

Exploring the Relationship Between Childhood Adversity, Self-Worth, and Criminal
Identification in a Mixed Gender Sample of Adolescent Offenders

by

Shreena Thapa

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Shreena Thapa

Abstract

Research regarding the impact that childhood adversity and criminal identification (criminal associates and criminal attitudes) has on self-worth, and how that relationship may ultimately lead to criminal activity differently in justice involved female youth versus justice involved male youth is scarce (Bonta & Andrews, 2017; Van Voorhis, 2012). This study examined (1) if childhood adversity influences self-worth, which in turn leads to recidivism and higher levels of self-reported aggression and (2) whether self-worth strengthens or weakens the relationship between criminal identification and recidivism. Archival data involving 312 justice involved youths from Ontario found that self-worth did not mediate the relationship between childhood adversity and recidivism or self-reported aggression. However, an interesting three-way interaction emerged between gender, self-worth and criminal attitudes. Specifically, while self-worth buffered the relationship between criminal attitudes and recidivism among females, self-worth magnified the relationship between criminal attitudes and recidivism among males. As suggested by gender responsive scholars, positive self-worth appears to be an important treatment target for females that can buffer the risk to re-offend but as suggested by gender neutral scholars may serve to inflate risk among justice involved male youth who also evidence criminal attitudes.

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Exploring the Relationship Between Childhood Adversity, Self-Worth, and Criminal Identification in a Mixed Gender Sample of Adolescent Offenders

Overview

Females commit fewer crimes than males (Belknap, 2015; Blanchette & Brown, 2006). Further, males are more likely to be associated with extreme forms of violence such as homicide and violent assaults (Burman, Batchelor, & Brown, 2001). In part, due to the fact that female's involvement in violence and crime is less prevalent and less serious compared to males, theories of delinquency have generally overlooked females (Belknap & Holsinger, 2006; Burman et al., 2001; Day, Zahn, & Tichavsky, 2015). If female criminal conduct was discussed, it was attributed to pathological causes, whereas, male criminal conduct was attributed to socio- economic contexts (Brown, Blanchette, & Dean, in press). It has also been argued that traditional theories of crime fail to explain the observed gender differences in offending patterns (Steffensmeier & Allan, 1996).

Between the 1900s and mid 2000s, female arrest rates substantially increased (Wattanaporn & Holtfreter, 2014). In the United States, approximately 11, 212 adult females were incarcerated in 1977 and by 2004 that number increased to 96,125 (Frost, Greene, & Pranis, 2006). Similarly, in the Canadian context, 15% of adults charged in 1979 were females, rising to 21% in 2009 (Mahony, 2011). Females were primarily arrested for crimes such as fraud, embezzlement, and forgery (Heimer, 2000). Although arrest rates show that female offending is on the rise, the National Crime Victimization Survey (NCVS) demonstrates that males commit more crimes than females (Schwartz & Steffensmeier, 2012). Additionally, recent changes in law enforcement practices (less tolerance of low-level crime), and the criminalization of domestic and school violence

has disproportionately represented females in the criminal justice system (Steffensmeier, Schwartz, Zhong, & Ackerman, 2005). Hence, the notion that female crime is increasing has not only contributed to the interest in studying female criminality but has also made it crucial to better understand female offending to improve assessment and rehabilitation efforts for female offenders—a field of study generally known as gender responsive correctional psychology (Heilbrun et al., 2008; Hubbard & Pratt, 2002).

Two key treatment targets that gender responsive scholars underscore as being particularly important for female offenders are childhood adversity (e.g., abuse, neglect, parental criminality/ substance abuse) and low self-worth (usually defined as low self-esteem and/or low general self-efficacy) (Van Voorhis, 2012). The importance of self-worth and childhood adversity in the context of correctional rehabilitation is highly debated between gender-responsive (Day et al., 2015; Van Voorhis, Wright, Salisbury, & Bauman, 2010) and mainstream correctional researchers (Dowden & Andrews, 1999). In brief, mainstream correctional research encompasses correctional scholars who study criminal conduct under the working assumption of gender neutrality.

Some gender-responsive researchers argue that self-worth is a protective factor that buffers the risk of recidivism (Blanchette & Brown, 2006; Bloom, Owen, & Covington, 2003; Van Voorhis, 2012). However, mainstream correctional researchers do not identify self-worth as a primary risk factor or a potential protective factor in explanations of criminal conduct for either gender (Andrews et al., 2012; Bonta & Andrews, 2017; Dowden & Andrews, 1999; Rettinger & Andrews, 2010). However, Bonta and Andrews (2017) recently acknowledged that the role of self-esteem and criminal conduct is complex and requires further investigation. Relatedly, in contrast to

gender responsive researchers such as Van Voorhis (2012) who conceptualize high self-worth as a protective factor, Wormith (1984)—a mainstream correctional researcher- has argued that high self-worth is a risk factor that worsens the already negative impact that criminal identification (e.g., criminal attitudes and criminal associates) exerts on criminal conduct.

Consequently, the general aim of this study was to better understand the potential role that self-worth plays in externalizing behaviours, namely recidivism and self-reported aggression and whether its role varies as a function of gender. More specifically this study examined if (1) self-worth mediates the relationship between childhood adversity and externalizing behaviour (i.e., criminal recidivism and self-reported aggression) and (2) if self-worth either strengthens or weakens the relationship between criminal identification and criminal recidivism. Each general research question also explicitly examined the moderating role of gender.

The literature review for this study begins with definitions surrounding self-worth, criminal identification, childhood adversity, and poor parenting practices. A brief discussion on gender differences in self-worth is also included. The study then reviews mainstream correctional research (Risk-Need-Responsivity focused) and gender-responsive research. Additionally, the literature review then examines research regarding the link between 1) self-esteem, aggression, and criminal conduct, 2) self-efficacy, aggression, and criminal conduct, 3) criminal identification (criminal attitudes and criminal associates) and criminal conduct, 4) childhood adversity and criminal conduct, and 5) poor parenting practices and criminal conduct. Furthermore, the literature review

will also highlight the differences in the views of self-worth between mainstream correctional and gender-responsive researchers.

Defining Self-worth

According to Burns (1979), self-worth is the combination of perceived capabilities and worthiness. Moreover, Hulls and Wedemeyer (1980) conceptualized self-worth as a facet of self-esteem that includes feelings of worthiness and self-respect. Likewise, terms such as self-efficacy, competence, and power over one's situation have also been used to define self-esteem (Bandura, 1977; James, 1890). Furthermore, Rogers (1951) and Rosenberg (1965) have defined self-esteem as either one's attitude of acceptance of the self and feelings of worth or the rejection of the self and feelings of unworthiness. Although some gender responsive researchers (e.g., Bloom et al., 2003) consider self-esteem and self-efficacy to be the same construct and often use these terms interchangeably, other gender responsive researchers (Van Voorhis, 2012) and Risk-Need-Responsivity (RNR) researchers (Andrews & Bonta, 2006) acknowledge that these constructs are distinct.

Hence, this study will use the term self-worth as a general over-arching term to encompass self-esteem and self-efficacy. Furthermore, the study will test self-esteem and self-efficacy separately since the study considers self-esteem and self-efficacy as distinct constructs that produce distinct outcomes for males and females. If self-esteem and self-efficacy are combined, then the study cannot observe if differences in scores is due to differences in self-esteem or self-efficacy since participants were administered both the *Self-Esteem Scale* (RSES; Rosenberg, 1965) and the *Self-Efficacy Scale* (GSES; Bosscher & Smit, 1998).

Defining Self-Esteem

William James (1890) described self-esteem as a ratio that reflects our total estimation of “pretensions” divided by our “successes” (p.310). Self-esteem is also defined as a theoretical construct that can be quantified as the total affective assessment of a person’s self-worth, importance, or value (Robinson, Shaver, & Wrightsman, 2013). Initially, self-esteem was considered as a trait and was mainly assessed in terms of high, medium, and low degrees. However, researchers have underscored the situational (domain-specific) and general (global) variations in self-esteem, and have started to assess self-esteem in terms of states in addition to traits (Mruk, 2013). Self-esteem is primarily measured by standardized self-reports, observations, and interviews (Guindon, 2002). The most consistent and frequently used assessments of self-esteem are the *Self-Esteem Scale* (SES; Rosenberg, 1965) and the *Self-Esteem Inventory* (SEI; Coopersmith, 1981).

Defining Self-Efficacy

Albert Bandura (1977) coined the term self-efficacy as a person’s belief in being able to take charge of situations and events in their life. Researchers have studied self-efficacy with regards to school performance, problem solving, and other conventional activities where self-efficacy is linked to increased performance and positive social adjustment (Brezina & Topalli, 2012). Self-efficacy has normally been studied as being either task specific or domain specific (Luszczynska & Schwarzer, 2005). Task specific refers to the belief in a person’s ability to perform a specific action, whereas, domain specific refers to perception of self-efficacy across behavioral domains (McAvay, Seeman, & Rodin, 1996). However, a generalized view of self-efficacy has been

theorized by some researchers known as *General Self-Efficacy* (GSE) that reflects a generalization across diverse realms of performance and how people judge their efficiency (Luszczynska & Schwarzer, 2005). Some common measures are the *Generalized Self-Efficacy Scale* (GSES; Schwarzer & Jerusalem, 1995), *New General Self-Efficacy Scale* (NGSES; Chen, Gully, & Eden, 2001), and *General Self-Efficacy Scale* (SGSE; Sherer et al., 1982).

Do Males Evidence Higher Self-Worth Than Females?

There has been considerable research examining gender and self-esteem. Researchers have generally assumed that females have lower levels of self-esteem in comparison to males (Kling, Hyde, Showers, & Buswell, 1999). For example, Gentile, Grabe, Dolan-Pascoe, and Wells (2009) conducted a meta-analysis of 115 ($N=32,486$) studies examining gender differences in ten specific domains of self-esteem (physical appearance, athletics, academics, family, social acceptance, behavioural conduct, affect, personal self, self-satisfaction, and ethics and morality). The study yielded 428 effect sizes and found that males scored significantly higher in physical appearance, athletics, personal self, and self-satisfaction. Whereas, females scored significantly higher only in two domains—behavioural conduct, and ethics and morality. Similarly, researchers have reported that males have higher level of self-efficacy than females (Wigfield, Eccles, & Pintrich, 1996). Schunk and Lilly (1984) examined gender differences in mathematical achievement of 60 students from grade six ($N = 30$; males = 15, females = 15) and grade 8 ($N = 30$; males = 15, females = 15). A pre-test self-efficacy judgment was measured using a similar questionnaire previously used by Bandura and Schunk (1981) at the beginning of the study. Results revealed that females entered the experiment with lower

self-efficacy than males. Additionally, Wigfield et al. (1996) posit that boys tend to be more confident of their abilities than females.

Although research examining gender differences in self-worth hypothesize that males have higher self-worth than females, there is limited research examining how self-worth impacts males and females differently. In addition, there is a lack of research examining self-worth in offender populations. However, gender responsive researchers have emphasized the need to examine self-worth and how it impacts offending behaviours (Blanchette & Brown, 2006; Covington & Bloom, 2006; Salisbury & Van Voorhis, 2009).

Defining Criminal Identification

The term criminal identification has been generally used to define identification with criminal others as well as holding criminal attitudes and beliefs (Wormith, 1984). In correctional psychology, the term antisocial cognition has been used to refer to an offender's attitudes, beliefs, thinking pattern, and rationalizations of crime (Andrews & Bonta, 2010; Rettinger & Andrews, 2010; Simourd & Andrews, 1994). Criminal attitudes support criminal conduct and considers violation of laws as an acceptable act (Bonta & Andrews, 2017; Rettinger & Andrews, 2010). Additionally, criminal attitudes assign positive appraisals to criminal behaviour and criminal others (Bonta & Andrews, 2017). Likewise, the term antisocial associates refer to an offender's association with pro-criminal individuals (Andrews & Bonta, 2010; Bonta & Andrews, 2017; Rettingers & Andrews, 2010). Hence, this study uses the term criminal identification when discussing criminal associates and criminal attitudes collectively.

Defining Childhood Adversity

Childhood adversity is a broad all-encompassing term reflective of various forms of abuse, trauma, and household dysfunction. Between 1995 and 1997, The Centers for Disease Control and Prevention (CDC) along with the Kaiser-Permanente San Diego Health Appraisal Clinic collaborated to undertake a large-scale study on childhood abuse and neglect, as well as household dysfunction on health outcomes and well-being in later-life (Centers for Disease Control and Prevention, n.d.). The goals of the study were to assess risk factors and incidence of diseases, quality of life, health care use, and mortality. With a sample of over 17,000 members of which 54% were females, a questionnaire regarding childhood abuse, household dysfunction, and current health status and behaviour was administered. The questionnaire which was called *Adverse Childhood Experiences* (ACEs), was first created and studied by Felitti, Robert, Anda, and Nordenberg et al. (1998). The results of the study revealed that 52% of the sample reported having at least one adverse childhood experience (i.e., childhood abuse, trauma, neglect, and household dysfunction) and 6.2% reported 4 or more (Felitti et al., 1998).

Adopting the definition of *Adverse Childhood Experiences* (ACEs) by Felitti et al. (1998), the Centers for Disease Control and Prevention (n.d.) list the following ten childhood experiences as part of ACEs: emotional abuse, sexual abuse, physical abuse, emotional neglect, physical neglect, witnessing domestic violence, household substance abuse, parental separation/divorce, household mental illness, and the presence of a household member with a criminal record. Other researchers (Finkelhor, Turner, Shattuck, & Hamby, 2015; Pinto, Correia, & Maia, 2014) have used the ACE or components of the ACEs in various versions and illustrated that the ACE measure was reliable and valid. Moreover, research using the ACE with justice involved youths have

demonstrated higher prevalence rates of adversity and trauma compared to the general population (Abram et al., 2004; Dierkhising et al., 2013). Since ACEs assesses childhood abuse and family/household dysfunction, as well as neglect (Baglivio, Wolff, Piquero, & Epps, 2015) the current study uses an ACE proxy measures from different domains of the Youth Assessment Screening Instrument (YASI; Orbis Partners, 2000) to capture childhood adversity.

Defining Poor Parenting Practices

Although poor parenting practices is considered a facet of adverse childhood experiences, factors such as inconsistent discipline, lack of parental supervision, and poor relations with parents, are not captured by ACEs. Research related to poor parenting practices has shown similar adverse outcomes as adverse childhood experiences (ACEs) among youths (Chilocat & Anthony, 1996; Cohen, Richardson, & LaBree, 1994). Additionally, research has also postulated that inadequate monitoring or discipline may promote criminal tendencies in children (Simons, Simons, Chen, Brody, & Lin, 2007). Therefore, in the present study a global index of poor parenting practices is examined distinctly from childhood adversity.

The Risk, Need, and Responsivity Model of Offender Rehabilitation

The risk-need-responsivity (RNR) model of offender rehabilitation developed by Andrews, Bonta, and Hoge (1990) has been the foundation for many empirically derived rehabilitative treatment programs in Canada and abroad. The RNR model is based on a gender-neutral perspective known as the general personality and cognitive social learning theory of criminal conduct (GPCSL; Bonta & Andrews, 2017). The RNR posits that the factors that predict criminal behaviour are the same for males and females (Andrews &

Bonta, 2006; Rettinger & Andrews, 2010). In brief, the risk principle states that treatment should be proportional to the offender's level of risk, the need principles tells us what to treat—dynamic risk factors/criminogenic needs, and responsivity informs us how to treat—cognitive behavioural therapy (CBT) in a firm but fair environment.

Within the RNR framework, risk factors can be classified as static or dynamic. Static risk factors are those aspects of an individual that cannot be changed such as previous criminal history, gender, and age at first offense. Dynamic risk factors can be changed, and when changed lead to reductions in recidivism. Dynamic risk factors are also called criminogenic needs (Andrews & Bonta, 2006; Rettinger & Andrews, 2010). Dynamic factors that are minimally or not related to criminal behaviour are non-criminogenic needs. The need principle underscores that effective treatment programs should target dynamic risk factors (i.e., criminogenic needs as opposed to non-criminogenic needs) to reduce recidivism. (Andrews & Bonta, 2006; Rettinger & Andrews, 2010).

Bonta and Andrews (2017) categorize the major risk factors associated with criminal conduct into the *Central Eight*: Criminal history, anti-social behaviour, anti-social attitudes, anti-social peers, education/employment, family/marital status, leisure/recreation, and substance abuse. The only static factor from the *Central Eight* is criminal history and the remaining seven factors are criminogenic needs. Notably self-worth, alongside major mental disorder, and physical health are classified as non-criminogenic needs. Additionally, Andrews and Bonta (2003) categorized self-esteem as personal distress—a non-criminogenic need. However, mainstream correctional researchers also recognize the importance of developing positive self-efficacy to acquire

prosocial skills (Brown et al., 2017). However, recently Bonta and Andrews (2017) recognize that there is mixed opinion in the literature regarding self-esteem. While some researchers (e.g., Baumeister, Bushman, & Campbell, 2000) argue that high self-esteem leads to aggression, other researchers (e.g., Donnellan, Trzesniewski, Robins, Moffit, & Caspi, 2005) argue that low self-esteem leads to aggression. Thus, the relationship between self-esteem and offending behaviour is unclear (Ostrowsky, 2010).

The Gender Responsive Model of Offender Rehabilitation

An increasing body of research based on a feminist orientation that focuses on correctional policies and programs for females is known as gender responsive research (Gobeil, Blanchette, & Stewart, 2016). Gender responsive researchers advocate for a gender-specific approach to risk assessment and treatment services (Vitopolous, Peterson-Badali, & Skilling, 2012). Furthermore, they argue that an integrative approach is required where the RNR model in its current form needs to be modified so that gender differences are taken into consideration (Blanchette & Brown, 2006). According to Blanchette and Brown (2006) risk assessment tools not validated for females may not capture important hypothesized female relevant factors such as self-esteem, self-efficacy, depression, relationships, trauma, victimization, and parental issues— that are inherently related either to the prediction of female delinquency or are required to maximize female offender rehabilitation efforts. Such factors are generally not seen as risk factors in men, however, some argue that self-worth and adverse childhood experience play a pivotal role in female offending (Geraghty & Woodhams, 2015).

