Running head: GENDER, ABUSE, AND CRIMINAL RECIDIVISM

Child abuse, its aftermath, and criminal recidivism in a mixed gender sample of
adolescent offenders

by

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Abstract

The current study examines if childhood abuse increases the likelihood of criminal recidivism through four potential mediators—deviant peers, substance abuse, running away from home, and internalizing behaviours (i.e., anxiety, depression), and determine if these relationships vary across gender. To test these relationships, a prospective research design was used with 332 justice-involved youth (113 females, 219 males; ages 12-21). Official provincial recidivism data was obtained and the average follow up time was 30.43 months ($SD = 4.96$). Overall, substance abuse and deviant peers significantly and positively mediated the relationship between childhood abuse and criminal recidivism for males only. Internalizing behaviours and running away from home, however, were not found to mediate the relationship between child abuse and criminal recidivism for either gender. Limitations include reliance on a simplistic measure of childhood abuse. Results suggest that an integrated approach of combining gender-neutral and gender-specific theories of criminal behaviour is warranted.

Key words: Recidivism, youth, childhood abuse, gender differences

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Child abuse, its aftermath, and criminal recidivism in a mixed gender sample of
adolescent offenders

Historically, women and girls have been ignored within the literature on offending behaviour, often because males are typically more violent and tend to commit more crime than females (Chesney-Lind, 1997). Early theories of criminal behaviour tended to focus solely on male offenders, however, more recent theories have begun to include both genders (Belknap, 2007; Chesney-Lind, 1997). It is important for theories of criminal behaviour to consider both genders, as many researchers believe that males and females commit crime for very different reasons (Belknap, 2001; Chesney-Lind, 1997; Covington & Bloom, 2006). While it is highly recognized that males commit more offences than females, research also suggests that females and males tend to vary in the types of crimes they commit (Chesney-Lind, 1989; Herbert, 2009). For instance, males tend to commit more aggressive, serious criminal acts, such as aggravated assault and homicide (Herbert, 2009; Mahony, 2011). However, the rate of less serious offences—property-related offences and minor assaults tend to be gender invariant—particularly when self-report studies are administered to youth (Fitzgerald, 2003; Mahony, 2011). For instance, male and female youth who come into contact with the criminal justice system appear to commit property-related offences at similar rates (28.3% of female cases in court and 25.9% of male cases in court; Mahony, 2011).

In recent years there have been several statistical reports released stating that the amount of criminal activity involving women and girls is on the rise (Mahony, 2011; Snyder, 2011). In 2011, Statistics Canada reported that there has been a small (5%) increase in cases heard in youth court involving females since 2004/2005. Similarly, over

the past three decades, the amount of women being charged with a criminal code offence has steadily increased (Mahony, 2011). For instance, in 1979 women accounted for 15% of those charged with a criminal code offence, whereas in 2009, women accounted for 21%. Similarly, research conducted in the United States has found that arrest rates for females increased at a rate much greater than males (Snyder, 2011). Specifically, in 1980 the male arrest rate was about 8 times higher than the female arrest rate, whereas in 2009, the male arrest rate was only 4 times higher than the female arrest rate (Snyder, 2011).

The gender gap among these crimes may be decreasing not because females are committing more of these crimes, but because males are committing less, creating the illusion that females are committing more criminal acts than ever before (Snyder, 2011). Additionally, although official arrest rates appear to show that in comparison to males, females (girls and women alike) are engaging in more crime, the increase may be partially due to legislation and policy changes (Gelsthorpe & Sharpe, 2006; Zahn et al., 2008). For instance, recent changes in laws and policies often target less serious offences—such as minor forms of aggression—and may actually end up impacting girls more so than boys, inflating female arrest rates as they tend to be more likely to be committing the less serious offences (Steffensmeier, Schwartz, Zhong, & Ackerman, 2005; Zahn et al., 2008). Researchers have also found that the rate at which the court finds youth guilty has increased, especially for girls (Gelsthorpe & Sharpe, 2006). Therefore, although it may appear statistically that females are committing more crimes than before, this may be due solely to changes in legislation and policy making, rather than females actually committing more offences (Zahn et al., 2008). Nonetheless girls and women are continuing to enter the justice system at an increased rate (Snyder, 2011),

and for this reason alone, forensic psychologists, criminologists, and policy makers alike, have become aware of the need for a better understanding of female offending behaviour and criminal recidivism.

While experiencing traumatic events (i.e., interpersonal trauma) has been found to increase the risk of offending for both boys and girls (Maschi, Bradley, & Morgan, 2008), according to feminist oriented scholars, trauma, especially childhood abuse, is considered a key causal factor to the understanding of female delinquency. This group of researchers, collectively known as feminist pathways researchers, posits that childhood abuse pushes girls out of their homes and onto the streets, placing them at an increased risk for further victimization, substance abuse, and criminal behaviour (Belknap, 2001; Chesney-Lind, 1997). Girls may also experience anxiety and depression as a result of the experienced trauma (Belknap, 2007). The feminist pathways researchers, however, tend to focus largely on the initiation of criminal behaviour, as they argue that traumatic childhood experiences, such as abuse, act as an entry point into the criminal justice system, whereas less is known about how childhood abuse influences criminal recidivism (Belknap, 2001; Belknap & Holsinger, 1998).

In contrast, mainstream correctional researchers—often referred to as gender-neutral researchers- posit that victimization only contributes to an individual's criminal behaviour through gender-neutral risk factors, such as antisocial associates (Andrews & Bonta, 2010). Because of this theoretical discrepancy, a more integrated understanding of female offending behaviour is needed, especially with respect to criminal recidivism. As a result, the objective of this study is to: (1) examine if childhood abuse increases the likelihood of criminal recidivism in a sample of justice-involved youth through four

potential mediators—substance abuse, deviant peers, internalizing behaviours, and running away from home- and, (2) determine if these relationships are moderated by gender. Ultimately, it is anticipated that this research will lead to improved intervention techniques for both genders.

The literature review is organized as follows: The term ‘trauma’ will be discussed and how it relates to child abuse and criminal behaviour. Next, child abuse will be discussed in relation to criminal behaviour, as well as gender-specific and gender-neutral variables, which include substance abuse, running away from home, internalizing behaviours, and deviant peers. The feminist pathways perspective (Belknap, 2007) will then be presented, which will include qualitative and quantitative evidence. This will be followed by a discussion of how child abuse fits within the feminist pathways perspective. Next, a prominent gender-neutral theory of criminal behavior, the personal, interpersonal, and community reinforcement (PIC-R) theory of criminal conduct will be discussed (Andrews & Bonta, 2010), along with how child abuse fits in with this perspective. Finally, the importance of combining gender-informed and gender-neutral theories will be discussed, followed by a detailed description of the current study.

Defining Trauma

Trauma has been conceptualized in two ways throughout the literature: 1) the event focused model (e.g., a car accident or natural disaster—focus on the event itself), and, 2) the event and reaction model. The Diagnostic and Statistical Manual (DSM-5; American Psychological Association [APA], 2013) uses a combination of both models when referring to trauma and focuses not only on the event itself, but also on the adverse reactions following the event (Briere & Scott, 2006; Ford & Scott, 2009). Specifically,

this is often referred to as posttraumatic stress disorder (PTSD), which is defined by the DSM-5 (APA, 2013), as "...the development of characteristic symptoms [such as re-occurring memories, dreams and/or flashbacks of the traumatic event, distress at exposure to cues resembling traumatic experience, and physiological reactions to those cues, avoidance of situations, objects, or people involved in traumatic event, negative alterations in mood or cognitions] following exposure to one or more traumatic event...indirect exposure through learning about an event is limited to experiences affecting close relatives or friends and experiences that are violent or accidental..." (p. 271-274). It is important to note that PTSD can be a result of an actual or a threatened traumatic experience.

One major issue within the literature on trauma is defining what "trauma" actually is. Because there is no commonly accepted definition of trauma, studies have used the term trauma to encapsulate a wide range of events and experiences from car accidents, death or illness of a loved one, exposure to terrorism or being a prisoner of war, witnessing or experiencing violence, getting bullied, being physically, sexually, or emotionally abused, neglected or having no emotional supports (Bernstein & Fink, 1994; Chesney-Lind, 1997; Cook, Smith, Tusher, & Raiford, 2005; Crimmins, Cleary, Brownstein, Spunt, & Warley, 2000; Huang, Zhang, Momartin, Cao, & Zhao, 2006), to any other situation or experience *which elicits distress*, is emotionally or physically painful, or interferes with a person's ability to cope (Giller, 1999). Most commonly, however, trauma is either explicitly or implicitly defined as the event of physical, emotional, or sexual abuse rather than the event and the ensuing sequelae (Ford, Stockton, Kaltman, & Green, 2008).

As such, the current study will focus on defining trauma as abuse and understanding the link between abuse and crime, as feminist pathways researchers argue it is much more relevant for females than for males (Belknap, 2001; Chesney-Lind, 1997). Further, most feminist-informed researchers examining the trauma/crime link have used the definition of child abuse—physical, sexual and emotional abuse—to refer to as trauma; therefore child abuse is the focus of this thesis.

