & Spohn (2013)	Vicarious and anticipated strain measured.	Cross-sectional	Vicarious victimization was significant predictor of offending. Anticipated strain only significant in predicting victimization, not future perpetration.
Topic 5: Sexual Assault, Stalking, and Intimate Partner Violence Victimization			
Author(s), Year	Operationalization	Study Design	Results
Carson, Sullivan, Cochran, Lersh (2009)	Directly measured early victimization by age at first sexual assault and age at first physical assault.	Cross-sectional	Positive correlation between age of first assault and negative emotions/problems with friends/family/school. Overall, youth sexually or physically assaulted at a young age used drugs more frequently and at a younger age (effects mediated by social bonds).
Ngo & Paternoster (2016)	Directly measured stalking by whether respondent had experienced any form of stalking in last 12 months.	Cross-sectional	Only some stalking experiences trigger negative emotional states (feeling frightened and physically sick most salient responses). Negative emotional states in response to strain can trigger legitimate coping mechanisms.
Sigfusdottir, Asgeirsdottir, Gudjonsson, & Sigurdsson (2008)	Sexual abuse was measured by whether or not the respondents experienced different forms of sexual abuse and the age they were when abuse occurred.	Cross-sectional	Exposure to strain (in form of sexual abuse) was associated with feelings of both anger and depressed mood among adolescents. Depressed mood resulting from sexual abuse is a stronger predictor of suicidal behavior, whereas anger resulting from sexual abuse is a stronger predictor of delinquency.
Zavala (2017)	Strain was measured by internalized homophobia, stigma, and discrimination.	Cross-sectional	Of the 3 criminological theories tested, only variables associated with GST (depression) predicted same sex intimate partner violence perpetration. Non-heterosexuals who witnessed their mother commit violence toward their fathers were more likely to report victimization, while

			heterosexuals who witnessed their father commit violence toward their mother were more likely to report victimization. Stressors unique to non-heterosexuals such as internalized homophobia, antigay violence, and discrimination, are positively correlated with perpetration.
Topic 6: Multiple/Non-Specific Sources of Victimization			
Author(s), Year	Operationalization	Study Design	Results
Agnew (2002)	Strain was measured as experienced, vicarious, and anticipated physical victimization.	Cross-sectional	Delinquency is strongly correlated with experienced and vicarious victimization for family and friends; moderately correlated with vicarious victimization in neighborhoods and schools, and anticipated victimization; weakly correlated with anticipated victimization. Delinquency and victimization have reciprocal effects on one another and are caused by many of the same third variables. Physical victimization is a major cause of delinquency.
Agnew, Scheuerman, Grosholz, Ison, Watson, & Thaxton (2011)	Victimization measured using a four-item scale.	Longitudinal	Findings showed that victimization reduced self-control, supporting GST as lower self-control can lead to more delinquency.
Baron (2004)	Directly measured violent victimization, robbery/property victimization, emotional, physical, and sexual abuse.	Cross-sectional	All causes of strain were significant predictors of crime, besides the violent victimization/self-efficacy relationship. Youth who suffered more emotional abuse and experienced more violent victimization reported more total crime when they had greater levels of self-efficacy.
Barrera, Gaga-a, & Pabayos (2016)	Aggregated index of violence, discrimination, sexual harassment, social exclusion, food deprivation, and depression.	Cross-sectional	Very few individuals subjected to violence or sexual harassment and resorted to delinquency. Depression was a significant mediator that triggered delinquent responses in those who experienced violence or harassment. Violent experience and sexual harassment lead adolescents to skip class. Mixed results overall.
Cudmore, Cuevas, Sabina (2017)	Polyvictimization operationalized as total number of victimizations that occurred in the past year.	Cross-sectional	Partial support for GST among Latino youth. Polyvictimization increases delinquency in part by affecting anger.
Gallupe & Baron (2009)	3 types of victimization measured.	Cross-sectional	Being ripped off by street friends and physical abuse were strong predictors of hard drug use. Impact of property victimization on drug use is greater when there is more