Hence, gender-responsive scholars argue that the risk and need instruments derived from theories of male offenders fail to recognize service areas that are

specifically critical to female offenders (Reisig, Holtfreter, & Morash, 2004). Since assessment is critical in matching program interventions with an individual's needs, a gender specific approach towards risk assessment and treatment needs to be in place as females have distinct needs (Vitopolous et al., 2012). Using assessment tools developed by the results of male-centered theories can have negative outcomes for females as the risk predicted may be over classified (Reisig et al., 2006). Additionally, under classification may also impede rehabilitative efforts as females may not receive adequate services.

Gender responsive researchers are also largely informed by the feminist pathways theory that state that female's biological, psychological, and socio-aspects are unique to female life experiences (Salisbury & Van Voorhis, 2009). Feminist pathways theory posits that factors associated with female criminality are not typically seen in men, and argue that gender neutral theories of crime have overlooked gender-specific and gender-salient factors in predicting criminal behaviour (Belknap & Holsinger, 2006; Reisig et al., 2006). In general, gender specific risk factors are related to recidivism for only one gender, whereas, gender-salient factors predict recidivism in both genders albeit to different degrees (Brown & Motiuk, 2008).

Additionally, the feminist pathways theory is heavily influenced by Daly's (1992) female crime pathways framework. According to Daly (1992, 1994) females commit crimes due to life circumstances that are unique to them. Using 80 pre-sentence investigation reports and sentencing transcripts to construct life histories of 40 women and 40 men, Daly identified five pathways that distinguish female pathway to crime from males.

(1) *Street Woman*: This pathway identifies females that run away from home as a youth and have histories of substance abuse and participate in prostitution and drug dealing.

(2) *Drug Connected Women*: This pathway identifies females who use, manufacture, and could also be trafficking drugs due to their involvement with intimate partners or family members that abuse drugs.

(3) *Harmed or Harming Women*: This pathway includes women who have faced childhood abuse and continue to be victimized as adults, have acted out violently, abused substances in order to cope, and present with mental health issues.

(4) *Battered Women*: Women who have experienced and continue to experience domestic abuse are said to follow the battered women pathway. Women in this pathway used violence to escape from their intimate partners.

(5) *Other*: This category of women also known as economically motivated women consists of females who simply commit crimes due to greed, and they do not have any history of abuse or victimization. While most of the support for this model has been qualitative (see Belknap, 2015) there is some quantitative support (Reisig et al., 2006; Salisbury & Van Voorhis, 2009)

In sum, advocates of RNR classify self-esteem and self-efficacy as personal distress variables that do not predict recidivism and thus should be not considered dynamic treatment targets. However, many gender responsive researchers conceptualize low levels of self-esteem and self-efficacy as dynamic risk factors for female offenders (Blanchette, 2002; Salisbury, Van Voorhis, & Spiropoulos, 2009). Subsequently, many correctional programs designed for women target self-esteem and self-efficacy

(Covington & Bloom, 2006; Task Force on Federally Sentenced Women, 1990; Van Voorhis, 2001).

Conceptualizing Self-worth as a Strength/Protective Factor

Historically, correctional psychology has maintained attention on personal deficits (e.g., static and criminogenic risk factors) when considering the risk to recidivate (Jones, Brown, Robinson, & Frey, 2015). In addition, strengths have been viewed as the absence of a criminogenic need (Harris & Rice, 2015). Definitional issues somewhat confound the field of strength-based research; many researchers use different terms (e.g., strength, protective factor, and promotive factor) sometimes interchangeably and sometimes to connote different meanings. Protective factors are variables that interact with risk factors to reduce negative outcomes (Masten, 2001). Furthermore, Rutter, Giller, and Hagell (1998) conceptualized protective factors as variables that interact with an individual's risk level.

Jones et al. (2015) conceptualize the term strength, as an umbrella term that describes protective and promotive factors; protective factors are said to buffer risk of offending in a high-risk group, and exert low or no impact in a low risk group (Jones et al., 2015). In contrast, promotive factors include variables that are negatively associated with recidivism regardless of one's risk level (Farrington, 2003). Hence, for this study the umbrella term strength was used to encapsulate both promotive and protective factors. The term promotive factor was used to describe factors that negatively correlate with recidivism. Lastly, the term protective factor was used to describe factors that buffer criminal outcome in a high-risk group.

To implement effective intervention and programs targeted towards female offenders, Hart, O'Toole, Price-Sharps, and Shaffer (2007) mentioned that it is crucial to understand how risk, promotive, and protective factors impact female offenders differently from males. Scott (2017) examined whether the strength domains of the Youth Assessment Screening Instrument (YASI; Orbis Partners, 2000) had a protective effect on risk factors. In brief, 254 youths (males = 148, females = 106) were sampled and data was further disaggregated by gender. Results revealed that strength scores from the YASI did not evidence a protective effect but the strength scores did evidence a promotive effect, but largely for males rather than females. Additionally, gender responsive researchers (Covington & Bloom, 2006; Hannah-Moffat & Shaw, 2001) recommend correctional interventions and programs to incorporate strengths to empower women and enhance their self-worth.

Self-Esteem, Aggression, and Criminal Conduct

The link between self-esteem, aggression, and criminal conduct has sparked debate amongst various researchers (Baumeister, Campbell, Krueger, & Vohs, 2003). A long-established view in psychology is that low self-esteem leads to aggression (Bushman, Baumeister, Thomaes, Ryu et al., 2009). Further there is some empirical evidence linking low self-esteem to aggression and antisocial behaviour (Adler, 1956; Horney, 1950). However, Baumeister et al. (2003) has concluded that the evidence is mixed.

A series of studies by Donnellan et al. (2005) explored the link between low self-esteem and externalizing behaviours such as delinquency, aggression, and antisocial behaviour in a sample of adolescents and college students from the United States and

New Zealand. The first study utilized a cross-sectional design with 292 youths from two schools in northern California. The researchers observed a negative correlation between self-esteem and delinquency ($r = -.35$)—i.e., low self-esteem was correlated with higher levels of delinquency. However, the researchers did not disaggregate the results by gender.

Similarly, Moffitt, Caspi, Rutter, and Silva's research (2001) utilized a longitudinal design with 812 youths aged 11 (78% males, 48% females) and 736 youths aged 13 (71% males, 48% females) who completed the self-esteem measure as part of the *Dunedin Multidisciplinary Health and Development Study*. Using a parent and teacher rated report of externalizing problems, results indicated that self-esteem was negatively correlated with the reports by parents at age 11 ($r = -.18$) and at age 13 ($r = -.27$). In addition, self-esteem negatively correlated with teacher reports at age 11 ($r = -.16$) and at age 13 ($r = -.18$). Meaning that low levels of self-esteem was related to delinquency and externalizing behaviour. However, the researchers did not disaggregate the results by gender.

Looking at offender populations, Garofalo, Holden, Zeigler-Hill, and Velotti (2016) sampled 153 violent male inmates across prisons in northern Italy along with 197 male community members to determine whether self-esteem had an indirect association with aggression. Using measures like the *Rosenberg Self-Esteem Scale* (RSES; Rosenberg, 1965) and the Aggression Questionnaire (AQ; Buss & Perry, 1992) results indicated that the inmates reported lower levels of self-esteem than community members. Additionally, low self-esteem was negatively associated with physical aggression, anger, and hostility in both the inmate sample and the community sample. Moreover, examining

the mediating role of emotional dysregulation with self-esteem as the predictor, the combination of impulse and anger (specific dimensions of emotional dysregulation) was related to physical aggression and anger in the inmate sample. However, in the community sample, results of the mediating role of emotional dysregulation revealed that impulse was independently related to physical aggression and both impulse and emotion regulation strategies were related to hostility. Furthermore, results indicated that the inmate sample showed marginally higher levels of physical aggression compared to the community sample. However, this study did not include female comparison groups. Thus, more research needs to be conducted involving female offenders.

In contrast, Baumeister, Smart, and Boden (1996) have argued that “high self-esteem” (typically operationalized as narcissism, unstable self-esteem, threatened egotism) is a better predictor of aggression and crime than low self-esteem. According to Baumeister and colleagues (1996), the term narcissism refers to self-love, but psychological terminology has also combined exaggerated egotism to the definition. Additionally, Wink (1991) suggested that narcissism includes factors such as disregard for others and grandiosity. Research pertaining to how inflated view of self compares to positive views of the self generally seen in non-violent population is scarce.

To test the hypothesis that high self-esteem (defined by narcissism) rather than low self-esteem predicts aggression Donnellan et al. (2005) sampled 3,143 undergraduates. Results from this cross-sectional study showed that self-esteem was negatively correlated with aggression ($r = -.30$) and narcissism positively correlated with aggression ($r = .18$). Hence, low self-esteem was associated with aggression, however, high levels of narcissism was related to aggression. Nevertheless, this study did not

examine gender differences. In addition, Baumeister et al. (1996) suggest that high self-esteem coupled with threatened egotism causes one to act aggressively. Similarly, Baumeister, Bushman, and Campbell (2000) proposed that people with high self-esteem can be on either side of the continuum of aggression (i.e., they can be too aggressive or non-aggressive). Hence, the views on the relationship between self-esteem and aggression are complex.

The link between low self-esteem and delinquent/criminal outcomes among females is understudied. But there is research to suggest that like their male counterparts, low self-esteem is related to delinquency and criminal conduct. Kort-Butler (2006) sampled 14,738 (55% males and 49% females) high school students using the *National Longitudinal Study of Adolescent Health* to examine the effect of self-esteem on delinquency. Questionnaires comprising of status offenses (e.g., running away), minor delinquency (e.g., theft, vandalism), and violent delinquency (e.g., robbery, assault) in boys and girls were administered. Cross sectional analyses revealed that boys had higher self-esteem than girls. Additionally, when examining the effect of self-esteem and stress on delinquency, a negative effect was observed for girls only—i.e., low self-esteem was associated with delinquency in females; there was no relationship between the effects of self-esteem and stress on delinquency for males.

One meta-analysis by Larivière (1999) showed that low self-esteem was associated with criminal behaviour for female offenders. Larivière (1999) identified six correlational and predictive studies (one study was predictive in nature) that sampled all women offenders and indicated a negative correlation between self-esteem and criminal behaviour for women offenders ($r = -.38$). Lastly, Van Voorhis (2012) tested the

predictive validity of self-esteem and recidivism and showed that self-esteem was significantly associated with recidivism in three separate samples of women offenders in the United States (r 's ranged from -.10 to -.22). Thus, results evidenced that low self-esteem was associated with higher recidivism in female probationers.

Consistent with Baumeister et al. (1996), Wormith (1984) has argued that high self-esteem may be a risk rather than a protective factor in the context of criminal offending. In fact, Wormith (1984) conducted one of the most commonly cited studies used to support the non-criminogenic status of self-esteem (and potentially harmful effects of treating self-esteem among offender populations). Wormith (1984) examined the effects of a behavioural self-control program with 50 low risk adult male offenders (minimum security classified) to reduce recidivism. Wormith administered several self-report questionnaires pre-and post-treatment including measures of self-esteem and criminal identification (criminal attitudes and associates). Consistent with past self-esteem research, a three-year follow-up revealed that overall there was a negative correlation between self-esteem and recidivism ($r = -.30$). Noteworthy, a 2 x 2 ANOVA revealed a significant interaction between self-esteem and criminal identification. Specifically, offenders who evidenced an increase in *both* self-esteem and criminal identification evidenced more criminal recidivism than those offenders who evidenced decrease in self-esteem. However, changes in self-esteem was not associated to recidivism for offenders that evidenced decrease in criminal identification.

Wormith (1984) speculated that increases in self-worth among offenders who seemingly adapt to the prison environment as evidenced by increases in criminal identification are particularly high risk to re-offend. On the other hand, he argues that

increases in self-esteem among offenders who reject institutional lifestyle may reduce future anti-social behaviour. In conclusion, he cautions focusing solely on self-esteem in offender populations without fully considering how self-esteem interacts with other core criminogenic risk factors. Nevertheless, it should be noted that the study only used a small sample size ($N = 50$) consisting of low risk male offenders. How self-esteem influences offenders with varied risk levels, and if it may act as a strength as opposed to an aggravating factor among both female and male offenders is understudied.

Self-Efficacy, Aggression, and Criminal Conduct

Aggression is defined as an act that requires the aggressor to perceive the harm that their behavior will cause to others (Bushman & Anderson, 2001). As per the definition of self-efficacy in the context of aggression—self-efficacy can be defined as having beliefs that favour aggressive behaviour (Bandura, 1977). To explore the link between aggression and perception of self-efficacy Perry, Perry, and Rasmussen (1986) conducted a study with 160 children from grades four to seven. They further divided the students in 4 groups of 10 students—10 aggressive boys, 10 aggressive girls, 10 nonaggressive boys, and 10 nonaggressive girls based on aggression scores (highest scoring boys and girls were classified as aggressive) on the *Peer Nomination Inventory* (Wiggins & Winder, 1961). A self-efficacy questionnaire consisting of 46 items describing social situations that the students could indicate as having the ability to perform the specified behaviour in a prosocial way or antisocial was administered to the students. In addition, an outcome-expectations questionnaire that measured the children's expectations of the consequences of aggressive behaviour was also administered.

Results revealed that aggressive children were more confident of their ability to behave aggressively than nonaggressive children. A marginally significant gender difference was observed where girls reported difficulty in behaving aggressively. Furthermore, aggressive children felt strongly that aggression leads to positive outcomes for themselves. Gender differences were observed where males ($M = 8.0$) were more confident than females ($M = 7.3$) that aggression would result in tangible success. However, there was no correlation between reinforcing outcomes of aggression and perception of self-efficacy for aggression. Hence, it is suggested that perception of one's self-efficacy and expectations of positive outcomes provide distinct contributions to aggression.

In contrast, gender responsive scholars argue that self-efficacy plays an active role in women's criminal behaviours, but differently—in a positive way— than the research reviewed above. Instead of focusing on criminal self-efficacy, gender responsive researchers view general positive self-efficacy (believe in one's ability to succeed in general) as an important treatment target that can reduce future criminal offending. In fact, very limited research exists about the importance of self-efficacy in reducing recidivism in females (Rumgay, 2004). Additionally, Van Voorhis (2012) tested the predictive validity of self-efficacy and recidivism and showed that self-efficacy was significantly associated with recidivism in a sample of women probationers from Maui ($r = -.16$), Minnesota ($r = -.22$), and Missouri ($r = -.14$). Thus, results indicated that low-self efficacy was associated with criminal recidivism for female probationers. However, there remains a paucity in research examining protective factors associated with beliefs of self-efficacy in offender populations (Tangeman & Hall, 2011).

Criminal Identification and Criminal Conduct

Criminal identification is a composite term first used by Wormith (1984) to encompass both criminal attitudes and criminal associates. According to the *Central Eight* risk and need factors, antisocial cognition and antisocial associates are among the *Big Four* factors (Andrews & Bonta, 2010; Bonta & Andrews, 2017) that have the greatest impact on recidivism. Hence, to examine the association between risk factors and nine predictor domains (social context, academic factors, social functioning, family factors, substance use, antisocial behaviour, antisocial attitudes, mental health, and child maltreatment) and delinquency and general recidivism, Green (2006) conducted a meta-analysis of 83 studies of which 47 studies disaggregated data by gender. Results indicated that antisocial attitudes and substance abuse (both had an effect size estimate of .36) were the strongest predictors of general delinquency for both males and females. Additionally, the strongest predictor for general recidivism based on one effect size was antisocial attitudes for males ($r = .32$) and females ($r = .19$). However, Green's between group differences could be biased since two studies reported effect sizes for females only and 34 studies for males only. There is potential for additional group differences emerging that favour gender differences, since the inclusion of males and females remove the between group differences.

In addition, Hubbard and Pratt (2002) conducted a meta-analysis to identify risk factors for delinquency solely on adolescent female offenders. Eleven studies conducted between 1982 and 1998 were identified (authors did not mention whether studies were correlational or longitudinal) and produced a total of 97 effect sizes. Risk factors were categorized into four components 1) the *Big Four* (historically posited to be the strongest

predictors of delinquency)—history of antisocial behaviour, antisocial peers, antisocial attitudes, and antisocial personality, 2) social structures—age, socioeconomic status, 3) social factors—family relationships, social relationships, physical or sexual abuse, and 4) behavioural factors—self-image, social adjustment, anxiety, and IQ. Utilizing the Fisher's Z transformation of r , a large effect size (based on two effect sizes) was reported for antisocial peers ($Zr = .53$) and a small effect size (based on three effect sizes) was reported for antisocial attitudes ($Zr = .18$). Hence, Hubbard and Pratt (2002) concluded that consistent with prior research, factors predictive of male offending predict female offending as well. A drawback of this meta-analysis is that there were no studies that included a male comparison group to account for gender differences. Additionally, the meta-analysis included very few studies to confirm that predictors of offending are similar for both males and females.

Conversely, to examine whether gender differences existed on correlates of delinquency, a meta-analysis was conducted by Simourd and Andrews (1994) involving general risk factors (e.g., lower social class, personal distress, and delinquent peers/attitudes) and other factors (e.g., accommodation problems, victimization, and lack of hobbies/involvement). Sixty studies that sampled male and female youths on the same risk factors and disaggregated the data by gender produced 464 effect sizes. In brief, results revealed that a combined measure of antisocial attitudes and peers was strongly associated with delinquency in both males ($r = .40$) and females ($r = .39$).