Abuse, Crime, and Gender: Prevalence Rates

In the general population, it has been found that, aside from physical abuse, females experience higher rates of family related violence, like childhood emotional or sexual abuse, than males (i.e., rates of sexual abuse were four times higher for females than for males, but physical abuse was similar for males and females; Brennan, 2011; Sinha, 2012). Overall, at least 50 studies have examined prevalence rates of abuse in forensic samples (Wanamaker, McQuaid, & Brown, 2015). Collectively, these studies have estimated that anywhere from 3.6% to 98% of forensic samples have experienced some form of abuse, depending on the definition and type of abuse, and the sample being used (e.g., youth vs. adult, male vs. female; Kenny & Schreiner, 2009; McClellan, Farabee, & Crouch, 1997; Sacks, McKendrick, Hamilton, Cleland, Pearson, & Banks, 2008). Moreover, scholars have concluded that females in the forensic system (correctional or psychiatric) tend to experience higher amounts of abuse (sexual abuse in particular) than their male counterparts (i.e., between 22.9% and 98% of female justice-involved youth have experienced at least one type of childhood abuse [Johansson & Kempf-Leonard, 2009; Kenny & Schreiner, 2009; McClellan et al., 1997; Pasko & Mayeda, 2011; Sacks et al., 2008], whereas 1% to 33% of male justice-involved youth

have experience at least one form of childhood abuse [Drapalski, Youman, Stuewig, & Tangney, 2009; McClellan et al., 1997]). For instance, McClellan et al. (1997) reported that female prisoners indicate high amounts of exposure to sexual abuse (26% of girls, 30.8% of women in comparison to their male counterparts—4.5% for boys and 1.1% for men). Similarly, Baglivio, Epps, Swartz, Huq, Sheer, and Hardt (2014) found that among juvenile offenders, more females than males experienced emotional abuse in childhood (39% vs. 31%, respectively). However, studies comparing the prevalence of physical abuse among female and male forensic samples appear to show mixed results; some indicate males experience higher amounts of physical abuse than females (Komarovskaya, Loper, Warren, & Jackson, 2011), whereas others indicate that females experience higher amounts of physical abuse than males (Langan & Pelissier, 2001). This indicates that research examining gender differences in prevalence rates of abuse (especially physical abuse) requires further synthesis (Wanamaker et al., 2015).

Additionally, findings indicate that both male and female youth involved in the justice-system tend to be exposed to abuse early on in life and often experience multiple types of abuse (Dierkhising, Ko, Woods-Jaeger, Briggs, Lee, & Pynoos, 2013). Moreover, research has shown that girls are often victimized by someone they know and they experience the abuse longer and often more frequently, in comparison to boys (Chesney-Lind, 1997). Further research is needed on abuse and justice-involved samples.

Understanding the Link between Childhood Abuse and Crime

It has been well established in the literature that childhood abuse can have negative impacts on both males and females (Ford, Chapman, Connor, & Cruise, 2012). Some of the negative repercussions of experiencing child abuse include a variety of

internalizing problems, such as depression and anxiety, as well as externalizing problems, such as substance abuse and aggression (Ford et al., 2012). Recently, a growing body of research has emerged with regards to childhood abuse and later criminal behaviour (Belknap, 2001; Bender, 2010; Cuevas, Finkelhor, Turner, & Ormrod, 2007; Mersky & Reynolds, 2007; Smith & Thornberry, 1995; Widom, 1992). Generally, the social sciences literature has consistently found that males and females who have experienced abuse are at an increased risk for criminal behaviour (Dunnegan, 1997; Moloney, van den Bergh, & Moller, 2009). Moreover, some researchers have found that child abuse predicts criminal behavior more strongly for females than for males (Green & Campbell, 2006; Hubbard & Pratt, 2002). In particular, abuse has been found to have a strong predictive influence on women's re-offending behaviour (Bender, 2010; Green & Campbell, 2006; Hubbard & Pratt, 2002; Moloney et al., 2009). One important question emerges: If females are more likely to be abused, why are they not committing more crime? Some possible explanations (to be examined in the discussion) include gender differences in resiliency, and socialization practices—abuse may affect males and females differently (i.e., females internalize, whereas males show more externalizing behaviours) or perhaps there are more important risk factors for males (Van Voorhis, Wright, Salisbury, & Bauman, 2010).

Mediating Variables between Abuse and Criminal Recidivism

Researchers who do not self-identify as 'feminists' support the notion that childhood abuse is an important risk factor for offending behaviour and criminal recidivism, however, this research has also found that childhood abuse may contribute to crime through gender-neutral risk factors (Bender, 2010; Maschi, 2006; Widom &

Maxfield, 2001; Widom, Schuck, & White, 2006). Although abuse may be related to criminal offending for both females and males (Maschi, 2006), it is argued that how this abuse actually exerts its influence on criminal behaviour may vary as a function of gender (Bender, 2010; Cauffman, Feldman, Waterman, & Steiner, 1998). For example, Bender (2010) and Cauffman et al. (1998) both hypothesize that childhood abuse leads to criminal offending through various mediating variables that may differ as a function of gender (e.g., internalizing behaviours could be the primary mediator amongst females, and deviant peers amongst males).

Bender's (2010) narrative review about childhood maltreatment and criminal behaviour concluded that there are four primary hypothesized pathways—or mediators—linking any form of childhood maltreatment to crime among justice-involved youth. These mediators are: 1) running away from home, 2) mental health problems, 3) substance abuse, and 4) deviant peers. Bender further hypothesizes that a direct pathway from abuse to crime exists for boys. She hypothesizes that running away from home as a result of abuse leads to crime in both genders. Importantly, Bender makes significant gender distinctions. She hypothesizes that for the girls, the relationship between abuse and crime is mediated through internalizing disorders and substance abuse whereas in boys the relationship is mediated through deviant peers.

Bender (2010) argues that “empirical investigation is needed to expand our understanding of potential intervening factors” (p. 470), and that the hypothesized pathways from maltreatment—child abuse to crime should be tested. Research also needs to be conducted on an adequate number of male and female justice-involved youth. To date, there has been limited research examining the role of potential mediators that may

explain the link between childhood abuse and criminal recidivism. However, a discussion about what we do know about Bender's four hypothesized mediators follow. Further, the majority of studies that have examined how abuse eventually translates into criminal recidivism have been cross-sectional in design, rather than prospective.

Substance abuse. It is common for adolescents to experiment with drugs and alcohol (Beman, 1995; Hayaki, Hagerty, Herman, de Dios, Anderson, & Stein, 2010; Keyes & Block, 1984). Specifically, it is estimated that anywhere from 4.8 to 21.6% of Canadian youth between the ages of 15 and 24 have used drugs and at least 78% have consumed alcohol (Health Canada, 2011). However, drug and alcohol use have been found to be even more prevalent among those who have a history of criminal activity (Barnes, Welte, & Hoffman, 2002; Cottle, Lee, & Heilbrun, 2001; D'Amico, Edelen, Miles, & Morral, 2008; Svensson, 2003; Walden, McGue, Iacono, Burt, & Elkins, 2004), with over 50% of adult prison populations reporting using drugs daily in the six months leading up to their arrest (Stewart, 2008; Plugge, Douglas, & Fitzpatrick, 2006).

Research has also found that individuals, from both the general population and the justice-involved population, who have experienced child abuse, have been found to report more substance use than those who have not experienced abuse (Garnefski & Arends, 1998; Kilpatrick, Ruggiero, Acierno, Saunders, Resnick, & Best, 2003; Widom & White, 1997). For example, Ford, Hartman, Hawke, and Chapman (2008) used a sample of 264 youth admitted to pretrial juvenile detention centers (73% boys) to examine the relationship between several types of trauma exposure (including abuse) to substance abuse. Of the total sample, 10% reported physical abuse and 5% reported sexual abuse, with girls more likely to report sexual abuse than boys. It was found that

exposure to trauma (multiple types-including abuse) was associated with a 100%-200% increase in signs of drug abuse, and associated with a 50-75% increase in signs of alcohol abuse. This study looked at multiple types of trauma, not just abuse, and did not examine the relationship between abuse, substance abuse, and criminal recidivism.

Additionally, while justice-involved youth who experience abuse appear to use more substances than those who were not abused, this relationship appears to be stronger for females. Specifically, a government report conducted by Forsythe and Adams (2009), used a large sample (15,387 males and 2,893 females) of adult police detainees in Australia and found that child abuse was associated with a higher likelihood of illicit drug use more so for females (56%) than for males (36%). This study, however, used a cross sectional design with a sample of adults, rather than male and female justice involved youth. Nonetheless, this finding is consistent with other studies (McClellan et al., 1997; Widom, White, Czaja, & Marmorstein, 2007; Widom et al., 2006).

Predictive studies, such as Widom et al. (2007) and Widom et al. (2006), have found that child abuse, defined as physical and sexual abuse and neglect, significantly predicted drug use for both males and females, however, there has been some discrepancies. In particular, the study conducted by Elliott et al. (2014), used a national American sample of 1172 participants (797 males and 375 females) between the ages of 18 and 24, and found that sexual abuse predicted alcohol dependence, whereas physical and emotional abuse did not predict alcohol dependence. However, gender differences were not reported.

The longitudinal study by Widom and associates (2006) spanned 20 years and was comprised of 1,196 participants (50% female) from the general population. They

used a mediated model of regression to analyze how childhood victimization—physical and sexual abuse and neglect, may lead to aggressive behaviours in adolescence and adulthood through the use of substances. They found that childhood abuse is both directly and indirectly related to later violent arrests and delinquency for both genders. Directly, child abuse was found to be significantly associated with higher levels of violent arrests for both females and males. Indirectly, child abuse significantly predicted violent arrests through the problematic use of alcohol for females. Conversely for males, childhood abuse predicted aggression, which in turn predicted problematic alcohol use, which then predicted violent arrests. Also, the samples used in Widom's research were from nationally representative samples, rather than forensic samples. Child abuse in this study was based on official file information and may not have captured all unknown instances of abuse.

One influential study that looked at abuse and the relationship to criminal recidivism was Salisbury and Van Voorhis (2009). This study used a sample of 313 women probationers and, using path analysis, found that while abuse did not directly influence female recidivism, when mental health and substance abuse were added as mediators, an indirect path from abuse to recidivism emerged. However, the effect of substance abuse alone was not reported and there was no male comparison group.

Overall there have been no studies, aside from Widom's research (2006) and Salisbury and Van Voorhis (2009) that have examined the relationship between child abuse and substance abuse among justice involved youth and the moderating role of gender. Further no studies have specifically examined the mediating effect of substance

abuse on the relationship between childhood abuse and criminal recidivism in mixed gender samples of justice-involved youth.