			support for deviancy. Physical victimization leads to soft drug use when they have less access to delinquent peers.
Jang & Johnson (2003)	Used a survey which had a list of 120 categories of life events, including criminal victimization.	Cross-sectional	Strain found to have positive effects on negative emotions, which in turn have effects on deviant coping. The direct effects of strain on general deviance, became insignificant once negative emotions controlled for. (Consistent with GST as negative emotions completely mediate the effects of strain on deviant coping)
Jang & Song (2015)	Composite measure of strain: experienced violent victimization, anticipated victimization, family strain, and neighborhood disorder were standardized and combined into a single index of objective strain.	Longitudinal	Higher levels of objective strain were indicative of subjective strain (self-reported perceptions of how stressed or how much of a hassle these objective strains were). Both measures of strain were significant predictors of anger and depression/anxiety; only anger was positively associated with delinquency and drug use.
Keith, McClure, Vasquez, Reed, & May (2015)	Childhood history of abuse measured by level of emotional, physical, and sexual abuse inflicted by parents before age 18, then summed. Victim of property or violent crime final scale ranged from 0-5, with 5 indicating the respondent experienced all victimizations.	Longitudinal	Gender identity is important for explaining the effect of strain on anger for males and females, but no effect on depression. Masculinity increases likelihood of anger while femininity decreases likelihood of anger.
Lo, Kim, & Church (2008)	Victimization was broken down into sexual, physical, and other victimization.	Longitudinal	Found support for developmental hypotheses of GST. Victimization's impact on drug use is not only drug specific but also dependent on type of victimization.
Manasse & Ganem (2009)	Victimization measured as 9-item scale.	Longitudinal	Victimization has a positive effect on later depression and delinquency, but the tendency to experience depression does not fully account for, or mediate, the relationship between victimization and delinquency.
Moon, Blurton, & McCluskey (2008)	Criminal victimization measured by asking respondents to report if either they have personally, or a family member had, experienced victimization in various types of crimes.	Cross-sectional	Both older and recent strains have significant effect on delinquency (contrary to Agnew's prediction that recent strains should have more significant effects on delinquency than older strains).
Peck (2013)	Criminal victimization measured as 5-item scale assessing the frequency of having a knife or gun pulled on them, being shit, cut, or stabbed, jumped, or gotten in a physical fight.	Cross-sectional	Criminal victimization was a significant predictor of depression; notable racial differences were found. Specifically, no measures of strain were significant predictors of depression for Hispanics; prejudice only

			significant for Blacks; familial suicide only significant for whites. Criminal victimization was a consistent predictor of nonserious delinquency.
Slocum, Simpson, & Smith (2005)	Violent victimization measured by summing the number of times respondent reported being attacked but did not attack anyone.	Cross-sectional	Different types of strains lead to different illicit behaviors. Women more likely to engage in violence when experience more negative life events and victimization. Nonviolent crimes and drug use more likely to occur when women exposed to higher levels of neighborhood strain and negative life events.
Spohn & Wood (2014)	Negative life events measured with a 10-item scale; harsh punishment measured by physical actions taken against the adolescent by parent or guardian; victim of assault measured to reflect recent victimization and victimization that occurred more than a year ago.	Cross-sectional	Neither victimization nor negative life events increased serious delinquency among African Americans. Victimization and negative life events increased serious delinquency of whites while recent victimization and negative life events increased serious delinquency of Hispanics (suggesting that the effects of victimization and negative life events are not impacted by cultural norms related to parenting or discipline).
Vigesaa (2013)	"Goal blockage" measured as whether or not the respondent had financial problems prior to incarceration. "Removal of positive valued stimuli" measured by marital status (if respondent was divorced/separated/widowed) and unemployment prior to college. "Noxious stimuli" measured childhood and adulthood abuse (in terms of physical, sexual, and emotional).	Cross-sectional	Strains associated with addition of noxious stimulus (adult abuse) were a significant predictor of illicit drug related offenses and incarceration. No significant differences between child and adult abuse histories by race.
Yilmaz, Lo, & Solakoglu (2015)	Violent victimization measured as continuous variable with number of times in the past 12 months the respondent had been the target of physical violence.	Cross-sectional	GST supported outside of the US. Likelihood of cigarette smoking among teens increased as measures of strain and negative affect increased. Boys were more likely to smoke than girls, suggesting males are less prepared to respond to strain with legitimate behaviors.

**ASSESSING GENERAL STRAIN THEORY AND MEASURES OF
VICTIMIZATION, 2002-2018**

- Strong correlation between direct physical experiences of victimization and substance use, bullying, and delinquent behaviors.
- How victimization and outcome measures operationalized appear to condition the nature of their relationship.
- Still unclear whether the source, frequency, or severity of victimization the more salient factor.
- Cross-sectional studies more frequent, and results tend to show stronger support of GST.