Moreover, Olver, Stockdale, and Wormith (2014), conducted a meta-analysis of 128 studies ($N = 137,931$) that utilized at least one version of the Level of Service Instruments (LSI; Andrews, 1982). The authors noted that males made up 80.5% of the

total sample and females only made up to 19.5%. Olver et al. (2014) reported that at the domain level of the LS, criminal history, antisocial associates, antisocial personality, and antisocial attitudes were the strongest predictors of both general and violent recidivism across both genders ($r > .19$).

Recently, Scott (2017) conducted a meta-analysis examining the risk and strength factors associated with recidivism among female and male justice involved youths. A total of 22 studies with a total sample of 50,601 justice involved youths (males = 38,649, females = 11,952) yielded 584 effect sizes. Data was examined with the total sample as well as by disaggregating gender. In brief, results showed that the global risk domains (which includes antisocial peers, antisocial attitudes) equally predicted recidivism in both males and females with small ($d = .10$ to $.29$) to moderate ($d = .20$ to $.49$) effect sizes.

In sum, criminal attitudes and criminal associates are dynamic risk factors that are fundamental to most theories in criminal behaviour. Research has consistently found these factors to be high-risk factors (as evidenced by the Big Four in the RNR framework) and suggests targeting these factors in interventions to lower the risk of recidivism in offenders. However, there is almost non-existing research on how these constructs impact self-worth and how it consequently impacts recidivism. Hence, one of the larger aims of this study is to explore the relationship between self-worth and criminal identification and how this relationship impacts criminal recidivism for males and females.

Childhood Adversity and Criminal Conduct

As mentioned earlier, childhood adversity encompasses abuse, trauma, negative parental attributes, and household dysfunction. General household dysfunction and

negative parental factors play an important role in the onset and maintenance of criminal behaviour in both males and females (Piquero, 2008). According to Newcomb and Loeb (1999) parents with criminal tendencies may bolster criminal behaviour in children and discourage prosocial behaviour. Furthermore, negative relationships with parents may lower children's self-esteem and provide opportunities to mingle with delinquent peers. Curtis (1963) and Widom (2014) mention that the effect of adverse childhood experiences on offending behaviour and violence is an important correlate of criminal behaviour and victimization.

Widom and Maxfield (2001) conducted a longitudinal study on 1,575 youth with data collected in 1994 on measures of delinquency and criminality. The study compared the study group ($n = 908$) to a comparison group ($n = 667$)—who had no indication of abuse or neglect on their record. Results revealed that those with history of childhood abuse and neglect were more likely to be arrested as juveniles as well as adults. Furthermore, those with abuse and neglect histories committed more violent crimes compared to the comparison group. However, how the existence of abuse and neglect related to delinquency and criminal conduct in males and females differently was not explored.

Additionally, Scott (2017) conducted a meta-analysis examining risk and strength factors that predict recidivism in males and females. While the larger domain of child abuse did not significantly predict recidivism for males or females, assessing neglect and physical abuse individually predicted recidivism equally well for both males and females (Cohen's d 's $> .30$). In addition, individual adversity factors also predicted recidivism

equally well for males and females and thus was considered a gender-neutral (applicable to both males and females) risk factor.

However, several researchers have suggested that childhood abuse and neglect affects females more than males (Giordano, Deines, & Cernkovich, 2006; Widom, Schuck, & White, 2006). Cullerton-Sen et al. (2008) examined 211 maltreated youth and found that while physical abuse affected males more, sexual abuse was more detrimental to females. In addition, Baglivio et al. (2014) conducted the first study to assess gender differences in ACE scores with 64,329 justice involved youths (79% males, 21% females) and found that female youths reported more ACEs than their male counterparts. Additionally, the main gender difference that was observed in ACEs was the prevalence of sexual abuse (7% males, 31% females). Prevalence of other ACE items were similar for both males and females. In sum, how adverse childhood experiences influence self-worth in youths has not been explored. Therefore, one of the goals of the current study is to understand if self-worth influences adverse childhood experiences.

Poor Parenting Practices and Criminal Conduct

Poor parental supervision has been found to be associated with higher levels of delinquency and aggression (Patterson & Stouthamer-Loeber, 1984). However, research has mainly focused on males partly due to higher levels of delinquency reported by males than females (Loeber & Stouthamer-Loeber, 1986). Wasserman, Laurie, Miller, Pinner, and Jaramillo (1996) examined concurrent and prospective relations between parenting and antisocial behaviour among 126 younger brothers between the ages of 6 to 10 of convicted high-risk youths between the ages of 10 and 17. Results indicated that youths who reported inadequate monitoring by parents evidenced more conduct problems.

Additionally, Loeber and Stouthamer-Loeber (1986) conducted a meta-analysis of concurrent (comparing delinquent youths with non-delinquent youths) and longitudinal studies on family factors and juvenile delinquency. The authors identified nine concurrent studies (containing 11 analyses) of which only one study included girls on lack of supervision and delinquency and found that lack of supervision was significantly related to delinquency especially in the delinquent youth group ($d = .94$) compared to the non-delinquent youth group ($d = .72$). Results further revealed that 21% of non-delinquent youths evidenced poor supervision compared to over 50% of delinquent youths. However, only one study included girls in the sample but did not disaggregate the data by gender. Furthermore, 11 additional studies were included in examining inconsistent discipline and revealed mixed results as both strict and consistent, and neglectful and inconsistent discipline styles were related to delinquency and aggression. Moreover, only one study out of the 11 studies included a sample of girls and disaggregated the data by gender. However, no significant effects were observed. Hence, limited research exists examining how poor parenting practices impact females and delinquent outcome.

Additionally, research examining gender differences in poor parenting practices and criminal conduct is limited. Scott (2017) examined domain level risk factors for both males and females and mentioned that problematic family circumstances and parenting (consisting of inadequate supervision, inappropriate discipline, and inconsistent parenting) predicted recidivism equally well for males ($d = .21$) and females ($d = .29$). Therefore, this study aims to examine how poor parenting practices impact females as

well as explore any gender differences in the link between poor parenting practices and externalizing behaviour.

Summary

In sum, there has been much debate between gender neutral researchers and gender responsive researchers as to what are the criminogenic factors that need to be targeted among female offenders. Additionally, although there is rising interest amongst scholars regarding strengths/protective factors of female offenders, research determining whether constructs such as self-esteem and self-efficacy are risks or strengths, particularly when present alongside criminal attitudes and associates has been limited. Further, it is evident that adverse childhood experiences affect both males and females. However, how and if self-worth may mediate the link between adverse childhood experiences (ACEs) and/or poor parenting practices with externalizing behaviours (e.g., criminal recidivism and self-reported aggression) is understudied among justice involved youth.

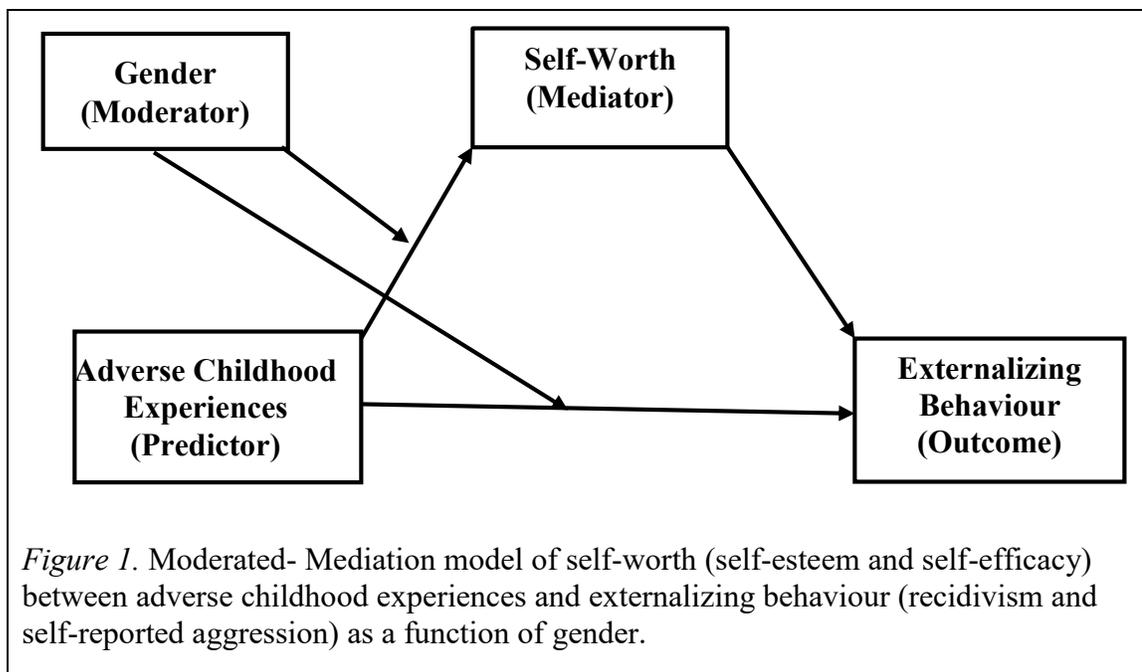
Study Objectives and Hypothesis

The main objective of this study was to examine the relationship between self-worth, childhood adversity, poor parenting practices, criminal identification, and externalizing behaviour in males and females. Hence, the research questions and hypotheses being tested in the study were:

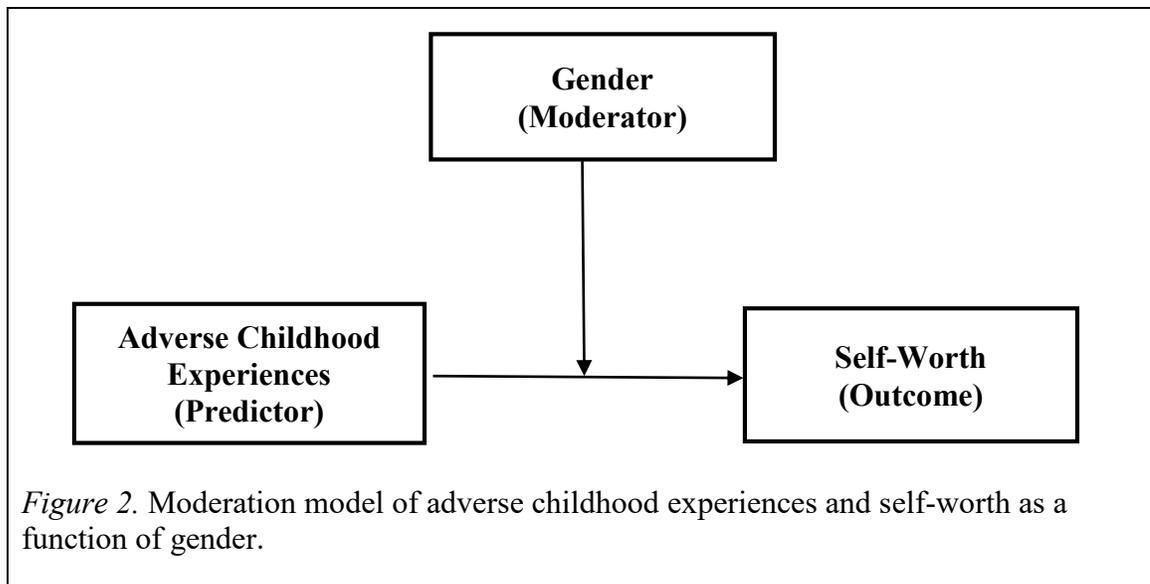
Research Question (1): Are there gender differences in the levels of self-esteem and self-efficacy among justice involved youth?

Hypothesis (1): It is hypothesized that justice involved female youth will evidence lower levels of self-esteem and self-efficacy in comparison to their male counterparts.

Research question (2): Does self-worth (both self-esteem and self-efficacy) mediate the relationship between adverse childhood experiences and externalizing behaviours (e.g., criminal recidivism, and self-reported aggression) and is this hypothesized mediated relationship further moderated by gender? (See Figure 1)

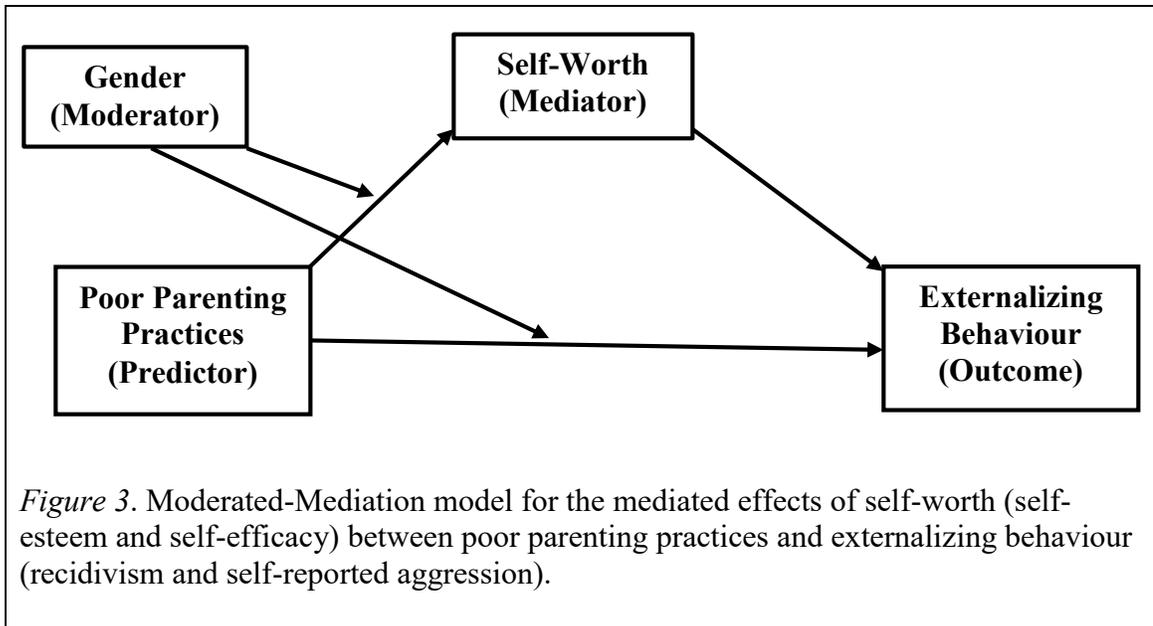


Hypothesis (2a): It is hypothesized that adverse childhood experiences will be correlated with low self-worth in both groups but to a greater degree in females. (See Figure 2)



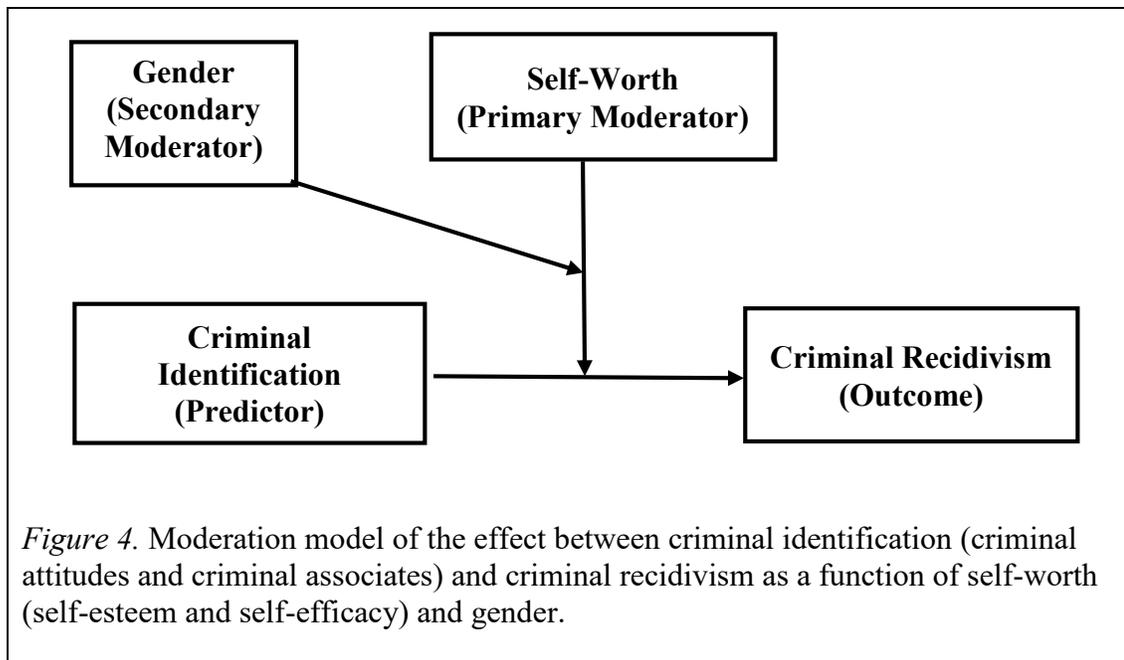
Hypothesis (2b): It is further hypothesized that the relationship between adverse childhood experiences and externalizing behaviours (i.e., criminal recidivism and self-reported aggression) will be mediated by self-worth in both genders, but to a greater extent in females.

Research Question (3): Does self-worth (self-esteem and self-efficacy) mediate the relationship between poor parenting practices and externalizing behaviour (e.g., criminal recidivism and self-reported aggression)? (See Figure 3)



Hypothesis (3): It is hypothesized that poor parenting practices—lack of parental supervision and inconsistent discipline leads to externalizing behaviours irrespective of gender and this relationship is mediated by self-worth.

Research Question (4): Does self-worth strengthen or weaken the relationship between criminal identification and criminal recidivism as a function of gender? This portion of the study will consider two competing hypotheses from two competing paradigms. (See Figure 4)



Hypothesis (4a): From a gender responsive position, it is hypothesized that higher self-worth will reduce the relationship between criminal identification (criminal associates and criminal attitudes) and criminal recidivism for all justice involved youth but the magnitude will be stronger for females.