Internalizing Behaviours. Internalizing behaviours (i.e., depression and anxiety) are prevalent among the general population (with rates of depression and anxiety ranging between 5.4 and 17% for adolescents; Garnefski & Arends, 1998; Kilpatrick et al., 2003). The justice-involved populations, however, have higher rates of internalizing mental health problems than the general population in terms of depressive symptoms (30.4% versus 4.1%) and signs of anxiety (30% versus 4%; Green, Miranda, Daroowalla, & Siddique, 2005; Odgers, Burnette, Chauhan, Moretti, & Reppucci, 2005). Specifically, studies have found that 19.1 to 42.5% of justice-involved youth show symptoms of depressive disorders (Drapalski et al., 2009; Green et al., 2005; Ulzen & Hamilton, 1998). Anxiety was also found to be highly prevalent among incarcerated youth, often affecting between 10 and 30% of the juvenile youth population (Drapalski et al., 2009; Ulzen & Hamilton, 1998). Notably, justice-involved female youth appear to report more signs of internalizing mental health problems, such as anxiety (30.8% vs. 21.3%) and depression (21.6% vs. 13%), than their male counterparts, respectively (Teplin, Abram, McClelland, Dulcan, & Mericle, 2002; Odgers et al., 2005).

Research finding the connection between abuse histories and mental health (specifically internalizing symptoms) are well established in both the general and forensic populations (Danielson, Macdonald, Amstadter, Hanson, de Arellano, Saunders, & Kilpatrick, 2010; Garnefski & Arends, 1998; Goodkind, Ng, & Sarri, 2006; Kilpatrick et al., 2003; Turner, Finkelhor, & Ormrod, 2006). Specifically, it has been reported that anywhere from 26.5 to 54% of youth who have experienced abuse of some form, show

signs of an internalizing mental health problem (Danielson et al., 2010; Garnefski & Arends, 1998; Whitehouse-Yarnell, 2006). However, among forensic samples, the relationship between child abuse and internalizing mental health disorders is even more pronounced. For example, one longitudinal study conducted by Forsythe and Adams (2009) used a sample of male and female Australia police detainees over the age of 18. Sixty-one percent of female police detainees who had signs of mental illness (i.e., whether they were ever a patient in a psychiatric hospital or if ever on prescription pills, such as benzodiazepines or antidepressants) had also experienced abuse as a child. Similarly, 52% of males who had signs of mental illness also experienced abuse.

Finkelhor, Ormrod, and Turner (2007) examined how victimization impacts subsequent mental health issues, such as anger, anxiety and depression. Using a nationally representative sample of youth ($N = 2030$) aged 10 to 17, this study found that youth who have experienced victimization are much more likely to have mental health problems. Specifically, sexual victimization was predictive of depressive symptoms ($\beta = .21, p < .01$) and anxiety ($\beta = .14, p < .01$). Physical abuse was also predictive of depressive symptoms ($\beta = .19, p < .01$) and anxiety ($\beta = .19, p < .01$). However, this study was conducted on a community sample and gender differences were not examined.

A recent predictive study conducted by Lynch, DeHart, Belknap, and Green (2013), using structural equation modelling on a random sample ($N = 491$) of incarcerated women, found that past childhood victimization had a direct effect on mental health (substance use disorder, PTSD, or serious mental illness; $\beta = .31, p < .01$). Mental health was also found to mediate the effect of childhood victimization on offending history (Sobel $Z = 2.51, p < .05$). This study is one of the few to explicitly examine whether mental health

factors mediate the relationships between victimization and offending, albeit was conducted with women offenders and did not use a male comparison group.

Running away from home. Although youth may run away from home for a variety of different reasons (e.g., lack of parental support, school disengagement), one of the most common studied reasons is childhood abuse (Hammer, Finklehor, & Sedlak, 2002). Specifically, abused youth were more likely to run away from home than non-abused youth (53% versus 30%, respectively; Widom, 1993). Research has consistently found that youth from both the general population and those who have been involved in the justice system are at an increased risk for running away if they have been abused (Thompson, 2010; Tyler & Whitbeck, 2004; Whitbeck, Hoyt, & Ackley, 1997; Whitbeck, Hoyt, Johnson, & Chen, 2007; Widom, 1993), irrespective of gender.

Among homeless youth who are not involved in the justice system, many have experienced at least one form of abuse prior to running away from home (Thompson, Bender, Windsor, Cook, & Williams, 2010; Thrane, Hoyt, Whitbeck, & Yoder, 2006; U.S Department of Health, 2002; Whitbeck et al., 1997). In particular, 43% have had a guardian beat them and between 17 and 19% have experienced sexual abuse prior to running away (Slavin, 2001; Thrane et al., 2006; Whitbeck et al., 1997). Abused youth also tend to leave home for longer periods of time than non-abused youth who run away (Kurtz, Jarvis, & Kurtz, 1991; Tyler, 2006). While research conducted by Thrane et al., (2006), in a study of 602 (40% male) runaway youth, found that girls were more likely to run away at an earlier age than their male counterpart. Overall, research indicates that youth, both male and female, who run away from home are at an increased risk for criminal behaviour (Baron, 2003; Baron & Hartnagel, 1998; Benoit-Bryan, 2011;

Chesney-Lind, 2001; Pergamit, 2010). Furthermore, Baron and Hartnagel (1998), using qualitative data from a sample of 200 homeless male street youth, found that youth who have run away and who have experienced abuse (prior to running away), were more likely to participate in criminal behaviour, such as drug dealing, shop lifting, robbery, and violent crimes than non-homeless youth. Similarly, a longitudinal study conducted by Tyler, Hagen, and Melander (2011) involving 7000 youth currently living at home with a guardian (55% female), found that female youth report the largest amount of family conflict, such as abuse, and that this conflict is both related to running away and deviant behaviour, such as car theft, property damage, shoplifting, and drug dealing. On the other hand, Hagan and McCarthy (1997) and Thrane et al., (2006) have found that males who have run away are at an increased risk for committing criminal offences (such as selling drugs and theft) in order to survive on the street.

It is important to note that aside from prevalence studies, qualitative studies recognize running away as both a consequence of abuse, as well as a risk factor for criminal behaviour (Belknap, 2001; Chesney-Lind, 2001). One literature review by Mallett (n.d.) also recognized that running away in childhood is an outcome of child abuse and a precursor for crime, and is therefore, thought to be a potential mediator in the relationship between child abuse and criminal behaviour. Through review of the literature, no studies have explicitly examined how running away from home may or may not mediate the relationship between child abuse and criminal recidivism and whether this relationship is moderated by gender.

Deviant peers. Research on both community and justice-involved samples of youth suggest that associating with deviant peers may be related to prior childhood abuse

(Chen, Tyler, Whitbeck, & Hoyt, 2004; Fergusson & Horwood, 1997; Maguire, Johnson, Vostanis, Keats, & Reminton, 2009; Salzinger, Feldman, Hammer, & Rosario, 1993; Salzinger, Rosario, & Feldman, 2007). Specifically, deviant peers has been found to be significantly correlated with past childhood abuse, with correlations ranging from .15 to .26 (Chen et al., 2004; Salzinger et al., 2007). Moreover, 20.5% of youth who have a high amount of deviant peer affiliations report experiencing child sexual abuse, and 31.8% report experiencing regular physical punishments (Fergusson & Horwood, 1999).

Deviant peers have also been recognized as a risk factor for subsequent criminal behaviour (Andrews & Bonta, 2010; McGloin & Stickle, 2011; Piquero, Gover, MacDonald, & Piquero, 2005). There are, however, some gender differences that should be noted. While the majority of research has focused on male samples, studies that do report on both genders find that the relationship between deviant peers and criminal behaviour is stronger for males than for females (Bender, 2010; Carroll, Green, Houghton, & Wood, 2003; Mears, Ploeger, & Warr, 1998).

There is a lack of research on the nature of the relationship between child abuse, deviant peers, and criminal recidivism. However, one study conducted by Salzinger et al., (2007) used a sample of 100 physically abused youth (35 girls and 65 boys) and a sample of 100 matched non-abused youth (ages 10 to 16), and examined whether peer relations moderated or mediated the association between childhood abuse and subsequent violent crime. Both verbal and physical abuse by parents, and positive attachment to friends were found to be significantly correlated to violent criminal behaviour ($r = .26, p < .001$; $r = -.20, p < .01$, respectively). Positive peer relationships were also found to moderate the

effect of abuse on later crime ($\beta = -.22, p < .05$). This study did not examine gender differences.

Maschi and associates (2008) used a nationally representative sample of 2,065 male youth to examine the mediation effect of deviant peers on the link between exposure to violence and criminal behaviour. They found that exposure to violence significantly predicted the presence of deviant peer exposure ($\beta = .41, p < .001$). There was also a significant relationship found between exposure to violence and property offending through the full mediation of deviant peers. However, the relationship between exposure to violence and violent offending was not found to be moderated by deviant peers. This study, however, used a sample consisting of community males only and examined exposure to violence rather than child abuse. More research is needed on justice-involved samples of youth. Furthermore, research is needed on how deviant peers mediate the relationship between child abuse and criminal recidivism and whether this relationship is moderated by gender.

The Feminist Pathways Perspective

Feminist scholars posit that traditional theories of crime are androcentric in nature and therefore insufficiently explain female crime (Belknap, 2001; 2007; Chesney-Lind, 1989; Chesney-Lind & Pasko, 2013; Covington & Bloom, 2006). Specifically, many feminist pathways researchers argue that gender-neutral theories of crime were developed by males, for males, and ignore the gender differences associated with offending behaviour (Chesney-Lind, 1989).