Hypothesis (4b): However, according to the gender-neutral perspective, higher self-worth will amplify the relationship between criminal identification and criminal recidivism irrespective of gender.

Method

Participants

The participants were part of the larger *Gendered Pathways Project* (Brown & Skilling, 2009). The *Gendered Pathways Project* was initially started in 2009 and is currently ongoing. Using both quantitative and qualitative methods, the *Gendered Pathways Project* has multiple over-arching objectives such as the validation of various

self-report questionnaires as well as risk assessment tools in a mixed sex sample of justice involved youth.

Participants were originally recruited from the Child, Youth, and Family Program (CYFP)—an out-patient mental health program at the Centre for Addiction and Mental health (CAMH) and the Ministry of Children and Youth Service (MCYS)—a provincial government agency that provides services to youth at risk and youth under the Youth Criminal Justice Act (YCJA). Although 340 youths participated in the larger *Gendered Pathways Project*, the current study only included 312 participants given that 28 participants did not complete the questionnaire portion of the study. Thus, the final sample for the current study was comprised of 67.6% ($n = 211$) males and 32.4% ($n = 101$) females between the ages of 12 to 21 ($M = 16.83$, $SD = 1.26$). An independent samples t-test revealed no significant differences in age between males and females, $t(308) = 1.47$, $p = .143$, $d = 0.17$.

In terms of race, the youths identified themselves as Caucasian, of African descent, Indigenous, or other (e.g., Asian, East Indian, and Hispanic). As evident in Table 1, majority of the youths were either Caucasian or of African descent. Notably, there were significant gender differences. The sample consisted of more Caucasian females than Caucasian males and there were more males of African descent than there were females of African descent.

Table 1

Gender Differences by Race.

Race	Total	Male	Female
	% (n /312)	% (n /211)	% (n /101)
Caucasian	43.6 (136)	35.1 (74)	61.4 (62)
African Descent	28.5 (89)	33.6 (71)	17.8 (18)
Indigenous	4.8 (15)	4.7 (10)	5.0 (5)
Other	18.3 (57)	20.9 (44)	12.9 (13)
Unidentified	4.8 (15)	5.7 (12)	3.0 (3)

Note. A chi-square was not reported as two cells (20%) had less than five expected counts.

The legal disposition of youths at the time of the study is presented in Table 2. Although a chi-square analysis was not conducted due to low cell counts, it is clear that while females were more likely to be on probation than their male counterparts, substantially more males comprised the CAMH cases.

Table 2.

Legal Disposition at Time of Assessment for Both Males and Females.

Legal Disposition	Total	Male	Female
	% (n / 312)	% (n / 211)	% (n / 101)
Remand	42.6 (133)	41.7 (88)	44.6 (45)
Closed Custody and Supervision Order	16.7 (52)	17.5 (37)	14.9 (15)
Open Custody and Supervision Order	1.9 (6)	2.8 (6)	0.0 (0)
Probation	19.2 (60)	10.9 (23)	36.6 (37)
Court Ordered Assessment (CAMH Cases) ^a	16.7 (52)	22.7 (48)	4.0 (4)
Other	2.8 (9)	4.2 (9)	0.0 (0)

^aFormal legal disposition was not available for CAMH cases, however these youth most likely resemble youth in closed custody (S.Brown & T.Skilling personal communication, June 11th, 2017).

As Table 3 illustrates the youths were interviewed in custody and in the community. A chi square test of independence was calculated to compare the location of interview between males and females. Results showed that no significant gender differences existed, $\chi^2 (1, N = 312) = 0.02, p = .893, V = .008$. Hence, both males and females were equally distributed between custody and community.

Table 3

Location of Interview for Both Males and Females.

Location	Total % (n / 312)	Male % (n / 211)	Female % (n / 101)
Custody	51.9 (162)	51.7 (109)	52.5 (53)
Community	48.1 (150)	48.3 (102)	47.5 (48)

Note. Custody = Closed and Secure custody; Community = Open custody, CAMH, and Probation.

The nature of participant index offences is presented in Table 4. Offences were categorized into five main categories: violent, other violent, non-violent, other non-violent, and administration of justice. As Table 4 illustrates, 76.9% of the youth had been involved in at least one violent offence and 55% of the youth were involved in administration of justice offences. However, the only significant gender difference that emerged was for *other violent offences* (Males = 41.9%, Females = 14.9 %, $V = .269$).

Table 4.

Gender Differences in Categories of Index offences.

Index Offence	Total % (n / 312)	Male % (n / 211)	Female % (n / 101)	χ^2	p
Violent	43.9 (137)	43.8 (92)	44.6 (45)	0.02	.901
Other Violent	33.0 (103)	41.9 (88)	14.9 (15)	22.53	.001**
Non-Violent	34.0 (106)	34.3 (72)	33.7 (34)	0.01	.914
Other Non-Violent	23.7 (74)	26.7 (56)	17.8 (18)	2.94	.086
Administration of Justice	55.0 (172)	53.3 (112)	59.4 (60)	1.02	.313

Note. Violent offences include homicide, assault, and violent sexual offences. Other violent offences include robberies and weapons offences. Non-Violent offences include theft, arson and property, fraud, and break and enter. Other non-violent offences include drugs and related, non-violent sexual, misc. offence against person, and obstruction of justice.

** $p < .01$

According to police reported youth crime in 2014, the majority of the youths committed non-violent offences such as theft, mischief, and drug possession (Allen & Superle, 2016). However, in the study's sample, males and females committed violent offences more than non-violent offences. From the information presented in Table 4, it is evident that the study sample is not representative of standard youth justice population, but rather includes youth who have committed more violent crimes.

Procedure

A team of researchers along with the principal investigator (Shelley Brown) and co-investigator (Tracey Skilling) conducted recruitment interviews and described the research study in detail to potential participants. Informed consents were obtained from

all participants 16 years of age and above along with parental consents for youths 15 and under. The participants were also informed that their responses would be kept confidential. Once participants provided consent to participate, trained researchers (graduate students, and undergraduate students), principal investigator (Shelley Brown), and clinicians (Mental Health Center's psychologists, social workers, and psychiatrists) proceeded to interview the participants. The larger *Gendered Pathways Study* was approved by the Ministry of Children and Youth Service Research Ethics Board and Carleton's Ethics Research Board. Additionally, a court order was also obtained to conduct official file reviews.

Interviews and self-report assessments were collected between 2009 and 2012. About six to eight hours was required to complete the interviews, assessments, and go through the official records. Youth in the community were given up to \$30.00 in gift cards after participation whereas youth in custody were offered up to \$30.00 credit towards their canteen account. Following the interview, youths and parents (for youths under 15 and under) were fully debriefed by trained research assistants. Follow up data for recidivism was collected in July 2014 from the Ministry of Community and Correctional Services (MCCS; Ontario). Likewise, in June 2016 Canadian Police Information Centre (CPIC) records from the Royal Canadian Mounted Police was also obtained for the sample. Two M.A students and one fourth year Honours student coded recidivism between February 2017 and May 2017.

Measures

Youth Assessment Screening Instrument (YASI). The Youth Assessment Screening Instrument (YASI) is an interview-based measure developed by Orbis Partners

(2000) to assess risk, needs, and strengths among justice involved youth. Although grounded in gender-neutrality, the YASI also contains gender-responsive items required for this study. The YASI was initially developed to aid in case management and is divided into a pre-screen version and a full assessment version.

The pre-screen version consists of 33 items which incorporates static and dynamic risk factors across 7 domains (legal history, family history, school, community and peers, alcohol/drugs, mental/physical health, and attitudes). Pre-screen scores are tallied to produce low, moderate, and high-risk ratings. In practice, youth who score in the moderate or high range are also assessed on the full assessment. In the current study, all youth received both the pre-and full assessment of the YASI. The full assessment consists of 88 items across 10 domains (legal history, family history, school, community and peers, alcohol/drugs, mental/physical health, attitudes, skills, employment, and leisure). Most items are scored on a 5 point Likert-scale (-2, -1, 0 +1, +2) where the positive scores connote strengths (e.g., +1—“ Expresses a desire to live in a law-abiding manner”, +2— “ Fully understands the nature of harm caused to others”), negative scores connote risks (e.g., -1— “Minimizes, denies, justifies, excuses or blames others”, -2— “Total lack of empathy for harm caused to others”) and 0 connotes neutrality/ or middle range score (e.g., “Indicates some awareness of the need to accept responsibility”).

In practice, the YASI is scored based on a semi-structured interview with the youth alongside input of collateral sources such as parents and official files (Orbis Partners, 2000). In addition, individual items within a given domain are tallied to generate domain sub scores of low, moderate, or high as follows: static risk (SR), dynamic risk (DR), static protective (SP), and dynamic protective (DP). Predictive

validity of the YASI with justice involved youth on probation from New York State was conducted by Jones (2011) with a sample of 2,369 youth (males = 1,550 and females = 819). Results for the full assessment risk score predicted new convictions for both males ($AUC = .63$) and females ($AUC = .62$).

The larger *Gendered Pathways Study* (Brown & Skilling, 2009) calculated the inter-rater reliability from 21 cases for the YASI pre-screen risk items ($ICC = .77$) and the full assessment risk items ($ICC = .81$) and suggested that the inter-rater reliability was excellent (Cicchetti, 1994). Additionally, Scott (2017) calculated the bivariate predictive validity of the YASI total scale score for general ($AUC = .65$) and violent recidivism ($AUC = .66$) with a sample of 254 youths (males = 148, $AUC = .65$ and females = 106, $AUC = .70$) from the *Gendered Pathways Study*. Hence, validation studies of the YASI have demonstrated that it can be used as a valid measure with justice involved youth.

YASI: Criminal Associates. Six items from the social network domain of the YASI were selected to produce a global construct representative of criminal associates. Sample items include: (1) who the youth spends his/her time with, and (2) whether the youth has attachments to positively influencing peers (refer to Appendix A for the full list of items). Item one and five were scored on a scale from 0 to 4, and items two, three, and six were scored on a scale from 0 to 3. Item four: number of months' youth has been associating with negatively influencing /delinquent friends /gang, was scored on a scale that ranged from (0 to 2)¹. The scores from each item were then added to produce a total score (0 to 18). Higher scores reflect higher association with criminal associates. The reliability for

¹ YASI: Criminal Associates follows the scoring guidelines from Scott (2017) and the original scoring guideline from Orbis Partners (2000).

the total YASI measure of criminal associates was moderate ($\alpha = .54$) (Schmitt, 1996). Separate reliability test was moderate for males ($\alpha = .57$) but poor for females ($\alpha = .38$) (Schmitt, 1996). Conducting a one-way random intraclass correlation single measure revealed inter-rater reliability to be moderate ($ICC = .51$) (Cicchetti, 1994).

YASI: Criminal Attitudes. All nine items from the attitudes domain of the YASI was used as the measure of criminal attitudes. Sample items include: (1) attitudes towards the criminal justice system, (2) respect for authority figures, and (3) attitudes when engaged in antisocial/criminal act(s) (please refer to Appendix B for a complete list of items and scoring information). Criminal attitudes are measured by assigning numerical values (-2, -1, 0, 1, 2) for each response². The scores are then added up to produce a total score (-18 to 18) for each participant. More negative scores are associated with more criminal attitudes/thinking. Conversely, more positive scores are associated with less criminal attitudes/thinking. However, in the final analyses scores were flipped such that negative scores indicated lower levels of criminal attitudes and positive scores indicated higher levels of criminal attitudes. A Cronbach's alpha for males ($\alpha = .86$) and females ($\alpha = .82$) was found to be high. The reliability of the total scale was also found to be high ($\alpha = .85$) (Schmitt, 1996). An inter-rater reliability was conducted using one-way random intraclass correlation single measures and revealed excellent reliability ($ICC = .83$) (Cicchetti, 1994).

² YASI: Criminal Attitudes follows the original scoring guideline from Orbis Partners (2000) and Scott (2017).

YASI: Adverse Childhood Experiences. To measure childhood adversity a proxy measure (derived from the YASI) of the Adverse Childhood Experiences (ACEs) questionnaire originally developed by Felitti et al. (1998) was used. During 1995 to 1997 two waves of data was assessed by Felitti et al. (1998). The first wave of data consisted of adverse childhood experiences—abuse and household dysfunction and the second wave included neglect. Abuse was categorized into three domains: physical abuse, sexual abuse, and psychological abuse. Similarly, household dysfunction was categorized into five domains: presence of mental illness in the household, mother treated violently, presence of substance abuse in the household, presence of criminal behaviour in the household, and parental separation or divorce. Finally, neglect was categorized into two domains: emotional neglect and physical neglect. Thus, the 10 domains were combined to ask multiple questions to assess for exposure to adverse childhood experiences and answers were rated on a “yes” or “no” basis.

In order to keep the scoring mechanism similar to the original ACE study, the scores for each of the original 10 ACE domains (extracted using relevant items from the YASI, see Appendix A) were rated either a “0” or “1” which were then summed to get a total score of 10 (scores range from 0 to 10). For example, a score of 1 was allotted for the *ACE item: Alcohol/drugs in home* if a participant responded ‘yes’ to any one of these YASI items— (1) Circumstances of family members who are living in the household (alcohol/drug problems with mother, father, stepparent, sibling, or other) (2) Historic problems of family members who lived in the environment in which the youth was primarily raised (alcohol/drug problems with mother, father, stepparent, sibling, or other). The higher the participant’s score, it can be inferred that the participant is exposed to

more adverse childhood experiences or ACEs. Recently, Conley, Brown, and Skilling (2017) tested the reliability for the ACE proxy measures from the YASI and have demonstrated good reliability for both males ($\alpha = .80$) and females ($\alpha = .77$).

Additionally, a one-way random intraclass correlation single measure was conducted on the ACE variables and yielded excellent inter-rater reliability ($ICC = .88$) (Cicchetti, 1994). Previous studies on ACEs and criminal outcome have evidenced that the ACE is a valid measure to examine abuse, trauma, neglect, and household dysfunction in justice involved samples (Baglivio et al., 2014; Baglivio & Epps, 2015). For a full measure of the ACE proxy measure with the corresponding YASI items please refer to Appendix C.

YASI: Poor Parenting Practices. Originally four items from the family domain of the Youth Assessment Screening Instrument (YASI) was going to be used as the measure of YASI: Poor Parenting Practices. However, the inter-rater reliability was poor (i.e., $ICC = .05$). Since the YASI is an interview based assessment coders may not have been consistent in extracting information related to poor parenting practices and thus, could have resulted in a very low inter-rater reliability. Therefore, the author decided to use the family domain from another risk assessment tool that was available in the dataset—the Youth Level of Service/ Case Management Inventory (YLS/CMI).

Youth Level of Service/Case Management Inventory (YLS/CMI). The YLS/CMI was originally derived from the Level of Service Inventory (LSI; Andrews, 1982) which was mainly used with adults. The YLS/CMI is designed to assess risk and need in adolescent males and females (Hoge & Andrews, 2011) and is one of the most commonly used risk-assessment tools with youth offenders. The YLS/CMI is a 42-item risk/need assessment; each item is scored as: 1 = present, 0 = not present on the basis of

semi-structured pathways interview and on-site file reviews. The YLS/CMI taps into eight domains: 1) prior and current criminal history, 2) family circumstances/parenting, 3) education and employment, 4) peer relations, 5) substance abuse, 6) leisure/recreation, 7) personality/behaviour, and 8) attitudes/orientation.

Various studies have demonstrated good predictive validity between the YLS/CMI and recidivism (Hoge & Andrews, 2011; Olver et al., 2014). In a meta-analysis conducted by Olver et al. (2014) 128 studies utilized one of the versions of the Level of Service (LS; Andrews, 1982) scales and found that the LS total scores predicted general and violent recidivism equally well for both males ($r = .30$ and $r = .24$) and females ($r = .31$ and $r = .26$). Additionally, Scott (2017) sampled 254 youths (males = 148, females = 106) and calculated the bivariate predictive validity of the YLS/CMI total score for general ($AUC = .68$) and violent ($AUC = .66$) as well as separately for males ($AUC = .68$ and $AUC = .62$) and females ($AUC = .68$ and $AUC = .74$). From the 21 cases used to determine the inter-rater reliability in the *Gendered Pathways Study* (Brown & Skilling, 2009), the inter-rater reliability for the YLC/CMI total score was excellent ($ICC = .77$) (Cicchetti, 1994).

YLS: Poor Parenting Practices. For the current study, the six item family circumstances/parenting subscale of the YLS/CMI version 2.0 was used to measure poor parenting practices. Sample items include: 1) inadequate supervision, 2) inconsistent parenting, and 3) poor relations with father (refer to Appendix D for the full measure and scoring information). Scores on the family/parenting subscale range from 0-6, where higher scores represent higher amounts of familial/parental dysfunction. A Cronbach's alpha for males ($\alpha = .57$) and females ($\alpha = .47$) and the total scale ($\alpha = .55$) revealed

moderate reliability (Schmitt, 1996). An inter-rater reliability was conducted using the 21 cases from the *Gendered Pathways Study* (Brown & Skilling, 2009). A one-way random intraclass correlation single measure revealed moderate reliability ($ICC = .65$) (Cicchetti, 1994).

The Rosenberg Self-Esteem Scale (RSES). The Rosenberg Self-Esteem Scale (RSES) developed by Rosenberg (1965) was used to assess self-esteem as it is the most widely used self-report instrument for assessing self-esteem. The RSES is a 10-item scale that measures global self-esteem and each item on the RSES is answered on a 4-point Likert-scale (Strongly Agree = 0, Agree = 1, Disagree = 2, and Strongly Disagree = 3). Additionally, items 2, 5, 6, 8, and 9 are reverse coded and the total scores range from 0 to 30. High scores are reflective of higher levels of self-esteem.