The feminist pathways perspective is made up of work by a number of scholars such as psychologists (Salisbury & Van Voorhis, 2009), criminologists (Covington &

Bloom, 2006) and sociologists (Ritchie, 1996). These researchers aim to better understand females' criminal involvement as well as the sequence of events that lead them to engage in criminal behaviour (Greiner, 2013), however there has been less focus on why females re-offend. Researchers from the feminist pathways perspective posit that females enter into crime through different pathways than males. Specifically, females enter into crime because of negative life events they may face, such as childhood maltreatment, mental health issues, poverty and economic marginalization, and dysfunctional relationships with both parents and intimate partners (Chesney-Lind, 1997; Finkelhor & Baron, 1986; Simkins & Katz, 2002). While these factors are not unique to girls and women, how these factors are experienced by females is posited to be unique (Artz, Hoffman-Wanderer & Moulton, 2012). For instance, it is believed that maltreatment experienced in childhood may lead to internalizing problems, such as anxiety or depression, or living on the streets in poverty, as well as dysfunctional relationships for females, whereas maltreatment may not affect males as much, or may lead them to engage in more externalizing behaviours. While each of these factors is thought to play a key role in whether or not a female commits criminal acts, little is known about how these factors relate to criminal recidivism among both males and females.

Feminist pathways research and interpersonal trauma. Within the feminist pathways literature, the term trauma is typically used interchangeably with child abuse. Importantly, child abuse is considered the fundamental causal factor to understanding female offending. Feminist pathway researchers agree that females tend to commit criminal acts as a means of survival (Belknap, 2001; Chesney-Lind, 1997; Simkins & Katz, 2002). For instance, girls who are victimized may run away from home or use

substances as a means of escape (Chesney-Lind, 1997). Girls may also become involved with selling drugs, prostitution, or robbery in order to survive on the street (Belknap, 2007; Chesney-Lind, 1997). Therefore, girls are often criminalized for their survival strategies, which can lead to increased anxiety, low self-esteem, emotional distress and depression (Belknap, 2007). These feelings of depression, anxiety, and emotional distress may act to disable healthy attitudes toward the self and others, again leading to more criminal behaviour and potential violence (Zaplin, 1998). This cycle is often referred to as the 'cycle of violence' as females who are exposed to violence (childhood victimization or witnessed violence) tend to become involved in later offending behaviour (Widom & Maxfield, 2001). While feminist trauma models tend to focus largely on the initiation of criminal behaviour, further research is necessary on how trauma, such as abuse, contributes to the maintenance of crime.

Support for the feminist pathways perspective. In recent years, there has been a growing body of research in support of the feminist pathways perspective and the hypothesis that males and females enter into crime through a different sequence of events. Little research, however, has focused on criminal recidivism and feminist informed pathways. Qualitative research (research stemming from descriptions of specific characteristics or scenarios, rather than focusing on quantifiable data that can be measured) is a key element to the feminist pathways perspective. It includes retrospective, in-depth, face-to-face interviews, which allows participants to tell their stories in their own voices (Belknap, 2007). This approach allows researchers to develop a better understanding of females' unique situations. Studies such as Daly (1992), Gilfus (1992), and Ritchie (1996), using both interviews and file reviews, have found numerous

commonalities among female offenders. Specifically, victimization, substance use, and economic marginalization have been found to be key themes in females who have committed crimes (Chesney-Lind & Pasko, 2013; Chesney-Lind & Sheldon, 1998; Daly, 1992; Dehart, 2008; Gilfus, 1992; Ritchie, 1996). Daly (1992; 1994), one of the only feminist pathways researchers to include both female ($n = 40$) and male ($n = 40$) adult offenders in her studies, concluded that childhood abuse played a less influential role in the explanation of male offending behaviour (37.5% of females versus 20% of males). In contrast, living on the streets played a substantial role in explaining both males and female offending behaviour, although stronger for males than females (25% of females and 40% of males). Interestingly, only 35% of males were found to follow a pathway into crime that was considered to be unique for men. Daly's work (1992; 1994) highlights the fact that there is some overlap in terms of factors that influence male and female offending behaviour, however, it also underscores that there are some important differences that need to be considered.

Aside from studies conducted by Chesney-Lind and her colleagues (such as Chesney-Lind & Sheldon, 1998 [$N = 10$]) and Gaarder and Belknap (2002; $N = 22$), the majority of the qualitative work in the feminist pathways perspective appears to be conducted on women offenders (e.g., Daly, 1992; Gilfus, 1992; Ritchie, 1996). The research by Chesney-Lind and Gaarder and Belknap (2002) appear to draw the same conclusions as research on adult female offenders, however, more research is needed on adolescent female offenders. Another limitation of this research is the lack of male comparison groups (e.g., Chesney-Lind & Sheldon, 1998; Gilfus, 1992). In order to fully understand gendered pathways to criminal behaviour, a male comparison group should be

included. Qualitative studies also tend to use small sample sizes. For example, Gaarder and Belknap (2002) interviewed 22 girls incarcerated in women's prison and Chesney-Lind and Sheldon (1998) interviewed ten girls in a treatment center for female juvenile offender. Consequently, these studies are not well suited to inferential statistics. While qualitative research is key to understanding female offending behaviour, supplementary quantitative research is also needed. Lastly, causal ordering is also an issue. For example, as reviewed above, there is little feminist-driven research examining whether or not child abuse actually precedes substance abuse, internalizing mental health issues, and deviant peers. In order to address these limitations, many quantitative studies driven by the feminist pathways perspective have begun to appear in the literature.

Although qualitative research remains key to understanding females' distinct etiological pathways into crime, quantitative studies have emerged throughout the literature and tend to complement the results found by qualitative researchers (Jones, Brown, Wanamaker, & Greiner, 2014). In particular, one influential study conducted by Salisbury and Van Voorhis (2009) examined the pathways to incarceration among 313 women probationers. This study illustrated that childhood victimization, substance use, mental health issues, dysfunctional relationships, and economic marginalization were all found to be highly prevalent among the incarcerated women (Salisbury & Van Voorhis, 2009). These results mirror the results found by qualitative studies (i.e., Daly, 1992). While Salisbury and Van Voorhis identified key factors pertaining to female offending, there was an absence of a male comparison group in the study, and therefore, gender differences cannot be concluded. This research is also based entirely on women offenders, rather than youthful female offenders.

A more recent study conducted by Jones et al. (2014), which used a large sample of both male ($n = 1,175$) and female ($n = 663$) justice involved youth, found that many young female offenders had experienced abuse (28.2%), had diagnosed mental health problems (8.4%), and were living in poverty (25.6%); traits that are typically viewed by pathways researchers as being female-specific factors (Belknap, 2001). However, it was also found that some girls had reported a variety of traditional, gender-neutral risk factors, such as antisocial peers (70.7%) and substance abuse (45.6%). Specifically, there was an approximate equal distribution which emerged (i.e., 47.8% of females fell into the gendered pathways to crime; whereas 51.7% fell into the more traditional, antisocial pathways to crime). Therefore, this study posits that at least a portion of the females follow a unique gendered pathway into crime, as opposed to a more traditional, mainstream, gender-neutral pathway into crime. The results also indicated that the sample of boys reported a combination of gender-informed and gender-neutral risk factors (i.e., runaway attempts, child abuse, and mental health). The results of this study indicate a need for theoretical integration between the feminist pathways perspective and traditional mainstream theories of criminal behaviour. Many items, however, were dichotomized and consequently did not capture the full breadth and spirit, and factors considered paramount to understanding female offending by feminist pathways researchers. Further, research is needed on how these variables relate sequentially.

The Personal, Interpersonal, and Community Reinforcement Theory

This research is guided in part by the Personal, Interpersonal, and Community Reinforcement Theory (PIC-R; Andrews & Bonta, 2010). The PIC-R is built largely upon cognitive and social learning principles (Andrews & Bonta, 2010). This multi-

disciplinary perspective also integrates biological, cultural, familial, interpersonal, personal, and situational variables to help explain deviant and criminal behaviour. This theory posits that individuals commit criminal acts when the rewards for doing so exceed the cost (Andrews, 1982). One major assumption of the PIC-R is that criminal behaviour is learned and maintained through operant and classical conditioning and observational learning. This theory is considered gender neutral in that it is hypothesized to work equally well for both genders.

According to PIC-R, the four main factors that have emerged as the most predictive factors of recidivism include antisocial peers, antisocial attitudes, criminal history, and antisocial personality, which make up the *Big Four* (Andrews & Bonta, 2010). These factors are followed by substance use, family factors, employment and school, and leisure and recreation, make up the *Central Eight* risk factors.

The PIC-R and abuse. While the feminist pathways researchers have conducted a wealth of studies on child abuse, the PIC-R also looks at this variable. However, rather than focusing explicitly on child abuse, PIC-R focuses on familial dysfunction, in the family/marital domain, which includes an array of variables, such as harsh discipline, poor supervision, and parental conflict, and of course, child abuse. Child abuse in of itself is not considered to be a key factor for criminal recidivism. Specifically, Andrews and Bonta (2010) argue that victimization, such as child abuse and traumatic experiences only contribute to an individual's criminal behaviour through gender-neutral risk factors, such as the *Big Four*—criminal history, criminal attitudes, antisocial associates, and antisocial personality. For instance, individuals who experience child abuse may become involved in crime not directly because of the abuse, but because of the specific characteristics they

may possess that follow the abuse, such as having antisocial associates or an antisocial personality.

Support for the PIC-R theory. While a large body of research has found support for the applicability of the *Central Eight* in predicting individual's risks for recidivism (Bonta, Law, & Hanson, 1998; Dowden & Andrews, 1999; Dowden & Brown, 2002), this section will focus solely on marital/family factors (specifically abuse), substance abuse, deviant peers, as well as mental health.

One meta-analysis conducted by Bonta et al., (1998) examined whether or not predictors of recidivism for offenders with mental health problems differed from those offenders who do not have mental health problems. Thirty-five effect sizes from predictors of general recidivism and 27 effect sizes from predictors of violent recidivism were calculated from a total of 64 samples. Overall, it was found that these predictors of recidivism (both general and violent) were similar for both offenders with mental health problems and offenders without mental health problems. The PIC-R therefore, appears to disregard internalizing mental health disorders, such as anxiety and depression, as it does not appear to predict recidivism.

A number of meta-analyses have been conducted examining the predictive risk factors for criminal behavior described in the male-based literature. Simourd and Andrews (1994) examined 34 effect sizes in order to identify correlates of juvenile delinquency for females in comparison to males. Both antisocial peers and poor parent-child relationships were found to be correlated with offending for both females ($r = .39$; $r = .20$, respectively) and males ($r = .40$; $r = .22$, respectively). Similarly, Hubbard and Pratt (2002) analyzed 97 effect sizes to examine predictors of recidivism for females.

Antisocial peers was found to be significantly related to female offending ($Z_r = .53$; based on 2 effect sizes), as were family relationships ($Z_r = .17$; based on 29 effect sizes), and sexual and/or physical abuse combined ($Z_r = .21$; based on 3 effect sizes). Notably, there were very few effect sizes contributing to the mean effect size for many of the predictors of recidivism.

Green and Campbell (2006) examined the predictive strength of both gender-neutral risk factors (e.g., antisocial peers) and hypothesized gender-specific variables (e.g., childhood maltreatment—defined as physical, sexual, and psychological abuse). Through the review of 1771 effect sizes from 83 studies, they found that males and females have similar risk predictors, including antisocial peers. Substance use was found to be the strongest predictor of recidivism for females ($r = .39$) and was also strong for males ($r = .34$). Family factors were found to be associated with female delinquency ($r = .17$) and male delinquency ($r = .14$). Antisocial peers were predictive of female recidivism ($r = .29$) and male recidivism ($r = .39$). Lastly, child maltreatment was found to have the smallest predictive magnitude for delinquency among males ($r = .07$), whereas females had a much larger effect size ($r = .23$). Overall, this meta-analysis indicates that while males and females may have some similar correlates of delinquency, there is evidence to suggest that there may also be gender-specific factors (child maltreatment) that may be more important for girls than for boys.

Finally, the most recent meta-analysis to examine whether the central eight risk/need factors are predictive of both female and male re-offending was Andrews et al. (2012). This meta-analysis used five intra-study datasets, all of which contained both genders to get a total of 2069 males and 354 females. Follow-up times ranged from 1

year up to 4.2 years. Overall, it was found that each of the eight domains (criminal history, deviant peers, antisocial attitudes, antisocial personality, education/employment, family/marital, leisure/recreation, and substance abuse) were predictive of criminal recidivism for both males and female offenders. Surprisingly, the predictive validity of each domain was greater for females (range: .20 to .46) than for the males (range: .17 to .32). However, the effect on gender was only statistically significant on the substance abuse domain (Mean of .46 for females and .17 for males; $t = 5.06$; $p < .001$), although the confidence intervals around the mean validity estimate for substance abuse with female offenders are very large (.25 to .66).

Area under the curve (AUC) was also computed for each domain. It was found that all eight domains were gender neutral, except for criminal history and substance abuse, which were found to be female salient (these domains are risk factors for both males and females, but appear to be more stronger (or more important) in females rather than males). However, while this study noted the importance of the central eight, other factors that may also be important to females were left out, such as internalizing mental health problems, victimization, and economic marginalization. Therefore, we are still unaware as to how these factors may influence criminal recidivism in both males and females.

One important study that has examined the predictive validity of both existing risk/needs and hypothesized ‘gender-responsive’ risk factors was Van Voorhis et al. (2010). Specifically, they argue that existing risk/needs assessment models ignore risk factors that are most relevant to female offenders, such as depression, self-esteem, child abuse, and victimization (Blanchette, 2004; Van Voorhis & Presser, 2001). Van Voorhis

et al. (2010) used three prison samples, three probation samples, and two prerelease samples of women offenders to examine gender-neutral and hypothesized gender-specific risks and their ability to predict recidivism. Overall, it was found that while existing risk/needs are predictive of women offenders (i.e., central eight), the addition of gender-responsive factors were found to create even more powerful prediction models. For instance, substance abuse, economic, educational, parental, and mental health needs appear to be associated with future offending, and child abuse, dysfunctional relationships, and mental health concerns appear to be important for prison adjustment. Overall, adding gender-responsive variables were found to be statistically significant contributions to the current gender-neutral assessments. While these results are important, much more research is needed on the predictive validity of hypothesized 'gender-specific' risk factors as well as how these variables influence future criminal recidivism. Finally, this study used samples of women offenders from Missouri and Cincinnati and therefore cannot be generalized to young females. Furthermore, there was a lack of male comparison group to examine if these factors influenced future male offending as well.

Overall, research suggests that the PIC-R is useful in assessing both male and female criminal recidivism (Blanchette & Brown, 2006; Hubbard & Matthews, 2008). There are, however, some limitations that should be discussed. First, the PIC-R does not explain how the risk factors operate or influence criminal recidivism (i.e., directly or indirectly; Ward, Melser, & Yates, 2007). Another limitation is that, although there is an abundance of research focusing on predictive risk factors of male recidivism, considerably less research has examined females (Greiner, 2013). Although more research is needed on females and predictive risk factors, the results, overall, are

suggesting that many risk factors associated with offending behaviour are, in fact, gender neutral. However, there are a few exceptions that are emerging, such as child maltreatment and internalizing mental health problems, such as anxiety or depression. In order to further advance the correctional field, integration of gender-neutral and gender-specific risk factors are needed. Specifically, the relationship between child abuse and a variety of variables (substance abuse, internalizing mental health disorders, deviant peers, and running away from home) are necessary to the understanding of how abuse and criminal recidivism are related for both male and female justice-involved youth.

Summary and Study Rationale

In sum, the feminist pathways perspective posits that typical gender-neutral theories of criminal behaviour are inadequate in explaining why females commit criminal acts (Belknap, 2001; Chesney-Lind, 1997). The feminist pathways perspective focuses on gender-specific risk factors that are more beneficial to the understanding of the initiation of female offending. Specifically, child abuse is considered to be a key risk factor for females' subsequent involvement in crime. Child abuse is believed to lead to a variety of adverse situations, such as running away from home as a means of escape, or substance abuse as a way to cope. Child abuse may also lead to internalizing mental health issues, such as anxiety or depression. These outcomes of child abuse may increase the criminalization of these females. Deviant peer influence, on the other hand, is not considered to be an important risk factor for later offending behaviour in females.

Through the use of mainly qualitative and some quantitative research, the pathways perspective has garnered much support for its ability to predict female offending. Although there has been plenty of support for this theory of female offending,

the majority of studies have used a cross-sectional design, and very few longitudinal or prospective studies have been conducted. This research also tends to use predominately female samples, often without a male comparison group. Limited research has been conducted on samples of youth and criminal recidivism, and how hypothesized female-specific risk factors may influence re-offending behaviour in both males and females.

The PIC-R theory of criminal behaviour, on the other hand, has identified a number of risk factors that are arguably gender-neutral, such as deviant peers (Andrews & Bonta, 2010). A large body of research has found support for the *Central Eight* risk factors and the ability of the PIC-R to predict criminal recidivism. Specifically, research has found that antisocial peers and substance abuse are important risk factors for predicting criminal behaviour and recidivism. While the PIC-R does not focus explicitly on child abuse, it does indicate that family dysfunction is an important predictor of crime. Moreover, victimization such as child abuse is argued to contribute to an individual's offending behaviour, only through gender-neutral risk factors, such as antisocial peers and substance abuse. Research suggests that the PIC-R may be useful in the assessment of both male and female criminal recidivism (Andrews et al., 2012; Blanchette & Brown, 2006; Hubbard & Matthews, 2008). There are limitations of this research, however. There is limited research looking at females and whether the central eight and female-specific risk-factors are indeed predictive of female offending, especially for female youth. Studies conducted on both males and females tend to use small samples of females in comparison to the males. Further research comparing gender on supposed gender-neutral and gender-specific risk factors is warranted.

It is believed that through a combination of gender-neutral and gender-specific theories of criminal behaviour, a greater understanding of why males and females commit criminal acts will occur, as well as foster a better understanding of factors that influence criminal recidivism. There have been very few studies that have combined these two perspectives in attempt to fully understand criminal behaviour. The current study will aim to close this gap between gender-neutral and gender-specific theories by examining the link between abuse and criminal recidivism through a variety of gender-neutral and gender-specific mediating/intervening variables. Specifically, through analyzing the current literature, as well as the aforementioned theories, the research questions and hypotheses for the current study are as follows:

Research Question #1: Do female justice-involved youth experience more physical, sexual and emotional child abuse than male justice-involved youth? It is expected that more females than males will have experienced sexual abuse and emotional abuse. However, it is expected that physical abuse will have been experienced at similar rates for both male and female justice-involved youth.

Research Question #2: Does gender moderate the direct relationship between child abuse and criminal recidivism? Although traditional gender-neutral theorists do not emphasize the unique contributions of child abuse to criminal recidivism but rather focus on the more all-encompassing construct of familial problems, research has indicated that child abuse may be both indirectly and directly related to recidivism (Bender, 2010; Widom et al., 2006) and that the relationship may be stronger for females (Daly, 1992; 1994). Thus, it is expected that gender will moderate the direct relationship between

abuse and criminal recidivism. Specifically, abuse will be directly related to criminal recidivism in both genders, but will be stronger for females.