Past research has shown good internal consistency (alpha's over .81) with adolescents (Donnellan et al., 2005; Martin-Albo, Núñez, Navarro, & Grijalvo, 2007; Roth, Decker, Herzberg, & Braehler, 2008). In addition, Bagley and Mallick (2001) showed divergent validity between RSES and conduct disorder, emotional disorder, overactive (hyperactivity), and somatic problems ($r = -.00$ to $-.66$). The reliability test on the Rosenberg Self-Esteem Scale for this study was performed and resulted in a high Cronbach's alpha ($\alpha = .74$) (Schmitt, 1996). Separate reliability analysis for males was moderate ($\alpha = .69$) and high for females ($\alpha = .82$) (Schmitt, 1996). For a complete list of the items and scoring information please refer to appendix E.

The General Self-Efficacy Scale. A 12-item General Self-Efficacy Scale (GSES) by Bosscher and Smit (1998) adapted from the original 17-item scale by Sherer et al. (1982) was used to measure the participant's level of self-efficacy. Each item on the scale

is rated on a 5-point Likert scale (Strongly agree = 1, Agree = 2, Neither Agree or Disagree = 3, Disagree = 4, and Strongly Disagree = 5) and measures the participant's self-reported persistence, initiation, and effort. Items 4, 5, 6, 7, and 8 are reverse coded. The responses are summed and a total score between 20 and 60 is obtained (refer to appendix F for a complete list of the items and scoring guide). Higher score indicates higher levels of self-efficacy. Internal consistency tested by Bosscher and Smit (1998) revealed Cronbach's alpha of .69 for the overall GSES. Various studies have evidenced that the GSES is a valid measurement tool to assess levels of self-efficacy (see Sherer & Adams, 1983; Herrero et al., 2014). The reliability of the measure for this study for males ($\alpha = .84$) and females ($\alpha = .87$) was high, additionally, the overall reliability was ($\alpha = .85$) (Schmitt, 1996).

Aggression Questionnaire. The Aggression Questionnaire (AQ; Buss & Warren, 2000) is a self-report measure of anger and aggression which is comprised of 34 items scored on five subscales (Physical Aggression, Verbal Aggression, Anger, Hostility, and Indirect Aggression). However, for the purpose of this study, only the physical aggression subscale was used to assess self-reported aggression as physical aggression can lead to involvement with the justice system. Each item on the questionnaire describes an aggressive characteristic and is rated on a 5-point Likert scale (1 = 'Not at all like me' to 5 = 'completely like me'). Item #19 is reversed scored and since the AQ was developed to be used with anyone with a 3rd grade reading and comprehension ability, it is said to be suitable for youths as well as adults.

Higher scores are reflective of higher levels of anger and aggression (refer to appendix G for the complete list of items and scoring guide). Previous studies have

evidenced good reliability (alpha's over .85) and validity of the aggression questionnaire (Polaschek, Collie, & Walkey, 2004; Santisteban & Alvarado, 2009; Webster et al., 2014). This study will focus on the continuous score for physical aggression to measure the participant's physical aggression. A reliability test was performed in SPSS for this measure which yielded a high Cronbach's alpha ($\alpha = .89$) (Schmitt, 1996). Additionally, high Cronbach's alpha was observed for males ($\alpha = .89$) and females ($\alpha = .90$) (Schmitt, 1996), suggesting that it is a reliable measure of aggression.

Criminal Recidivism. Criminal recidivism was coded by combining two different sources of recidivism information provided from the Ministry of Community Safety and Correctional Services (MCSCS), and the RCMP (i.e., Canadian Police Information Centre; CPIC). Offences are further separated into three categories—violent (i.e., robbery, assault, and homicide), general (i.e., theft, drug possession, and fraud), and technical (i.e., failure to appear, breaches, and fail to comply). Also, a two-year follow-up period was used to assess recidivism. Additionally, recidivism was coded dichotomously “yes/no”, where yes indicated the occurrence of any type of recidivism (general, violent, or technical) between the date of first release and the two-year follow up. Hence, the current study examined general recidivism as it included violent recidivism as well.

Inter-rater reliability analysis was conducted to evaluate if recidivism data was coded consistently across cases. 2 M.A. students (the author included) and a 4th year honours student coded the recidivism data. Since there were cell values with less than 5 counts for each variable on all categories, a Kappa could not be calculated. Hence, a percent agreement was calculated instead to determine the inter-rater reliability. Inter-

rater reliability was found to be above 90% for all categorical variables. Hence, it can be inferred that recidivism was coded consistently (McHugh, 2012).

Statistical Procedures

In addition to basic chi-square and t-test analyses all research questions were answered using moderation and mediation statistical approaches as described by Hayes (2013). A variable that is hypothesized to interact with the independent variable is known as a moderator variable (Hayes, 2013). Moderation is observed when the effect of the independent variable on the dependent variable changes as a result of the moderator variable (Baron & Kenny, 1986). A mediator on the other hand is a variable that impacts the nature of the relationship between an independent variable and a dependent variable (Hayes, 2013). A mediation is said to occur if there is an indirect effect of an independent variable on the dependent variable due to a mediator variable (Edwards & Lambert, 2007). A moderated-mediation, also known as a conditional indirect effect (Preacher, Rucker, & Hayes, 2007) occurs when the mediator effect changes as a result of the moderator.

In addition, to test whether a mediated effect exists, a 95% bias corrected bootstrap confidence interval of 10,000 is generated since it tends to be more powerful as it takes the original data in the analysis and considers the irregularity of the sampling distribution of the indirect effects (Hayes, 2013). Bootstrapping techniques also controls for Type I error (Preacher et al., 2007). If the confidence intervals contain a zero, it is assumed that there is inadequate evidence that a predictor variable affects the outcome variable through the mediator. Research questions 2, 3, and 4 will be tested using the procedures outlined by Hayes (2013) for simple moderation analysis (to test for two-way

interactions), moderated-mediation, and moderated moderation analyses (to test for three-way interactions). Variables used to construct interaction terms were mean centered.

Results

Data Screening

A missing value analysis was conducted for all measures examined in the study. The amount of missing data ranged from 0.3% to 17.6% and was distributed as follows: 1) 11.6% for the Rosenberg Self-Esteem Scale (RSES), 2) 13.5% for the General Self-Efficacy Scale (GSES), and 3) 17.6% for the Aggression Questionnaire: Physical Aggression subscale. (15.7%) 4) 0.3% for Criminal Recidivism, and 5) 6.4% for YLS: Poor Parenting Practices.

However, only 234 participants had data in the YASI measures³ and the amount of missing data based on the reduced sample were as follows: YASI: Poor Parenting Practices (0.9%), YASI: Criminal Attitudes (4.7%), and YASI: Criminal Associates (6.4%). Examining the pattern of missing data, t-test results were nonsignificant for all variables. Furthermore, the pattern of missing data in one variable was not related to the variable itself being examined. Hence, the data was assumed to be missing completely at random (MCAR) and a pairwise deletion method was used to handle missing data (Tabachnick & Fidell, 2013). Additionally, any analysis involving the YASI measures were performed with the reduced sample size ($N = 234$).

Variables of interest were standardized to detect the presence of potential outliers. A standardized z -score value greater than 3.29 is indicative of the presence of a univariate

³ Due to resource limitations, majority of the CAMH participants were not administered the YASI.

outlier (Tabachnick & Fidell, 2007). When observing the z -scores, no univariate outliers were identified. Additionally, to test for the presence of multivariate outliers, Mahalanbois distance was examined and the values obtained were compared to the χ^2 distribution ($df = 10, p = .001$). With a critical value of 29.59, no multivariate outliers were observed. In addition, Cook's D, Leverage, and DFIT were also examined to screen for influential cases. The criterion used to determine whether a case was influential or not was: Cook's D > 1 ; Leverage ($2p/N$) > 0.05 —where p = number of coefficients and N = number of observations; DFIT ± 1.00 . Using these criteria, no influential cases were identified.

All measures were normally distributed and no transformations were required. The tolerance and variance inflation factor showed that multicollinearity was not an issue since values ranged from 0.40 to 0.72. Assumption for normality, linearity, homogeneity of variance, and homoscedasticity were met for the total sample as well as for males and females separately.

Descriptive Statistics

Descriptive statistics for each measure are presented in Table 5. According to Table 5, females scored significantly higher on the YASI: ACE proxy measure and the YLS: Poor Parenting Practices measure than males, indicating that females had more experiences of childhood adversity and poor parental factors (exclusive of abuse). However, males scored significantly higher on the Rosenberg Self-Esteem Scale (RSES) than females, indicating that they had higher levels of self-esteem than females. Furthermore, males scored significantly higher on the YASI: Criminal Associates than females suggesting that males tend to associate with criminal peers more than females.

Additionally, a chi square test of independence compared criminal recidivism (includes general and violent) between males (65.2%, $n = 137$) and females (56.4%, $n = 57$).

Results showed that although more males tend to recidivate, no significant gender differences existed $\chi^2 (1, N = 311) = 2.25, p = .133, V = .085$, indicating that both males and females in the sample re-offended equally.

Table 5

Descriptive Statistics by Gender

Measure	Males		Females		<i>t</i>	<i>d</i>
	<i>M</i> (<i>SD</i>)	Observed Range	<i>M</i> (<i>SD</i>)	Observed Range		
YASI: ACE	2.09 (2.38)	0 - 9	5.13 (2.78)	0 - 10	-9.96**	-1.21
YLS: Poor Parenting Practices	2.63 (1.59)	0 - 6	3.28 (1.54)	0 - 6	-3.27*	-0.41
YASI: Criminal Attitudes	-1.63 (7.04)	-16 - 14	-.02 (6.73)	-13 - 15	-1.72	-0.23
YASI: Criminal Associates	6.62 (3.56)	0 - 15	5.01 (2.29)	1 - 11	4.10**	0.52
Aggression Questionnaire: Physical Aggression	23.32 (8.41)	8 - 40	24.74 (9.00)	9 - 40	-1.22	-0.17
RSES (Rosenberg Self-Esteem Scale)	19.88 (5.06)	4 - 30	17.58 (5.72)	1 - 29	3.39**	0.44
GSES (General Self-Efficacy Scale)	42.43 (7.01)	23 - 60	40.63 (7.97)	20 - 59	1.58	0.25

Note. YASI: ACE = Youth Assessment Screening Instrument: Adverse Childhood Experiences, YLS = Youth Level of Service

***p* < .001

**p* < .05

Correlations Among Measures

Pearson correlation coefficients were used to examine the relationships between the measures for the total sample (refer to Table 6). Significant large correlations (Cohen, 1988) emerged between Rosenberg Self-Esteem scale (RSES) and General Self-Efficacy Scale (GSES). Moderate correlations (Cohen, 1988) were also observed between Adverse Childhood Experience (YASI: ACE) and Physical Aggression (AQ:PA), Poor Parenting Practices (YLS: Poor Parenting Practices) and Adverse Childhood Experiences (YASI: ACE), and Criminal Attitudes (YASI: Criminal Attitudes) and Criminal Associates (YASI: Criminal Associates). In addition, significant small correlations (Cohen, 1988) were also observed between Criminal Recidivism, Physical Aggression (AQ:PA), Criminal Associates, and Criminal Attitudes⁴.

⁴ Negative scores on Criminal Attitudes indicates higher criminal thinking/attitudes.

Table 6

Correlation Matrix of Measures for Total Sample

Measures	AQ:PA	RSES	GSES	YASI: ACE	YLS: Poor Parenting Practices	YASI: Criminal Attitudes	YASI: Criminal Associates
AQ:PA	-	-	-	-	-	-	-
RSES	-.08	-	-	-	-	-	-
GSES	-.10	.60**	-	-	-	-	-
YASI: ACE	.35**	-.22**	-.07	-	-	-	-
YLS: Poor Parenting Practices	.28**	-.15*	-.12*	.42**	-	-	-
YASI: Criminal Attitudes	-.30**	.05	.15*	-.02	-.21**	-	-
YASI: Criminal Associates	.28**	-.05	-.05	.09	.26**	-.38**	-
Recidivism	.22**	.03	-.01	-.00	.12*	-.25**	.20**

Note. AQ:PA = Aggression Questionnaire: Physical Aggression subscale, RSES = Rosenberg Self-Esteem Scale, GSES = General Self-Efficacy Scale, YASI: ACE = Youth Assessment Screening Instrument: Adverse Childhood Experiences. ** $p < .01$, * $p < .05$

Examining the correlations among measures for males (refer to Table 7), similar patterns of correlations emerged between General Self-Efficacy Scale (GSES) and Rosenberg Self-Esteem Scale (RSES). Additionally, moderate correlations (Cohen, 1988) were observed between Criminal Associates (YASI: Criminal Associates) and Poor Parenting Practices (YLS: Poor Parenting Practices). Lastly, significant small correlations (Cohen, 1988) were also observed between Criminal Recidivism, Physical Aggression (AQ:PA), Poor Parenting Practices (YLS: Poor Parenting Practices) and Criminal Attitudes.

Table 7

Correlation Matrix of Measures for Males

Measures	AQ:PA	RSES	GSES	ACE	YLS: Poor Parenting Practices	YASI: Criminal Attitudes	YASI: Criminal Associates
AQ:PA	-	-	-	-	-	-	-
RSES	-.16*	-	-	-	-	-	-
GSES	-.07	.58**	-	-	-	-	-
ACE	.45**	-.11	.04	-	-	-	-
YLS: Poor Parenting Practices	.28**	-.09	-.08	.32**	-	-	-
YASI: Criminal Attitudes	-.26**	.10	.08	-.19*	-.32**	-	-
YASI: Criminal Associates	.31**	-.17	-.09	.28**	.41**	-.38**	-
Recidivism	.24**	.03	.03	.12	-.17*	-.23**	.13

Note. AQ:PA= Aggression Questionnaire: Physical Aggression subscale, RSES= Rosenberg Self-Esteem Scale, GSES= General Self-Efficacy Scale, YASI: ACE= Youth Assessment Screening Instrument: Adverse Childhood Experiences. ** $p < .01$, * $p < .05$

Examining the correlation matrix for females (refer to Table 8) large significant correlations (Cohen, 1988) were observed between Rosenberg Self-Esteem Scale (RSES) and General Self-Efficacy Scale (GSES) and between Poor Parenting Practices (YLS: Poor Parenting Practices) and Adverse Childhood Experiences (YASI: ACE). In addition, moderate significant correlations (Cohen, 1988) emerged between Criminal Attitudes (YASI: Criminal Attitudes) and Physical Aggression (AQ:PA). Lastly, a small significant correlation (Cohen, 1988) was observed between Criminal Recidivism and Criminal Attitudes and Criminal Associates.

Table 8

Correlation Matrix of Measures for Females

Measures	AQ:PA	RSES	GSES	YASI: ACE	YLS: Poor Parenting Practices	YASI: Criminal Attitudes	YASI: Criminal Associates
AQ:PA	-	-	-	-	-	-	-
RSES	.09	-	-	-	-	-	-
GSES	-.13	.61**	-	-	-	-	-
YASI: ACE	.19	-.19	-.09	-	-	-	-
YLS: Poor Parenting Practices	.26*	-.19	-.19	.53**	-	-	-
YASI: Criminal Attitudes	-.37**	.06	.27*	.07	-.11	-	-
YASI: Criminal Associates	.28*	-.02	-.10	.01	.12	.02	-
Recidivism	.22	-.02	-.09	-.08	-.07	-.27*	.27*

Note. AQ:PA= Aggression Questionnaire: Physical Aggression subscale, RSES= Rosenberg Self-Esteem Scale, GSES= General Self-Efficacy Scale, YASI: ACE= Youth Assessment Screening Instrument: Adverse Childhood Experiences. ** $p < .01$, * $p < .05$

Gender Differences in Self-Worth

The first research question sought to determine if there were gender differences in the levels of self-esteem and self-efficacy among justice involved youth. It was hypothesized that justice involved female youth would evidence lower levels of self-esteem and self-efficacy in comparison to their male counterparts. The hypothesis was partially supported since results of separate t-tests indicated that females ($M = 17.58$, $SD = 5.72$) evidenced significantly lower levels of self-esteem than males ($M = 19.88$, $SD = 5.06$), $t(273) = 3.39$, $p = .001$. In addition, a small to moderate effect ($d = 0.44$) was observed for the difference between the scores (Cohen, 1988). However, there were no significant differences in the levels of self-efficacy between females ($M = 40.63$, $SD = 7.97$) and males ($M = 42.43$, $SD = 7.01$), $t(268) = 1.58$, $p = .06$, $d = 0.25$.

Gender, Self-Worth, Adverse Childhood Experiences, and Externalizing Behaviour

The second research question examined the relationship between self-worth (self-efficacy and self-esteem), adverse childhood experiences and externalizing behaviours (e.g., criminal recidivism, and self-reported aggression) as a function of gender. The first hypothesis aimed to examine the relationship between adverse childhood experiences and self-worth. Specifically, it was hypothesized that adverse childhood experiences would be related to low self-worth in males and females but to a greater extent in females. This first hypothesis was tested using two, separate simple moderated regression analyses. The first model included self-esteem as the outcome variable, adverse childhood experience as the predictor variable, and gender as the moderator. Results revealed that gender did not moderate the relationship between ACEs and self-esteem as the interaction between gender and ACEs was not significant (see Table 9).

Table 9

Moderation Effect of Gender on the Relationship between Adverse Childhood Experiences and Self-Esteem

Variable	Unstandardized Coefficients		<i>p</i>	95% CI
	B	<i>SE B</i>		
Gender	1.39	0.42	.081	[-0.17, 2.95]
ACE	0.71	0.20	.155	[-0.55, 0.09]
Gender X ACE	0.31	0.23	.555	[-0.66, 0.35]

Note. CI = Confidence Interval, ACE = Adverse Childhood Experiences.