Research Question #3: Does gender moderate the mediating effect of substance abuse in the relationship between child abuse and criminal recidivism? Studies conducted by traditional, gender-neutral theorists, as well as gender-specific theorists have both found that substance abuse is an important risk factor for subsequent crime (Andrews & Bonta, 2010; Belknap, 2001). As such, it is hypothesized that child abuse will be indirectly related to criminal recidivism through the mediation of substance abuse for both girls and boys. Furthermore, it is hypothesized that there will be a significant positive direct effect of childhood abuse on substance abuse.

Research Question #4: Does gender moderate the mediating effect of internalizing behaviours (i.e., anxiety and depression) in the relationship between child abuse and criminal recidivism? Although anxiety and depression are not considered to be important risk factors for criminal recidivism for gender-neutral theorists, it is hypothesized that child abuse will be indirectly related to criminal recidivism through the mediating effect of internalizing mental health disorders for girls and boys, however this relationship will be stronger for the girls. Furthermore, it is hypothesized that there will be a significant positive direct effect of childhood abuse on internalizing behaviours.

Research Question # 5: Does gender moderate the mediating effect of running away from home in the relationship between child abuse and criminal recidivism?

Both gender-neutral and gender-specific camps recognise the importance of street living/ running away from home on youth's criminal involvement. As such, it is hypothesized that gender will not moderate the mediating effect of running away from home on the

relationship between child abuse and criminal recidivism. Specifically, child abuse will be indirectly related to criminal recidivism through running away from home, for both boys and girls. Furthermore, it is hypothesized that there will be a significant positive direct effect of childhood abuse on running away from home.

Research Question #6: Does gender moderate the mediating effect of deviant peers in the relationship between child abuse and criminal recidivism? Having deviant peers is considered to be one of the most important risk factors for criminal recidivism by traditional, mainstream theorists (Andrews & Bonta, 2010). It is expected that child abuse will be indirectly related to criminal recidivism through deviant peers for both boys and girls; however it is expected that this relationship will be stronger for the boys. Furthermore, it is hypothesized that there will be a significant positive direct effect of childhood abuse on deviant peers.

Method

Participants

The sample was comprised of 332 justice-involved youth who originally participated in a larger study, entitled *Pathways to the Youth Criminal Justice System: Implications for Risk Assessment* (Brown, Skilling, Wanamaker, & Scott, 2014).

Although 342 youth were part of the original sample, 10 of these youth were excluded from the present study because they had not been released from custody when the recidivism information was extracted on July 11th, 2014. Of the 332 participants, 219 (66.0%) were male and 113 (34.0%) were female. The mean age of the entire sample was 17.28 ($SD = 1.24$), and there were no gender differences (males: $M = 17.36$, $SD = 1.23$; females: $M = 17.13$, $SD = 1.25$; $t = 1.58$, $p = .115$; see Table 1). Although the sample ranged in age from 12 to 21, the vast majority of youth were 16 or 17 years old with one youth who was age 12, two youth who were age 13, and one youth who was age 21 (see Table 1).

As Table 1 illustrates, 44% of the total sample was White (males = 35.2%, females = 61.1%). However, as the chi-square analysis indicates, race significantly differed as a function of gender. Specifically, almost two-thirds of the female sample was White, whereas only one-third of the male sample was White. Conversely, almost two-thirds of the male sample was non-White whereas only one-third of the female sample was non-White.

Table 1

Comparing Male and Female Samples on Race and Age

Variables	<u>Males</u>		<u>Females</u>		<u>Chi Square</u>	
	(N = 219)	%	(N = 113)	%	χ^2	p
Race ^a					21.317	<.001
White	77	35.2	69	61.1		
Black	78	35.6	20	17.7		
Other	52	23.7	20	17.7		
Age (years)					7.628	.695
12-14	7	3.2	5	4.4		
15-17	148	67.6	86	76.1		
18-21	64	29.2	22	19.5		

Note. ^aN = 12 (5.5%) are missing data on race for the males and 4 (3.5%) are missing data on race for the females.

All participants completed the study between August 20th, 2010 and February 1st, 2012. Participants were selected from the Ottawa Probation office, custody facilities in Ottawa or Brampton (open and closed), or the Child, Youth and Family Program within the Centre for Addiction and Mental Health (CAMH). The youth participating in the study from CAMH were in the justice system, but had been mandated by the court to receive an additional psychological assessment pending placement or sentencing decisions. Moreover, as Table 2 illustrates, 144 (43.4%) of the total sample were on remand, whereas 185 (55.7%) had been formally adjudicated at the time of the initial data collection. Notably, no gender differences were present for legal status. Finally, the majority of participants were from Roy McMurtry Youth Centre (total: $n = 130$ or

39.2%), including a third of the males ($n = 70$ or 32.0%) and over half of the females ($n = 60$ or 53.1%). A significant amount of males were also from CAMH ($n = 71$ or 32.4%), and a large amount of the females were from Ottawa Probation ($n = 39$ or 34.5%).

Table 2

Comparing Participants on Disposition and Legal Status by Gender

Variables	Males		Females		Chi Square	
	($N = 219$)	%	($N = 113$)	%	χ^2	p
Disposition					53.338	<.001
CAMH	71	32.4	4	3.5		
Closed	114	52.1	60	53.1		
Open	7	3.2	8	7.1		
Probation	26	11.9	39	34.5		
Legal Status					1.363	ns
Remand	90	41.1	54	47.8		
Adjudicated	127	58.0	58	51.3		

Note. ns = not significant

A breakdown of aggregate index offences and offence histories by gender at the time of the initial data collection are provided in Table 3. This data was coded from institutional files. As Table 3 indicates, the proportion of aggregate index offence(s) that were generally non-violent was similar for both males and females (property offences, administration of justice, and other non-violent offences), and surprisingly, major assault and threats were also similar in proportion for both males and females. However, males

appear to have committed more robbery, homicide, sexual offences, weapons offences, and drug offences, while females, on the other hand, appeared to have committed more minor assaults than males. Administration of justice and other non-violent offences, however, were similar between genders.

Table 3

Aggregate Offences and Offence History for Sample by Gender

	<u>Aggregate Offences</u>		<u>Offence History</u>	
	<u>M</u>	<u>F</u>	<u>M</u>	<u>F</u>
Offences	% (n)	% (n)	% (n)	% (n)
Homicide	2.7 (6)	.9 (1)	0 (0)	0 (0)
Robbery	36.1 (79)	18.6 (21)	12.8 (28)	1.8 (2)
Major Assault	28.8 (63)	27.4 (31)	9.6 (21)	5.6 (6)
Minor Assault	25.6 (56)	39.8 (45)	14.2 (31)	18.6 (21)
Sexual	15.5 (34)	.9 (1)	1.4 (3)	0 (0)
Kidnapping	5.5 (12)	0 (0)	.5 (1)	0 (0)
Threats	19.6 (43)	21.2 (24)	5.9 (13)	5.3 (6)
Weapon	27.4 (60)	11.0 (13)	9.6 (21)	1.8 (2)
Property	40.2 (88)	38.9 (44)	23.7 (50)	18.6 (21)
Drug	18.3 (40)	11.5 (13)	5.9 (13)	1.8 (2)
Admin. of Justice	62.1 (136)	67.3 (76)	26.9 (59)	22.1 (25)
Other (Violent) ^a	0.5 (1)	0 (0)	0 (0)	0 (0)
Other (Non-Violent) ^b	33.8 (74)	36.3 (41)	12.3 (27)	15.0 (17)

Note. ^aN = 1, for injuring / killing of four cats. ^bOther (Non-violent) includes: resisting arrest, causing a disturbance, mischief, conspiracy, obstruction of justice, frauds, and serious driving.

Measures

Demographic information. A demographic and offence coding manual was scored from official file information by the primary pathways researchers during the initial data collection (see procedures section). The following variables coded in this manual were used in the current study: age, sex, race, current offence, aggregate offence, criminal history, current disposition, and current location (see Appendix A).

Predictor variables.

Child abuse. Child abuse was operationalized using three yes/no items obtained from the mental health subscale of the Youth Assessment and Screening Instrument (YASI; Orbis partners, 2000). The YASI used in this study was a modified version of the semi-structured risk assessment originally developed by Orbis Partners (2000). It was modified to include female items that are included in the Youth Assessment and Screening Instrument for Girls (YASI-G; Orbis Partners, 2007a). The YASI used in this study was an 88 item interview-based measure used to assess a variety of risk, need, and protective factors from 10 different domains, including legal history, family, school, peer relationships, alcohol and drugs, mental health, aggression, attitudes, skills and employment and free time.

Although few studies have been conducted examining the psychometric properties of the YASI, it has been viewed as a reliable and valid measure, and has been used in a number of settings including New York State juvenile probation, Illinois juvenile probation, North Dakota juvenile probation, and Berrien County juvenile probation. According to Jones (2008), no measures of inter-reliability for the YASI are available; however, few studies have examined the validity of the YASI. One study by

Orbis Partners' 2007 (as cited in Jones, 2008) examined the internal consistency of the YASI and found that most YASI subscales had moderate to high levels of internal consistency, ranging from an alpha of .61 to .90.

Predictive validity was also examined by Orbis Partners (2007b) from New York State juvenile probation. It was found that the predictive validity of the YASI for juvenile delinquents is moderately high, with an AUC of .68. Across some scales, however, girls were found to have AUC's below .60, while boys generally remained constant across scales. The YASI was also found to have adequate predictability of recidivism, with most AUC's around .60. Overall, the YASI appears to be a reliable and valid risk assessment measure to use.

Initially, a composite child abuse measure was created comprised of five yes/no indicators of abuse (sexual, physical, and emotional abuse, neglect, and witnessed violence) with total scores ranging from 0—no abuse to 5—severe maltreatment. However, a series of internal consistency analyses revealed that ultimately, the most reliable child abuse measure was comprised of only three indicators: physical abuse, emotional abuse, and sexual abuse (overall alpha = .74; males = .69; females = .75). Consequently, this three item measure (0—no abuse, 1—one type of abuse reported, 2—two types of abuse reported, 3—all forms of abuse reported) was used in all subsequent analyses.