Similarly, the second simple moderated analysis included self-efficacy as the outcome variable, adverse childhood experiences as the predictor, and gender as the moderator. Again, the analysis revealed no significant moderated gender effect (see Table 10). Therefore, the hypothesis that adverse childhood experiences would be related to low self-worth in both males and females was not supported.

Table 10

Moderation Effect of Gender on the Relationship between Adverse Childhood Experiences and Self-Efficacy

Variable	Unstandardized Coefficients		<i>p</i>	95% CI
	B	<i>SE B</i>		
Gender	1.35	1.14	.081	[-0.91, 3.60]
ACE	0.12	0.23	.609	[-0.33, 0.57]
Gender X ACE	-0.40	0.37	.292	[-1.13, 0.34]

Note. CI = Confidence Interval, ACE = Adverse Childhood Experiences.

Moreover, it was additionally hypothesized that the relationship between adverse childhood experiences and externalizing behaviours (i.e., criminal recidivism and self-reported aggression) would be mediated by self-worth in both genders but to a greater extent in females. This hypothesis was tested using two separate moderated, mediated analyses; the first analysis used recidivism as the outcome variable and the second analysis used physical aggression as the outcome variable. In both analyses, parallel as opposed to serial mediation was used (Hayes, 2013). A parallel mediation includes more than one mediator in the model that do not influence each other (Hayes, 2013). As Table 11 illustrates no significant mediation effects emerged for either gender or either outcome variable as the confidence intervals contained zero.

Table 11

Conditional Indirect Effects of Self-Worth on the Relationship between Adverse Childhood Experiences and Externalizing Behaviours by Gender

Mediators	Recidivism		Physical Aggression	
	Males	Females	Males	Females
	Indirect Effect [CI]	Indirect Effect [CI]	Indirect Effect [CI]	Indirect Effect [CI]
Self-Esteem	0.01 [-0.01, 0.05]	0.01 [-0.02, 0.07]	-0.01 [-0.14, 0.04]	-0.03 [-0.28, 0.13]
Self-Efficacy	0.00 [-0.01, 0.03]	-0.00 [-0.04, 0.01]	-0.01 [-0.15, 0.03]	0.04 [-0.03, 0.25]

Note. CI = 95% Confidence Interval

Furthermore, results did not reveal a significant direct effect between adverse childhood experiences and criminal recidivism for both males and females. However, a significant direct effect was observed for males between adverse childhood experiences and physical aggression (refer to Table 12).

Table 12

Direct Effect of Adverse Childhood Experiences on Externalizing Behaviours

Externalizing Behaviour	Males		Females	
	Direct Effect	CI	Direct Effect	CI
Criminal Recidivism	0.11	[-0.26,0.03]	0.05	[-0.12, 0.21]
Physical Aggression	1.72	[1.18, 2.27]	0.54	[-0.18, 1.2]

Note. CI = 95% Confidence Interval.

Gender, Self-Worth, Poor Parenting Practices, and Externalizing Behaviour

The third research question examined the relationship between self-worth (self-esteem and self-efficacy), poor parenting practices, and externalizing behaviour (e.g., criminal recidivism, and self-reported aggression). It was hypothesized that self-worth would be related to poor parenting practices and externalizing behaviours. Furthermore, it was hypothesized that the indirect effect of self-worth on externalizing behaviour would not be contingent upon gender. Hence, two separate moderated-mediation models were used to test the hypothesis.

The first analysis used criminal recidivism as the outcome and the second analysis used physical aggression as the outcome. Like the previous analysis, parallel mediation was used in both analyses instead of serial mediation (Hayes, 2013). According to Table 13, a direct effect between was observed only between poor parenting practices and

physical aggression for both males and females. This finding partially supports the hypothesis that poor parental practices is associated with physical aggression regardless of gender.

Table 13

Direct Effect of Poor Parenting Practices on Externalizing Behaviour

Externalizing Behaviour	Male		Female	
	Direct Effect	CI	Direct Effect	CI
Criminal Recidivism	-0.19	[-0.40,0.01]	-0.14	[-0.48, 0.19]
Physical Aggression	1.51	[0.63, 2.38]	1.68	[0.13, 3.23]

Note. CI = 95% Confidence Interval.

However, no significant mediation effects were observed for criminal recidivism or physical aggression as the confidence intervals contained zero (refer to Table 14). Hence, results did not support the hypothesis that self-worth mediates the relationship between poor parenting practices and externalizing behaviour.

Table 14

Moderated Mediation Analysis of Self-Worth on the Relationship between Poor Parenting Practices and Externalizing Behaviour by Gender

Mediators	Criminal Recidivism		Physical Aggression	
	Males	Females	Males	Females
	Indirect Effect [CI]	Indirect Effect [CI]	Indirect Effect [CI]	Indirect Effect [CI]
Self-Esteem	0.01 [-0.01, 0.07]	0.03 [-0.01, 0.16]	0.00 [-0.06, 0.13]	0.02 [-0.25, 0.38]
Self-Efficacy	-0.00 [-0.04, 0.01]	-0.01 [-0.09, 0.02]	0.00 [-0.07, 0.11]	0.03 [-0.09, 0.39]

Note. CI = 95% Confidence Interval.

Self-Worth, Criminal Identification, and Criminal Recidivism

The last research question examined both the gender-neutral and gender responsive standpoint regarding the link between self-worth, criminal identification, and criminal recidivism. Specifically, the gender-neutral hypothesis maintains that high self-worth amplifies the relationship between criminal identification and criminal recidivism regardless of gender. However, the gender responsive hypothesis theorizes that higher self-worth reduces the relationship between criminal identification and criminal recidivism for all justice involved youth but the magnitude will be stronger for females.

To test these hypotheses, four moderated moderation regressions were conducted. The first analysis examined the interaction between self-esteem, gender, and criminal attitudes⁵ with criminal recidivism as the outcome variable. As Table 15 illustrates a significant three-way interaction between criminal attitudes, self-esteem, and gender was observed.

⁵ Criminal Attitudes scores have been flipped and positive scores reflect higher criminal attitudes.

Table 15

Moderated Moderation Analysis: The Effect of Self-Esteem X Gender X Criminal Attitude on Criminal Recidivism

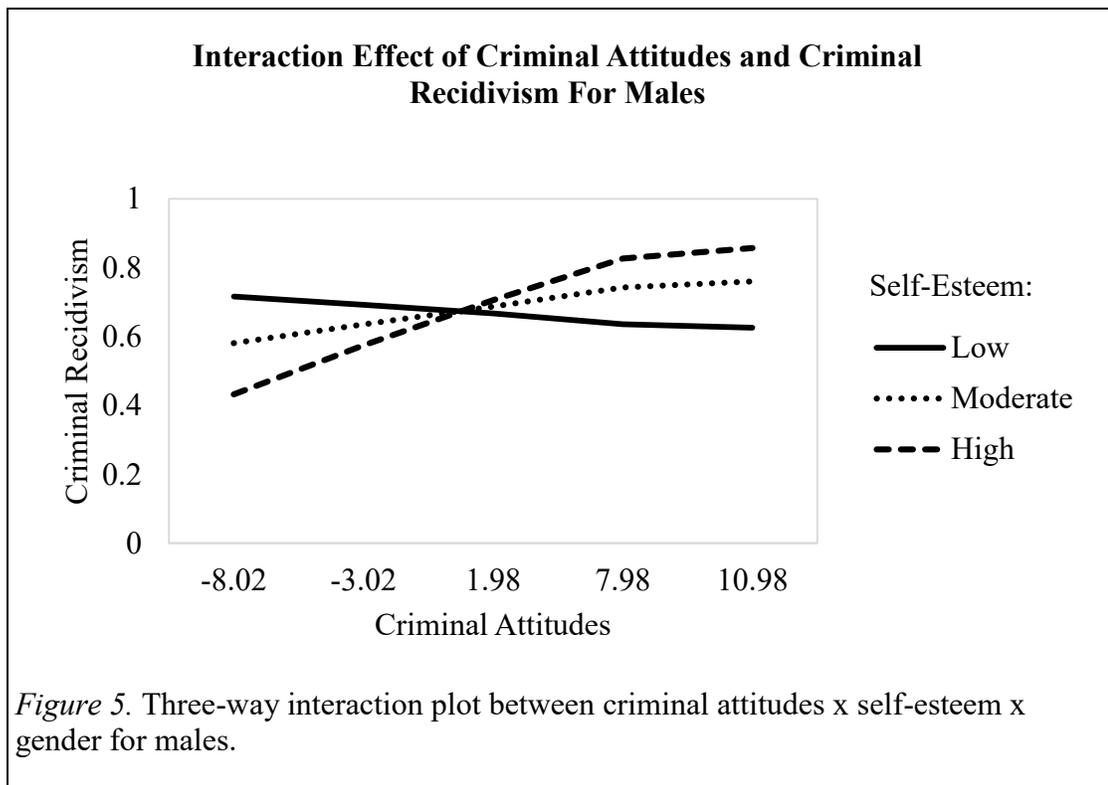
Variable	Unstandardized Coefficients			
	B	SE B	p	95% CI
Self-Esteem	-0.01	0.05	0.887	[-1.08, 2.72]
Criminal Attitude	-0.14	0.13	0.293	[-0.40, 0.12]
Self-Esteem X Criminal Attitude	0.01	0.01	0.127	[-0.00, 0.02]
Gender	-0.82	1.32	0.535	[-3.42, 1.77]
Self-Esteem X Gender	0.01	0.07	0.874	[-0.12, 0.14]
Criminal Attitude X Gender	0.67	0.22	0.002*	[-0.05, -0.01]
Criminal Attitude X Self-Esteem X Gender	-0.03	0.11	0.002*	[-0.05, -0.01]

Note. CI = Confidence Interval.

* $p < .05$

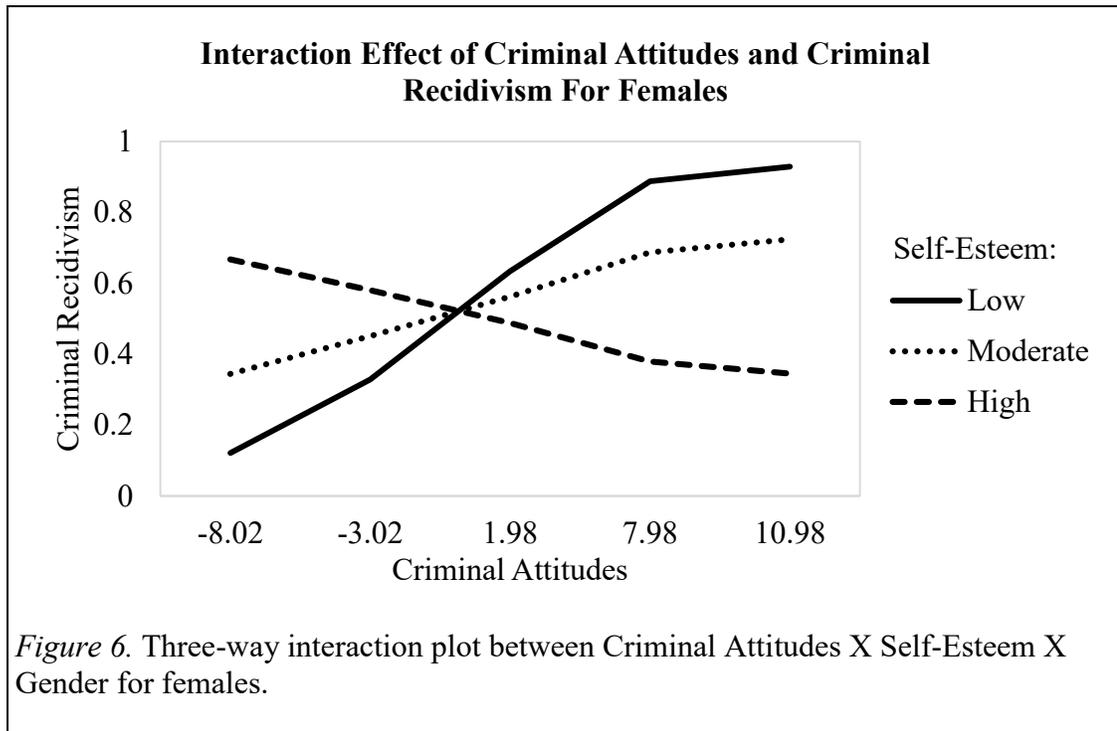
To probe this three-way interaction further two separate plots were generated; Figure 5 displays the relationship between criminal attitudes and recidivism for males at three different levels of self-esteem (Low = 10th percentile, Moderate = 50th percentile, High = 90th percentile). Similarly, Figure 6 displays the relationship between criminal attitudes and recidivism at three different levels of self-esteem (10th percentile, 50th percentile, and 90th percentile) for females. As Figure 5 illustrates, at relatively high level

of self-esteem (i.e., as evidenced by moderate– scores at the 50th percentile, and high levels of self-esteem– scores at the 90th percentile) the relationship between criminal attitudes and recidivism is positive. However, there appears to be no relationship between criminal attitudes and recidivism when self-esteem is relatively low (i.e., scores at the 10th percentile).



On the contrary, as evidenced by Figure 6, a different pattern of results emerged for females. Specifically, the relationship between criminal attitudes and recidivism was inversely related for females with high self-esteem (i.e., scores at the 90th percentile); suggesting that high self-esteem does in fact buffer or reduce the effects of criminal attitudes on recidivism among females only. Recall that in contrast to the males, high self-esteem amplified the effect of criminal attitudes on recidivism. Hence, the results

indicate that the gender-neutral hypothesis does not apply to females. Instead, these results show support for the gender responsive hypothesis since high self-esteem weakened the relationship between criminal attitudes and criminal recidivism in females.



The same series of analyses were then conducted using self-efficacy as opposed to self-esteem. As per Table 16, a significant three-way interaction between criminal attitudes, self-efficacy, and gender was observed.

Table 16

Moderated Moderation Analyses: The Effect of Self-Efficacy X Gender X Criminal Attitude on Criminal Recidivism

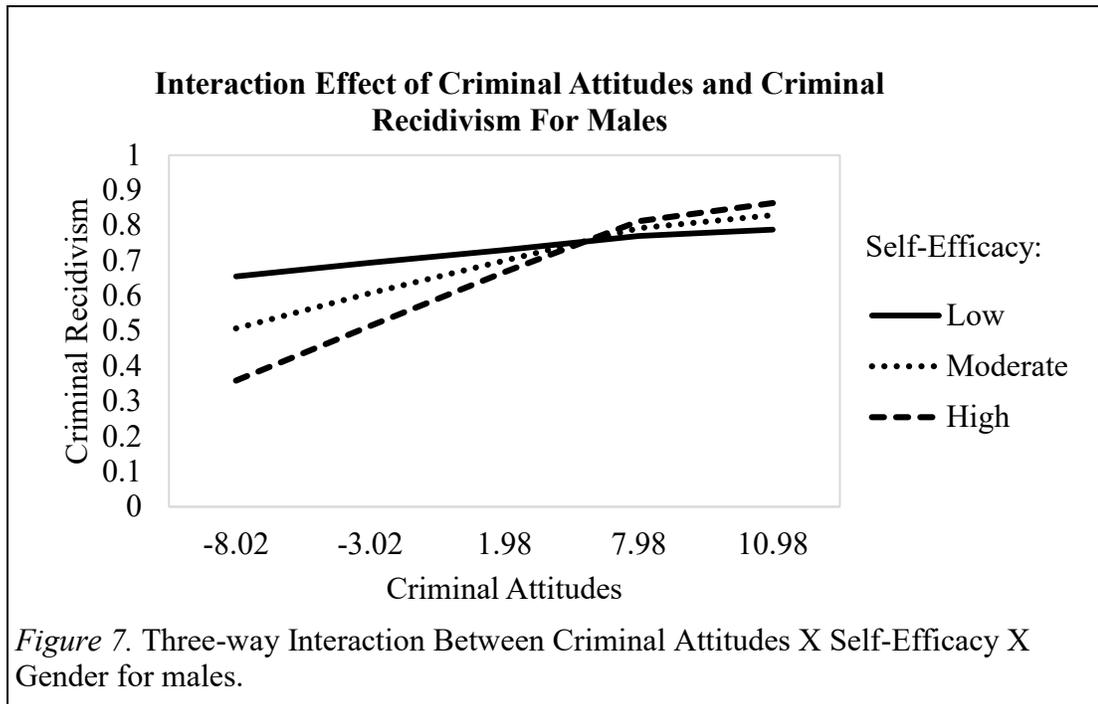
Variable	Unstandardized Coefficients			
	B	SE B	p	95% CI
Self-Efficacy	-0.03	0.04	0.490	[-0.10, 0.05]
Criminal Attitude	-0.13	0.21	0.532	[-0.55, 0.28]
Self-Efficacy X Criminal Attitude	0.01	0.01	0.303	[-0.00, 0.01]
Gender	-2.20	2.22	0.322	[-6.56, 2.15]
Self-Efficacy X Gender	0.04	0.05	0.441	[-0.06, 0.14]
Criminal Attitude X Gender	0.77	0.32	0.015*	[0.15, 1.40]
Criminal Attitude X Self-Efficacy X Gender	-0.02	0.01	0.012*	[-0.03, -0.04]