As seen in Table 4, inter-rater reliability for the current sample was computed for the abuse variable. Overall, the majority of the items were found to have good inter-rater reliability, with the exception of the sexual abuse item, which was found to have acceptable inter-rater reliability. Furthermore, the internal consistency for the current

sample was found to be good for the overall sample ($\alpha = .74$), as well as for the males ($\alpha = .66$) and females ($\alpha = .76$).

Running away. Running away was comprised of two specific items from the family subscale of the YASI (Orbis partners, 2000)—the number of times participants were kicked out of their home and the number of times participants ran away from home. The number of times kicked out and the number of times ran away were combined to create an overall running away from home variable. Overall, the scores ranged from 0 to 107 for the combined responses. However, after examining the range of scores, the majority of responses were under 11 ($n = 10$ who reported over 11 times); and due to extreme skewness in responses, the runaway/kicked out variable was truncated to include a range from 0 to 11+. As indicated in Table 4, the runaway and kicked out variable was found to have high inter-rater reliability for the current sample. Furthermore, internal consistency was found to be good for the overall sample ($\alpha = .73$), as well as for the females ($\alpha = .88$), but not for the males ($\alpha = .17$).

Table 4

Inter-rater Reliability of the Youth Assessment Screening Instrument (YASI) Abuse Variable and Running Away Variable

YASI	N	ICC-Single	ICC-Average
Abuse	19	.965	.982
Sexual	19	.683	.812
Physical	19	.889	.941
Emotional	19	.895	.945
Runaway/Kicked out	19	.805	.892

Note. YASI = Youth Assessment Screening Instrument, ICC = Intra-class correlation coefficient

Substance abuse. The substance abuse subscale from the Youth Level of Service and Case Management Inventory 2.0 (YLS/CMI; Hoge & Andrews, 2011) was used to operationalize substance abuse. Briefly, YLS/CMI 2.0 assesses the risks and needs in young offenders in order to formulate a case plan. This standardized instrument includes a structured interview and a 42 item checklist, divided into eight sections, including: substance abuse, peer relations, criminal history, attitudes and orientations, leisure and recreation, personality and behavior, family circumstances and parenting, and education and employment.

The predictive validity of the entire measure has been found to be good with Bechtel, Lowenkamp, and Latessa (2007) finding an AUC of .60 for the entire sample. For the community sample the AUC was .64 and for the sample in custody the AUC was

.56. Inter-rater reliability tends to range from .80 to .98 (Catchpole & Gretton, 2003; Vieira, Skilling, & Peterson-Badali, 2009; Viljoen, Elkovitch, Scalora, & Ullman, 2009). Convergent validity was also found to range from moderate to strong, with the YLS/CMI strongly correlating with other relevant assessment measures (i.e., .48 to .82 with the Psychopathy Checklist: Youth Version, Forth, Kosson, & Hare, 2003; Catchpole & Gretton, 2003, Rowe, 2002; Viljoen et al., 2009). Finally, predictive validity has been found to be acceptable, with correlations between the YLS/CMI and reoffending rates ranging from .16 to .41 (Flores, Travis, & Latessa, 2004; Rowe, 2002; Schmidt, Hoge, & Gomes, 2005; Vieira et al., 2009).

The substance abuse subscale consists of five items analyzing a youth's substance use behaviour. Sample items include "Substance abuse interferes with life" and "Substance use linked to offense(s)" and each item is scored as either 'PRESENT'—1 or 'ABSENT'—0. To attain the total score for the subscale, all PRESENT responses are summed. Scores range from 0-5, with scores of 0 indicating substance abuse is a low risk factor, scores of 1-2 indicating that substance abuse is a moderate risk factor, and scores of 3-5 indicating that substance abuse is a high risk factor.

Past research has found that the substance abuse subscale is a reliable and valid measure. Specifically, inter-rater reliability has also been good, with an averaged ICC of .77 (Schmidt et al., 2005). Predictive validity has also been examined with respect to how well the substance abuse subscale predicts reoffending. It was found that the correlations between the substance abuse subscale and re-offending ranged from .12 to .14 (Hoge & Andrews, 1996; Rowe, 2002). The internal consistency was found to range from .56 to .83 (Flores et al., 2004; Rowe, 2002; Schmidt et al., 2005; Welsh, Schmidt,

McKinnon, Chattha, & Meyers, 2008). Additionally, the current study has found good internal consistency for the overall sample ($\alpha = .75$), as well as for the males ($\alpha = .75$) and females ($\alpha = .74$).

Deviant peers. To assess deviant peers, the peer relations subscale of the YLS/CMI (Hoge & Andrews, 2011) was used. The peer relations subscale includes 4 items analyzing a youth's involvement with antisocial peers. Sample items include "Some delinquent friends" and "No/few positive acquaintances" and each item is scored as either 'PRESENT'—1 or 'ABSENT'—0. To attain the total score for the subscale, all PRESENT responses are summed. Scores range from 0-4, with scores of 0-1 indicating that peer relations is a low risk factor, scores of 2-3 indicating that peer relations is a moderate risk factor, and scores of 4 indicating that peer relations is a high risk factor.

Past research has found that the peer relations subscale is reliable and valid. Specifically, inter-rater reliability has been found to be good with an averaged ICC of .72 as reported by Schmidt, Hoge, and Robertson (2002). Furthermore, predictive validity has also been assessed and found that the peer relations subscale predicts reoffending, with correlations ranging from .14 to .35 (Hoge & Andrews, 1996; Rowe, 2002). The internal consistency was also found to range from .53 to .73 (Flores et al., 2004; Rowe, 2002; Schmidt et al., 2005; Welsh et al., 2008), with results from the current study indicating acceptable internal consistency for the overall sample ($\alpha = .66$), as well as for the males ($\alpha = .68$) and females ($\alpha = .62$).

Internalizing behaviours. The internalizing behaviours subscale from the Achenbach Youth Self Report Inventory (YSR; Achenbach, 1991) was used to operationalize evidence of internalizing mental health issues. The YSR in general (for

ages 11 to 18) is a standardized self-report measure comprised of two sections. The first section consists of a series of open and closed-ended questions about sports, hobbies, family, friends, jobs, physical health and school. The second section is made up of 112 items that examine the following domains: somatic complaints, anxiety and depression, social problems, thought problems, attention problems, delinquent rule-breaking behaviors, aggressive behaviors, and internalizing and externalizing behaviours.

The internalizing behaviours subscale is made up of the anxiety/depression subscale, somatic complaints subscale, and the withdrawn subscale of the YSR. In total, 30 items make up this subscale and sample items include 'I am too fearful or anxious', and I am unhappy, sad, or depressed'. Each item is rated on how true it is now or was within the past six months using a 3-point likert scale (0 = *not true*, 1 = *somewhat or sometimes true*, and 3 = *very true or often true*). The total score for the internalizing subscale is attained by adding up item scores.

Test-retest reliability has been found to range from .76 to .84, with the test-retest reliability of the internalizing subscale at .80 (Achenbach & Rescorla, 2007). Further, the internal consistency of the internalizing subscale is found to be .89 for youth over 11 years old (Ebesutani, Bernstein, Martinez, Chorpita, & Weisz, 2011). For the current study, the internalizing subscale was found to be highly reliable for the overall sample ($\alpha = .91$), as well as for the males ($\alpha = .88$) and females ($\alpha = .91$).

Criterion variable.

Criminal recidivism. Recidivism in the current study was operationalized in two ways—general and violent recidivism. General recidivism consisted of any new convicted violent or non-violent offence (including administration of justice offences)

that occurred after each participant's *at-risk-date*. Violent recidivism consisted of any new convicted violent offence including homicide, robbery, major and minor assault, sexual offences, threats, kidnapping, and any other offences that caused or threatened to cause bodily harm. For the participants who were incarcerated at the time of the original assessment, the at-risk-date was defined as the date of first release into the community. For participants on probation (or already in the community in open custody), the at-risk-date was defined as the date of the original interview.

Official recidivism data (i.e., date and type of reconviction) was provided by the Ministry of Children and Youth Services (for youth offences) as well as the Ministry of Community Safety and Correctional Services (for adult offences). Electronic records of conviction information on provincially held offenders in Ontario are kept by the Ministries. This information is recorded in the Offender Tracking Information System (OTIS), and includes both youthful convictions (12–17 years of age) and adult convictions (age 18 and over). In Canada, prisoners serve their sentence in a provincial or territorial facility if it is less than two years, whereas sentences over two years would be served in federal institutions.

For this study violent recidivism was compared to general recidivism rates, and was coded separately. General recidivism included the first re-offence or any new offence since the participants 'current offence' recorded during the initial study. Violent recidivism (for the purpose of this study the violent-broad definition of violent recidivism will be used), includes homicide, assaults, any crimes against the person, and any sexual offences. This definition of violent is used by the Ministry of Community Safety and Correctional Services and also complies with the definition of violent provided by the

Youth Criminal Justice Act—“...an offence in the commission of which a young person causes, attempts to cause or threatens to cause bodily harm...” (p. 83). Furthermore, for this study, records of recidivism were limited to both provincially sentenced offenders (both youth and adult) and those at a provincial remand center awaiting assignment to a federal institutional.

Time at risk. Time at risk to re-offend was also calculated for each participant, and included the number of days the participant was free to commit an offence of any kind. Time at risk was controlled for when conducting analyses. The average time at risk as of July 11, 2014 (date when data was extracted electronically) was 30.43 months ($SD = 4.96$; range: 11 to 43 months) or 938.5 days ($SD = 152.9$). Specifically for males, the average time at risk was 30.24 months ($SD = 5.31$; range: 11 to 43 months) and for females the average time at risk was 30.79 months ($SD = 4.21$; range: 22 to 42 months). There was no gender differences associated with the time at risk ($t(330) = -.949, p = .343$).