Note. CI= Confidence Interval

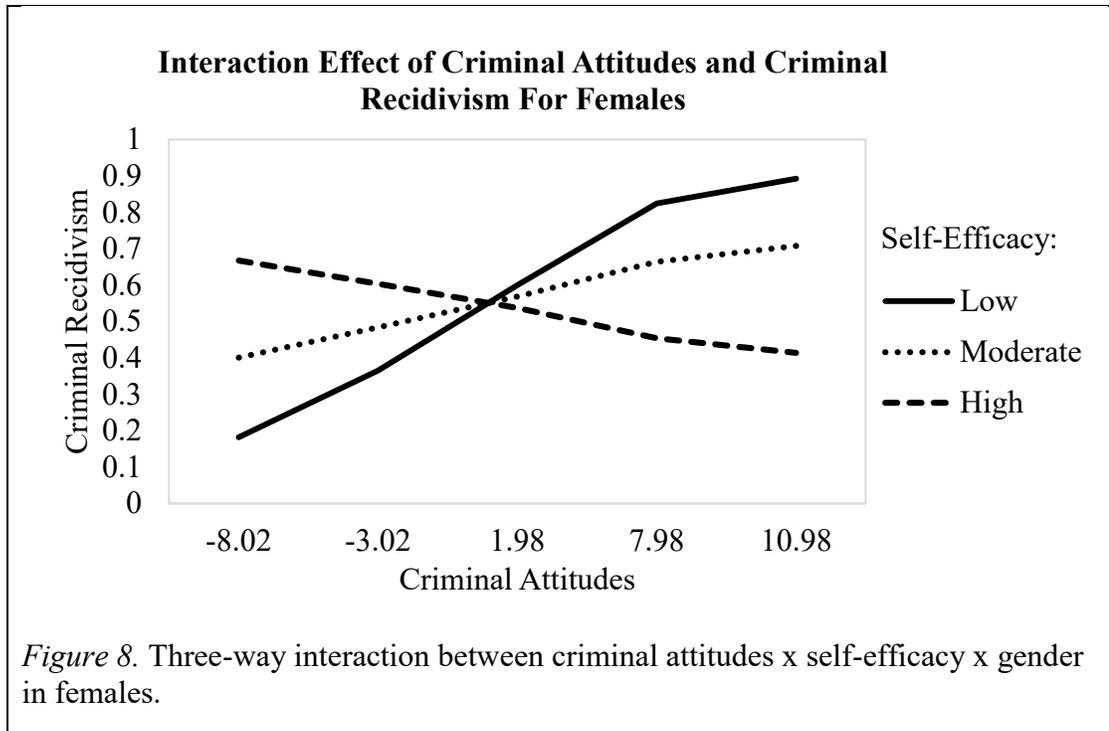
* $p < .05$

Furthermore, two separate plots were generated by probing the three-way interaction between self-efficacy, criminal attitudes, and criminal recidivism. Figure 7 displays the relationship between criminal attitudes and recidivism for males at the three different levels of self-efficacy (Low = 10th percentile, Moderate = 50th percentile, High = 90th percentile). Likewise, Figure 8 displays the levels of self-efficacy at the 10th percentile, 50th percentile, and 90th percentile correspondingly. Figure 7 demonstrates that as self-efficacy increases among the males (i.e., as evidenced by moderate and high levels

of self-efficacy) the relationship between criminal attitudes and recidivism increases; however there appears to be no relationship between criminal attitudes and recidivism when self-efficacy is relatively low (10th percentile).



Quite the reverse, as evidenced by Figure 8 the results of the three-way interaction for females displayed an inverse relationship with high self-efficacy (i.e., scores at the 90th percentile) between criminal identification and criminal recidivism. Thus, suggesting that similar to the results of self-esteem, high levels of self-efficacy dramatically reduce criminal attitudes and criminal recidivism in females. In addition, low levels of self-efficacy (i.e., scores at the 10th percentile) is detrimental in fostering criminal attitudes and subsequently is associated with higher rates of criminal recidivism for females. Thus, this shows support for the gender responsive hypothesis as high levels of self-efficacy weakened the link between criminal attitudes and criminal recidivism.



Furthermore, to test whether self-esteem strengthens or weakens the link between criminal associates and criminal recidivism, a third moderated moderation analysis was conducted. Results showed that no interactions were observed between self-esteem, criminal associates, and criminal recidivism (refer to Table 17).

Table 17

Moderated Moderation Analyses: The Effect of Self-Esteem X Gender X Criminal Associates on Criminal Recidivism

Variable	Unstandardized Coefficients			
	B	SE B	p	95% CI
Self-Esteem	0.04	0.04	.356	[-0.04, 0.12]
Criminal Associates	-0.36	0.28	.198	[-0.90, 0.19]
Self-Esteem X Criminal Associates	0.01	0.01	.285	[-0.01, 0.04]
Gender	0.65	1.23	.596	[-1.76, 3.07]
Self-Esteem X Gender	0.00	0.51	.993	[-0.99, 0.99]
Criminal Associates X Gender	-0.05	0.06	.431	[-0.17, 0.07]
Criminal Associates X Self-Esteem X Gender	-0.01	0.03	.703	[-0.06, 0.04]

Note. CI = Confidence Interval.

The final analysis examined the relationship of self-efficacy between criminal associates and criminal recidivism (refer to Table 18). Like the previous analysis, results showed that no interactions were observed. Hence, results did not support the gender-neutral or the gender responsive hypotheses since there were no significant relationships between self-worth, criminal associates, and criminal recidivism.

Table 18

Moderated Moderation Analyses: The Effect of Self-Efficacy X Gender X Criminal Associates on Criminal Recidivism

Variable	Unstandardized Coefficients			
	B	SE B	p	95% CI
Self-Efficacy	-0.00	0.03	.998	[-0.06, 0.06]
Criminal Associates	-0.62	0.51	.224	[-1.62, 0.38]
Self-Efficacy X Criminal Associates	0.01	0.01	.293	[-0.01, 0.03]
Gender	0.22	2.05	.916	[-3.81, 4.24]
Self-Efficacy X Gender	-0.32	0.86	.710	[-1.37, 2.01]
Criminal Associates X Gender	-0.01	0.05	.821	[-0.11, 0.08]
Criminal Associates X Self-Esteem X Gender	-0.11	0.02	.586	[-0.05, 0.03]

Note. CI = Confidence Interval

Discussion

Prior research has consistently disregarded females and applied theories for males to females (Belknap, 2015; Day et al., 2015). Additionally, the different predictors of offending for females have been understudied (Burman et al., 2001). Hence, the purpose of this study was to explore the relationships between self-worth (self-esteem and self-efficacy), childhood adversity, poor parenting practices, criminal identification (criminal attitudes and criminal associates), and externalizing behaviours (criminal recidivism, physical aggression). Specifically, the study was interested in understanding: 1) if levels

of self-worth varied between males and females, 2) whether self-worth influenced childhood adversity, poor parenting practices and externalizing behaviours differently for males and females, 3) whether self-worth is related to poor parenting practices and externalizing behaviour, 4) and whether self-worth strengthened or weakened the relationship between criminal identification and criminal recidivism differently for males and females. In sum, females evidenced lower self-worth than males. Additionally, results showed that self-worth did not influence the relationship between childhood adversity, poor parenting practices and externalizing behaviours. However, there was a significant three-way interaction between gender, self-worth and criminal attitudes.

Self-Worth

One of the most studied constructs in social sciences is self-worth (Bachman, O'Malley, Freedman-Doan, Trzesniewski, & Donnellan, 2011). Additionally, self-worth has been a topic of debate between gender-neutral scholars (e.g., Andrews & Bonta, 2003) and gender responsive scholars (Blanchette, 2002; Salisbury et al., 2009). Although research has consistently shown that females evidence lower levels of self-worth, there remains a paucity of research with justice involved populations. Hence, one of the fundamental questions of this study was whether females evidenced lower levels of self-worth than males in the study's sample. Consistent with prior research, the results of this study showed that indeed females did evidence lower levels of self-worth when measured via self-esteem than males; although the magnitude of this difference was classified as small as per Cohen (1988).

Relatedly, although prior research has found that males have higher self-efficacy than females (Wigfield et al., 1996), the study did not find any gender differences

although the trend was in the expected outcome. One of the possibilities could be that most research on self-efficacy has been conducted with the general population regarding educational attainment, peer acceptances, and instrumental goals (Erdley & Asher, 1996). However, the sample used by this study was high-risk justice involved youth (youth that are at risk of committing violent offences) who may conceptualize self-efficacy differently from the general population. Past research has shown that children who are aggressive tend to have higher self-efficacy beliefs regarding antisocial behaviour (Perry et al., 1986) and low self-efficacy beliefs about prosocial behaviour (Erdley & Asher, 1996). Hence, how the youths are interpreting the self-efficacy statements may have impacted the results.

Childhood Adversity, Self-Worth, and Externalizing Behaviour

According to Felitti et al. (1998), high proportions of children may experience at least one type of adverse childhood experiences (ACEs). Additionally, Currie and Tekin (2006) mention that experiences of childhood adversity is a risk factor for later externalizing behaviour. Consequently, the study also examined the relationship between childhood adversity, self-worth, and externalizing behaviours (criminal recidivism and self-reported aggression). Results indicated that females had higher levels of adverse childhood experiences than males. This finding is consistent with other research that state that childhood adversity is more common among female offender samples than male samples (Van Voorhis, 2012; Wanamaker, McQuaid, & Brown, 2016). Additionally, this supports the gender responsive stance that childhood adversity is a particularly salient problem for justice involved females (Belknap & Holsinger, 2006; Salisbury & Van Voorhis, 2009; Wattanaporn & Holtfreter, 2014).

However, the study did not find a significant association between adverse childhood experiences and externalizing behaviours unlike other studies that have tapped into ACEs and criminal conduct (Baglivio et al., 2015; Dube, Williamson, Thompson, Felitti, & Anda, 2004; Felitti et al., 1998). Perhaps the link between ACEs and crime is not as strong for high-risk youth compared to low-risk youth, since past research has mainly sampled youths who were not high-risk to re-offend. Additionally, Scott (2017) meta-analyzed 22 studies and found that global domains of child abuse were not significant predictors of recidivism for both males and females.

According to Baumeister et al. (1996) traumatic events lower self-esteem. In addition, prior research has shown that childhood abuse and trauma negatively impacts self-efficacy (Cheever & Hardin, 1999). However, the study did not find any significant effect (for males or females) when examining the mediating effects of self-worth on adverse childhood experiences and externalizing behaviour. Possibly additional mediators need to be examined along with adverse childhood experiences that may contribute to externalizing behaviours. For example, substance abuse has also been considered a strong risk factor for males and females (Andrews et al., 2012; Belknap, 2015; Olver et al., 2014; Salisbury & Van Voorhis, 2009). The combination effect of self-worth and substance abuse may produce different results when examining the relationship between adverse childhood experiences and externalizing behaviours.

Poor Parenting Practices and Externalizing Behaviours

The relationship between parental discipline and antisocial behavior in youth has been examined in several studies (Clark & Shields, 1997; Gleuck & Gleuck, 1950; Gorman-Smith, Tolan, Zelli, & Huesmann, 1996). Hence, the study also examined the

mediating effect of self-worth on poor parenting practices and externalizing behaviours. Although research has shown that poor parenting practices is associated with delinquency and aggression in both males and females (Hubbard & Pratt, 2002; Olver et al., 2014; Scott, 2017), results of this study revealed that females reported more negative poor parenting experiences than males; although the magnitude of the difference was classified as small (Cohen, 1988). Since females in this study reported higher amounts of ACEs, it is not surprising that females also had more negative family circumstances/parenting than males. In addition, the research speculates that high-risk justice involved female youth may be exposed to more negative family circumstances and parenting than males (Hart et al., 2007; Hoeve, et al., 2009).

While most studies of poor parenting practices and criminal conduct disregard females (Loeber & Stouthamer-Loeber, 1986), this study examined the links between poor parenting practices and externalizing behaviour for both males and females. Although various research has postulated that inconsistent discipline, poor parent-child relations, and inadequate monitoring influence externalizing behaviours in children (Hoeve et al., 2009; Wasserman et al., 1996), the results of this study did not find a direct effect between poor parenting practices and criminal recidivism. This finding did not replicate previous research that indicate that poor parenting practices is also predictive of criminal behaviour for both males and females (Scott, 2017; Wasserman et al., 1996).

However, consistent with past research the study found that poor parenting practices correlated directly with physical aggression for both males and females. One possibility of this finding is that exposure to negative family circumstances and poor parenting that is not necessarily abusive may lead to acting out aggressively in both males

and females (Calhoun, Glaser, Peiper, & Carr, 2015). Furthermore, the study examined the role of self-worth in poor parenting practices and found that self-worth did not influence the relationship between poor parenting practices and externalizing behaviour. Like the findings of ACEs, additional mediators (e.g., coping, substance abuse, and positive relationships) may be needed to explain the relationship between self-worth, poor parenting practices and externalizing behaviours.

Gender, Criminal Identification, Self-Worth, and Criminal Recidivism

Correctional researchers have always posited that antisocial peers and attitudes are among the most robust predictors of criminal recidivism in both males and females (Green, 2006; Scott, 2017; Wormith, 1984). Hence, the research also examined the gender-neutral and gender responsive standpoint on self-worth and criminal recidivism. Results of the three-way interactions for males revealed that high self-esteem amplifies the relationship between criminal attitudes and criminal recidivism. In contrast, results of the three-way interactions for females supported the gender responsive hypothesis that high self-esteem buffers the risk of criminal attitudes and criminal recidivism. Specifically, high self-worth weakened the relationship between criminal attitudes and criminal recidivism for females. This is consistent with prior research in mainstream correctional research (Green, 2006; Olver et al., 2014) as well as gender responsive research (Blanchette & Brown, 2006; Van Voorhis, 2012). In addition, males indicated significantly higher association with criminal associates than females, albeit the magnitude of the difference was moderate (Cohen, 1988). Hence, this finding is consistent with theories of male offending that posit that males have greater access to engage with negative peers (Belknap, 2015).

Is Self-Worth a Strength/Protective Factor?

Results from the study revealed that self-worth indeed interact with criminal attitudes differently depending on gender. Results showed that low levels of self-worth were associated with higher rates of criminal attitudes and criminal recidivism in females, whereas, high levels of self-worth were associated with higher rates of criminal attitudes and criminal recidivism in males. As mentioned in the literature review, there has been ongoing debate about whether self-worth is a strength or a criminogenic risk factor (Van Voorhis, 2012). From the results of this study, high self-esteem and high self-efficacy reduce the risk to re-offend but only in females. Recall that the study uses the umbrella term strengths (Jones et al., 2015) to capture both promotive and protective factors that buffers the risk of offending. Hence, self-worth can be conceptualized as a strength factor but more specifically as a protective factor for females.

Limitations

As with any research, there are certain limitations of this study. First, the sample size of females was low compared to males which may have impacted the moderated analyses. Additionally, the sample size was relatively low overall. Finding interactions effects is typically challenging with small sample sizes due to power issues (Hayes, 2013) which may have accounted for some of the null findings (e.g., those related to the simple moderations). But at the same time, significant and meaningful three-way interactions also emerged suggesting that power was sufficient for some of the analyses. In addition, the sample of the study was limited to Ontario, and a sampling bias may have occurred since a high proportion of the sample that the study included were high-risk justice involved youth. Additionally, the study did not examine variables by race which limits

the generalizability of the findings. Therefore, the results of the study limit the findings to a small subset of justice involved youth.

Moreover, the majority of the participants that were interviewed at the Centre for Addictions and Mental Health (CAMH) were not administered the Youth Assessment and Screening Instrument (YASI). This was problematic since three of the measures were derived from the YASI domains. Hence, the results could only apply to those youths that were either in custody, in remand, or were serving their sentences out in the community. Furthermore, the measures—YLS: Poor Parenting Practices and YASI: Criminal Associates had moderate inter-rater reliability which could have insufficient items to fully capture poor parenting practices and criminal associates. Additionally, a separate measure of narcissism was not administered to explore whether the participants (especially males as they evidenced higher levels of self-esteem than females) were interpreting the global domain of positive self-esteem in an unrealistic view of the self. This could impact the study since the measure of self-esteem used in the study may not have truly captured positive self-esteem as intended, but rather inflated view of the self which could have different outcomes and implications.

Lastly, the study did not examine individual ACE factors which could have allowed the study to fully understand the relationship between individual ACE items, self-worth, and recidivism. As seen in research by Scott (2017) individual indicators like maltreatment/neglect and physical abuse were better predictors of recidivism, although small effects were observed ($d < .30$) for both males and females. Additionally, Dutton and Hart (2016) suggested that male offenders who were physically abused as a child were more likely to engage in physical violence, and inmates who were sexually abused

as a child were more likely to be sexually violent. Thus, suggesting that maybe examining individual ACE items may be a better predictor than the combination of adverse childhood experiences for high-risk justice involved youth.

Implications for Practice

The study provides implications for the assessment and treatment of female offenders based on factors that have emerged to be important treatment targets. Prior research has demonstrated the importance of treating abuse and trauma in females for better rehabilitation (Bloom et al., 2003; Chesney-Lind & Shelden, 2004). As evidenced by the study, females reported significantly more adverse childhood experiences and poor parenting practices. From a responsivity perspective, if adverse childhood experiences and poor parenting practices are not addressed prior to placing a female offender in a treatment program, the offender may not respond effectively to other intervention programs they may be participating in. For example, if an offender is experiencing trauma/neglect and poor relations with parents then the offender may not be focused in treatment. Thus, assessments should consider whether an individual has experiences of poor parenting practices alongside childhood adversity to effectively evaluate and place offenders in appropriate treatment programs.

Additionally, an important treatment target identified by the study —self-worth, needs to be incorporated in assessments and interventions to better understand factors that are important to target in treatment for female offenders. The study has identified self-worth as a strength factor for females and according to Bloom et al. (2003), strengths promote reductions in recidivism. Moreover, identifying strengths in an individual can improve an offender's quality of life which is one of the goals of effective intervention

according to gender responsive researchers (Bloom et al., 2003; Van Voorhis et al., 2010).

Implications for Theory

The results of the study support both the gender responsive and gender-neutral perspectives of offending. Taken together, the results advocate for a gender informed theory of crime. In short, a gender informed theory integrates components from both the gender-neutral and gender responsive theories. In addition to the *Central Eight* theorized by the gender-neutral researchers (Bonta, & Andrews, 2017), a gender informed theory underscores the importance of additional factors such as trauma and/or victimization, unhealthy relationships, low self-worth, parental stress, unsafe living situations, and female specific health needs (Blanchette & Brown, 2006; Bloom et al., 2003; Gobeil et al., 2016; Van Voorhis, 2012). Additionally, a gender informed theory states that while there are similar risk factors for both males and females, the experiences (abuse, mental health, and relationships) and the underlying expressions (conceptualizations) could be distinct for males and females (Blanchette & Brown, 2006). Furthermore, self-worth which was previously considered not an important factor to target has evidenced to be important especially for females. Consideration of these factors and how they interact with criminal behavior in males and females should be incorporated in current theories of crime.

Implications for Future Research

Future research should consider including a larger sample size with equal number of males and females. Likewise, youth from different parts of Canada or the US should be included to test the moderated-mediated effects of self-worth on various predictors and

criminal recidivism. Additionally, future research should consider validating measures that can be used with different races and cultural backgrounds to fully understand how factors such as adverse childhood experiences, poor parenting practices, and self-worth is associated with externalizing behaviour in different races. Moreover, distinguishing whether self-esteem measures are capturing positive self-esteem or rather an unrealistic inflated view of the self—defined as narcissism, need to be explored further. If the objective of the study is to capture a global domain of positive self-esteem, then more rigorous measures that has shown to be measuring positive self-esteem should be used.

Furthermore, to examine the relationships between adverse childhood experiences, poor parenting practices, self-worth, and externalizing behaviour, future research should consider examining the severity of adverse childhood experiences and poor parenting practices. Additional mediator variables should also be included to understand the indirect effects that adverse childhood experiences and poor parenting practices may have on externalizing behaviour. Lastly, future research should use a more reliable measure to tap into poor parenting practices and criminal associates. Although, the domain of YASI: Criminal Associates and YLS: Poor Parenting Practices have shown to be reliable in past research, future research should be considering ways to improve the inter-rater reliability.

Conclusion

Although research has started to explore gender differences in criminal behaviour, there still exists a paucity when it comes to exploring the relationships between adverse childhood experiences, self-worth, poor parenting practices, and externalizing behaviour in both males and females. The current study was grounded in gender-neutral and gender

responsive research and explored gender differences in self-worth, adverse childhood experiences, poor parenting practices, and externalizing behaviour. Results were consistent with past research and indicated that females tend to have lower self-worth than their male counterparts, and females reported higher adverse childhood experiences and poor parenting practices. In addition, results indicated that poor parenting practices was related to physical aggression in both males and females.

Additionally, moderated-mediated analyses revealed that there were no gender differences in the mediating role of self-worth between adverse childhood experiences and externalizing behaviour, as well as between poor parenting practices and externalizing behaviour in both males and females. However, more primary research is needed to measure self-worth in the correctional population (both males and females) to test how self-worth relates to additional predictors of criminal behaviour. Furthermore, the study revealed that the relationship between self-worth, criminal attitudes, and criminal recidivism varied as a function of gender. Results specifically showed that high self-worth buffers the risk between criminal attitudes and criminal recidivism in females. Hence, the study revealed that self-worth influences males and females in distinct ways. However, more rigorous research is required to understand the impact that self-worth exerts on different facets of offending behaviour.

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Appendix A: YASI: Measure of Criminal Associates

Items		
1. Associates the youth spends his or her time with	<ul style="list-style-type: none"> Peers who have a positive pro-social influence. 	0
	<ul style="list-style-type: none"> No friends or companions, no consistent friends. 	0
	<ul style="list-style-type: none"> Friends who have a negative delinquent influence. 	1
	<ul style="list-style-type: none"> Associates or has been seen with gang members. 	2
	<ul style="list-style-type: none"> Family gang members. 	3
	<ul style="list-style-type: none"> Youth is a gang member. 	4
2. Admiration/emulation of high risk delinquent peers	<ul style="list-style-type: none"> Youth does not admire, emulate delinquent peers. 	0
	<ul style="list-style-type: none"> Youth minimally admires, emulates peers. 	1
	<ul style="list-style-type: none"> Youth admires, emulates peers. 	2
	<ul style="list-style-type: none"> Youth is a delinquent leader who is admired or emulated by others. 	3
3. Number of months youth has been associating with negatively influencing/delinquent friends/gang:	<ul style="list-style-type: none"> Month has associated with delinquent friends: [Number] 	0-2
	<ul style="list-style-type: none"> Month has associated with hang: [Number] 	0-2
4. Amount of free time youth spends with negatively influencing/delinquent peers: No delinquent peers.	<ul style="list-style-type: none"> No delinquent peers. (0) 	0
	<ul style="list-style-type: none"> Spends 1 or 2 hours of free time per week. (1) 	1
	<ul style="list-style-type: none"> Spends 3 to 7 hours of free time per week. (2) 	2

	<ul style="list-style-type: none"> Spends 8 to 14 hours of free time per week. (3) 	3
	<ul style="list-style-type: none"> Spends all or nearly all of free time. (4) 	4
5. Strength of negatively influencing / delinquent peer influence	<ul style="list-style-type: none"> No delinquent peers. 	0
	<ul style="list-style-type: none"> Does not go along with delinquent peers. 	0
	<ul style="list-style-type: none"> Sometimes goes along with delinquent peers. 	1
	<ul style="list-style-type: none"> Usually goes along with delinquent peers. 	2
	<ul style="list-style-type: none"> Leads delinquent peers. 	3

Appendix B: YASI: Measure of Criminal Attitudes

Items		
Accepts responsibility	• Openly accepts or is proud of criminal behaviour	-2
	• Minimizes, denies, justifies, excuses or blames others	-1
	• Indicates some awareness of the need to accept responsibility	0
	• Recognizes that he/she must accept responsibility	1
	• Voluntarily accepts full responsibility for criminal behaviour	2
Law-abiding attitudes	• Openly admits unwillingness to demonstrate law-abiding behaviour	-2
	• Feels law-abiding behaviour does not apply to him/her	-1
	• Expresses neutral attitude toward law-abiding behaviour	0
	• Expresses a desire to live in a law-abiding manner	1
	• Clearly positive commitment toward law-abiding behaviour	2
Attitudes toward the criminal justice system (e.g., courts, police, corrections)	• Views all criminal justice authorities with contempt	-2
	• Expresses resentment toward criminal justice authorities	-1
	• Expresses neutral attitude toward criminal justice system	0
	• Appreciates the role of criminal justice authorities	1
	• Indicates respect for the role of criminal justice authorities	2
Understands impact of behavior	• Total lack of empathy for harm cause to others (e.g., callous)	-2
	• Minimizes or denies harm cause	-1
	• Does not understand or fully appreciates effects on others	0
	• Indicates awareness that harm has been caused	1
	• Fully understands the nature of harm caused to others	2

Attitudes when engaged in antisocial/criminal act(s)	• Confident, or brags.	-2
	• Hyper, excited, or stimulated.	-1
	• Unconcerned or indifferent.	0
	• Uncertain, or indecisive	1
	• Nervous, afraid, or worried.	2
Respect for authority figures	• Views all authority with contempt	-2
	• Expresses resentment toward authorities	-1
	• Expresses neutral attitude toward authorities	0
	• Appreciates the role of authorities	1
	• Indicates respect for the role of authorities	2
Willingness to make amends	• Unwilling to make amends	-2
	• Non-committal toward making amends	-1
	• Willing to cooperate with making amends	0
	• Indicates a desire to make amends	1
	• Eagerly indicates plans for making amends	2
Optimism	• Expresses profound sense of hopelessness regarding the future	-2
	• Believes little matters because his/her future will not be bright	-1
	• Believes some things matter and he/she has a future	0
	• Looks forward to the future with anticipation	1
	• Genuinely optimistic about the future	2
Motivation to address attitudes risk (e.g., willingness to change)	• Uncooperative or unwilling to work on positive change	-2
	• Recognizes need to change but not motivated to change	-1
	• Attitudes not a problem-no need for change	0
	• Is cooperative or taking steps toward positive change	1
	• Actively committed and working on change	2

Appendix C: ACE Proxy Measures coded from YASI

ACE Items	YASI Items
1. Emotional abuse	<ul style="list-style-type: none"> • Parents/caregivers are hostile toward youth, berating, belittling • Emotional abuse perpetrated by parent, stepparent, other adult, or currently
2. Physical abuse	<ul style="list-style-type: none"> • Physical violence between parents and children • Physical abuse perpetrated by parent, stepparent, other adult, or currently
3. Sexual abuse	<ul style="list-style-type: none"> • Sexual abuse perpetrated by parent, stepparent, other adult, or currently
4. Alcohol/drugs in home	<ul style="list-style-type: none"> • Circumstances of family members who are living in the household (alcohol/drug problems with mother, father, stepparent, sibling, or other) • Historic problems of family members who lived in the environment in which the youth was primarily raised (alcohol/drug problems with mother, father, stepparent, sibling, or other)
5. Mental health problems in home	<ul style="list-style-type: none"> • Circumstances of family members who are living in the household (mental health problems with mother, father, stepparent, sibling, or other) • Historic problems of family members who lived in the environment in which the youth was primarily raised (mental health problems with mother, father, stepparent, sibling, or other)
6. “Prison” household	<ul style="list-style-type: none"> • Circumstances of family members who are living in the household (mother, father, stepparent, sibling, or other with a youth/adult criminal and/or violent criminal record) • Historic problems of family members who lived in the environment in which the youth was primarily raised (mother, father, stepparent, sibling, or other with a youth/adult criminal and/or violent criminal record)
7. Physical neglect	<ul style="list-style-type: none"> • Times kicked out of home • Court finding of child neglect
8. Emotional neglect	<ul style="list-style-type: none"> • Rewards for good behaviour (affection, praise, or other tangible means) are never appropriate or there are no rewards • No family support network • Family provides no opportunities for involvement in family activities • Family provides no opportunities for growth • Youth does not feel close to or have a good relationship with any family member

	<ul style="list-style-type: none"> • Parents/caregivers are hostile toward youth, berating, belittling or are indifferent, uncaring, uninterested, and unwilling to help
9. Violence toward mother	<ul style="list-style-type: none"> • Physical violence between parents
10. Parents separated or divorced (unsTable home)	<ul style="list-style-type: none"> • Total number of placements with Children's Aids Society (for any reason) • History of being in a foster home • History of living independently (as a youth) • History of homelessness/shelter • Other (depending on location)

Note. Participants get a score of '1' if any of the corresponding YASI items are positively endorsed (this is in keeping with the spirit of the original ACE questionnaire). Given that there are a total of 10 individual ACE items, total plausible scores can range from 0 to 10.

Appendix D: YLS: Poor Parental Practices

Items	Score
Inadequate Supervision:	Not Present (0)
	Present (1)
Difficulty in Controlling Behaviour:	Not Present (0)
	Present (1)
Inappropriate Discipline:	Not Present (0)
	Present (1)
Inconsistent Parenting:	Not Present (0)
	Present (1)
Poor Relations Father-Youth:	Not Present (0)
	Present (1)
Poor Relations Mother-Youth:	Not Present (0)
	Present (1)

Appendix E: Rosenberg Self-Esteem Scale (RSES)

Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle **SA**. If you agree with the statement, circle **A**. If you disagree, circle **D**. If you strongly disagree circle **SD**.

Strongly Agree - SA Agree - A Disagree - D Strongly Disagree - SD

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. On the whole, I am satisfied with myself.	SA	A	D	SD
2. At times, I think I am no good at all.	SA	A	D	SD
3. I feel that I have a number of good qualities.	SA	A	D	SD
4. I am able to do things as well as most other people.	SA	A	D	SD
5. I feel I do not have much to be proud of.	SA	A	D	SD
6. I certainly feel useless at times.	SA	A	D	SD
7. I feel that I'm a person of worth, at least on an equal plane with others.	SA	A	D	SD
8. I wish I could have more respect for myself.	SA	A	D	SD
9. All in all, I am inclined to feel that I am a failure.	SA	A	D	SD
10. I take a positive attitude toward myself.	SA	A	D	SD

Appendix F: General Self-Efficacy Scale (GSES)

Instructions:

The following questions ask about how people respond to different situations in their lives. When deciding how to answer each question, consider what would be your response most of the time. Read each statement and Circle the answer the shows how much you agree or disagree with it. There are no right or wrong answers - it is important for you to answer as honestly as you can.

		Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1.	If something looks too complicated, I will not even bother to try it.	SA	A	NAD	D	SD
2.	When trying something new, I soon give up if I am not successful right away.	SA	A	NAD	D	SD
3.	I avoid trying to learn new things when they look too difficult.	SA	A	NAD	D	SD
4.	When I make plans, I am certain I can make them work.	SA	A	NAD	D	SD
5.	If I can't do a job the first time, I keep trying until I can do it.	SA	A	NAD	D	SD
6.	When I have something unpleasant to do, I stick to it until I finish it.	SA	A	NAD	D	SD

7.	When I decide to do something, I go right to work on it.	SA	A	NAD	D	SD
8.	Failure just makes me try harder.	SA	A	NAD	D	SD
9	When I set important goals for myself, I rarely achieve them.	SA	A	NAD	D	SD
10.	I do not seem to be capable of dealing with most problems that come up in my life.	SA	A	NAD	D	SD
11.	When unexpected problems occur, I don't handle them very well.	SA	A	NAD	D	SD
12.	I feel insecure about my ability to do things.	SA	A	NAD	D	SD

Appendix G: Aggression Questionnaire (AQ)

Circle one response number for each statement					
Not at all like me	A little like me	Somewhat like me	Very much like me	Completely like me	
1	2	3	4	5	I may hit someone if he or she provokes me.
1	2	3	4	5	I have threatened people I know.
1	2	3	4	5	Someone has pushed me so far that I hit him or her.
1	2	3	4	5	I have become so mad that I have broken things.
1	2	3	4	5	At times I can't control the urge to hit someone.
1	2	3	4	5	I get into fights more than most people.
1	2	3	4	5	If somebody hits me, I hit back.
1	2	3	4	5	If I have to resort to violence to protect my rights, I will.

Note. Only items measuring physical aggression is included.

Appendix H: Recidivism Coding Manual**RECIDIVISM CODING**

DOB: _____
 yyyy-mm-dd

INDEX_OFF_DATE: _____ (use n/a if not available)
 yyyy-mm-dd

INDEX_ARREST: _____ (use n/a if not available)
 yyyy-mm-dd

INDEX_CONV_P: _____ (use n/a if not available)
 yyyy-mm-dd

INDEX_CONV_M: _____ (use n/a if not available)
 yyyy-mm-dd

INDEX_CONV_C: _____ (use n/a if not available)
 yyyy-mm-dd

INDEX_CONV_SOURCE: Pathways Ministry CPIC

INDEX_OFFENCE:

- | | |
|---|--|
| <input type="checkbox"/> 1. 'Homicide and Related' _____ | <input type="checkbox"/> 15. 'Possession Drugs' _____ |
| <input type="checkbox"/> 2. 'Serious Violent' _____ | <input type="checkbox"/> 16. 'Traffic - Criminal Code' _____ |
| <input type="checkbox"/> 3. 'Violent Sexual' _____ | <input type="checkbox"/> 17. 'Administration of Justice' _____ |
| <input type="checkbox"/> 4. 'Break & Enter and Related' _____ | <input type="checkbox"/> 18. 'Impaired Driving' _____ |
| <input type="checkbox"/> 5. 'Non-Violent Sexual' _____ | <input type="checkbox"/> 19. 'Public Order Offences' _____ |
| <input type="checkbox"/> 6. 'Traffic/Import Drugs' _____ | <input type="checkbox"/> 20. 'Other Federal Offences' _____ |
| <input type="checkbox"/> 7. 'Weapons Offences' _____ | <input type="checkbox"/> 21. 'Parole Violations' _____ |
| <input type="checkbox"/> 8. 'Fraud and Related' _____ | <input type="checkbox"/> 22. 'Highway Traffic Act (Prov.)' _____ |
| <input type="checkbox"/> 9. 'Misc. Offences Against Person' _____ | <input type="checkbox"/> 23. 'Liquor Control Act (Prov.)' _____ |
| <input type="checkbox"/> 10. 'Theft/Possession' _____ | <input type="checkbox"/> 24. 'Other Provincial Offences' _____ |
| <input type="checkbox"/> 11. 'Assault and Related' _____ | <input type="checkbox"/> 25. 'Municipal Bylaws' _____ |
| <input type="checkbox"/> 12. 'Arson/Property Damage' _____ | <input type="checkbox"/> 26. 'Unknown' _____ |
| <input type="checkbox"/> 13. 'Morals Offences' _____ | |
| <input type="checkbox"/> 14. 'Obstruct Justice' _____ | |

INTVW_DATE: _____ INTVW_LOC: _____ COMMORCUS: COMMUNITY CUSTODY
yyyy-mm-dd

ADMDATE ADMREAS RLSEDATE RLSEREAS DEPDATE DEPREAS

TIME AT RISK – TIMELINE

DATE_AT_RISK1: _____ <i>yyyy-mm-dd</i>	NOT_AT_RISK1: _____ <i>yyyy-mm-dd</i>
DATE_AT_RISK2: _____ <i>yyyy-mm-dd</i>	NOT_AT_RISK2: _____ <i>yyyy-mm-dd</i>
DATE_AT_RISK3: _____ <i>yyyy-mm-dd</i>	NOT_AT_RISK3: _____ <i>yyyy-mm-dd</i>
DATE_AT_RISK4: _____ <i>yyyy-mm-dd</i>	NOT_AT_RISK4: _____ <i>yyyy-mm-dd</i>
DATE_AT_RISK5: _____ <i>yyyy-mm-dd</i>	NOT_AT_RISK5: _____ <i>yyyy-mm-dd</i>