Procedures

Initial data collection. Approval to conduct the research was obtained from the requisite Research Ethics Board (REB) and court system. The researchers either recruited participants directly in person, or participants signed up for the study and staff notified the researcher on site who then conducted the initial consent interview. During the informed consent process, youth were informed about their right to withdraw, the limits of confidentiality, and the sensitive nature of certain questions. It is important to note that guardian consent was also required for youth under the age of 16.

Each youth completed a semi-structured interview and a battery of self-report questionnaires. The entire process took anywhere between two hours and five hours depending upon the youth. Furthermore, each youth typically required more than one session to complete the entire process. The researchers also assessed official file information to complete the risk assessments and the demographic and offence coding manual. Upon completion, youth were fully debriefed about the research and were compensated for their participation. Each component (i.e., interview, self-report questionnaires, and file review) of the study was worth \$10.00 (in gift cards or money), with participants receiving compensation ranging from \$10.00 to \$30.00.

Recidivism coding. As ethics clearance and court orders were obtained prior to this study, a list of all participants (i.e., name, date of birth, assessment date) was sent to the Ministry of Children and Youth Services and the Ministry of Community Safety and Correctional Services, in order to obtain provincial youth and adult criminal recidivism data. The data was provided in electronic form (Microsoft Excel), and was subsequently converted to SPSS for analysis.

Before coding recidivism data, a decision coding manual was created. New offences were coded as either violent (broad and/or narrow), non-violent, or administration of justice offences. The first new convicted offence for each recidivism type was coded. Even though there may have been more than one new sentencing occasion at which the participant was convicted for each recidivism type, only the first new offence was coded for the purpose of this study.

Analyses

For the first research question, descriptive statistics and corresponding t-tests were conducted in SPSS to determine whether or not gender differences were present. Specifically, the gender differences associated with child abuse (physical, emotional, and sexual abuse) were examined.

To answer research question two (see Figure 1), a moderation regression analysis was used. A moderated regression analysis is used when the strength of a relationship between two variables is hypothesized to be dependent upon a third variable—the moderator (see Figure 1; Preacher, Rucker, & Hayes, 2007). The first step involves standardizing the abuse variable scores by conversion into z scores. Next, the moderator effect must be created by multiplying the moderator by the predictor variable. Next, a hierarchical regression is conducted by entering the moderator and predictor variables, and any additional covariate variables (e.g., time at risk) into Block 1 as individual predictor variables. Next, the moderator effect (abuse*gender, for example) is entered into Block 2. If the moderation effect (Block 2) adds significant, incremental variance above and beyond the predictor, moderator, and covariate individually (Block 1), a follow-up, simple slope analysis is conducted to determine the nature of the (potential) moderation effect.

Figure 1. Moderation regression model for research question two

Lastly, to answer research questions three through six, four individual moderated-mediation regression analyses (see Figure 2 for one example) were conducted following the steps outlined by Preacher, Rucker, and Hayes (2007). A moderated-mediation regression analysis measures the strength of an indirect effect (ab effect), which is also known as a mediator, and is dependent upon the level of another variable, known as a moderator. Preacher and associates refer to this relationship as a conditional indirect effect. Non-parametric bootstrapping techniques were used to examine the effects and to estimate the regression coefficients in the two models. This method was chosen because it does not depend upon the normality of the distribution of the raw variables and can be used for smaller samples, without losing power. Essentially, bootstrapping estimates the sampling distribution of the moderated-mediation effect non-parametrically, and can then be used to generate confidence intervals for the conditional indirect effect. A conditional indirect effect is believed to occur if the ab effect is significant, and if the confidence

intervals surrounding the *ab* effect produced by bootstrapping do not contain zero. In order to conduct the bootstrapping procedures described, an SPSS macro designed by Preacher et al., (2007) was used. It is also important to note that time at risk was controlled for in the analyses (as some youth may have longer dispositions than others). Each of the moderated-mediation models that were tested are presented in Table 5.

Figure 2. Moderated-mediated regression model for research questions three to six.

¹Mediators include: substance abuse, internalizing mental health problems, running away from home, and deviant peers

Table 5

Moderated-mediation Models to be Tested

Models		
Predictor	Mediator	Criterion
Child abuse ¹	Substance Abuse	Criminal recidivism
Child abuse	Internalizing Behaviours	Criminal recidivism
Child abuse	Deviant Peers	Criminal recidivism
Child abuse	Running Away from Home	Criminal recidivism

Note. Child abuse refers to emotional, physical, and/or sexual abuse.

Results

Data Screening

Missing data. Missing value analysis revealed minimal missing data on the YLS/CMI- substance abuse and peer relation subscales (4.7% and 4.4%, respectively), and the YSR- internalizing behaviours subscale (11.6%). However, missing value analysis revealed a significant amount of data was missing on the YASI- abuse (28%) and the YASI- running away (27.1%) variables. No data was missing for the recidivism variables or on sex, however, minimal missing data was found for age (.06%) and race (4.8%). The Little MCAR test revealed that the pattern of missing data was missing at random ($\chi^2 = 14.349, p = .819$). Similarly, a series of follow up t-tests and chi square tests that examined whether or not the pattern of missingness (i.e., 0 = missing; 1 = not missing) was related to any of the predictor (i.e., abuse, internalizing behaviours, substance abuse, running away, and deviant peers), criterion (i.e., general recidivism, violent recidivism, time at risk), or demographic variables (i.e., age, race, disposition, and location) revealed no significant relationships with the exception of the YASI-running away variable and the YASI- abuse variable. After checking for randomness of the missing data, the running away variable had more missing data for males (males: 34.2%, $n = 75$; females: 13.3%, $n = 15$; $\chi^2 = 44.304, p < .001$) who were part of a racial group other than Black or White ($\chi^2 = 83.613, p < .001$). Further the majority of missing data on the running away variable was from CAMH ($n = 68, 75.5\%$), which is not surprising as CAMH did not administer the YASI to male participants.

Missing data on abuse variable. Because 28% of the data was missing on the predictor variable (abuse)—a variable used in every primary analysis, a comparison of the missing data ($N = 93$) to the non-missing data ($N = 293$) was conducted. As displayed in Table 6, those missing data on the abuse variable were significantly more likely to be male, to be located in the community, and to be part of a racial group other than Black or White. Although a chi square analysis could not be run for disposition (due to the small amount of cases in each cell), there appears to be a pattern where those missing data on the abuse variable were significantly more likely to be from CAMH. Specifically, of the 75 participants from CAMH, 68 were missing data on the abuse variable, similarly to running away. The majority of those from CAMH were missing data on the abuse variable because the YASI was not administered to male participants at that location. As a result, pairwise deletion was used throughout the analysis section. Although this did result in a considerable amount of data being lost for all the analyses involving the abuse variable, statistical power was not adversely impacted given that conditional indirect effects are calculated using non-parametric bootstrapping techniques (see analysis on page 49).

Table 6

A Comparison of Missing Data to Non-missing Data on the Abuse Variable

Variables	<u>Missing on Abuse</u>		<u>Chi Square^a</u>	
	(N = 93)	%	χ^2	p
Gender			16.302	<.001
Males	77	35.2		
Females	16	14.2		
Age			N/A	
12-14	4	36.4		
15-17	73	31.2		
18-21	14	16.5		
Location			69.357	<.001
Community	78	49.7		
Custody	15	8.6		
Race			23.583	<.001
White	34	23.3		
Black	21	21.4		
Other ^b	26	36.1		
Disposition			N/A	
Closed	14	8.1		
Open	0	0.0		
CAMH ^c	68	90.7		
Probation	9	13.8		

Note. ^aChi square analyses could not be computed for age, disposition, running away, and internalizing behaviours due to cells having less than 5 cases. ^bOther = Asian, Hispanic, Aboriginal, East Indian. ^cCAMH = Centre for Addiction and Mental Health.

Table 6 Continued

Variables	<u>Missing on Abuse</u>		<u>Chi Square</u>	
	(<i>N</i> = 93)	%	χ^2	<i>p</i>
General recidivism			.822	.365
No	35	25.4		
Yes	58	29.9		
Violent recidivism			.627	.428
No	52	26.4		
Yes	41	30.4		
Runaway			N/A	
No	4	4.1		
Yes	10	6.9		
Internalizing			N/A	
No	0	0.0		
Yes	79	29.8		
Substance abuse			4.118	.533
No	18	29.0		
Yes	63	24.8		
Deviant Peers			5.997	.199
No	9	45.0		
Yes	71	23.9		

Outliers and assumptions. In order to examine for any potential outliers, all variables were standardized. A standardized z -score greater than 3.29 or less than -3.29 indicates the presence of an outlier. No univariate outliers were identified on any of the measures when examining z scores, however, when examining box plots, two outliers were found on the YSR- internalizing behaviours subscale (z scores = 3.12). However, the data was within plausible range. As such, the data was not changed. To test for the presence of multivariate outliers among the data, Mahalanobis distance was examined. Mahalanobis distance values were obtained and compared to a critical value listed in the χ^2 distribution ($df = 5, p < .001$), which was 20.52 in this case. No multivariate outliers emerged.

To examine multicollinearity, a correlation matrix was examined. Correlations among independent variables that exceed .90 are considered problematic (Tabachnick & Fidell, 2007). In general, correlations among the independent variables were found to be between .02 and .45, and therefore multicollinearity was not an issue. One important assumption in a moderated regression is homogeneity of error variance. Importantly, the assumption was met (Levene's test = 5.869, $p < .05$). The YSR- internalizing subscale was slightly positively skewed (skew = 3.62; values above 3.29 or below -3.29 are considered problematic), as was the YASI- running away variable (skew = 4.31). Consequently, the YSR-internalizing subscale was corrected using a root transformation and the YASI-running away variable was corrected using a logarithmic transformation prior to all analyses. Kurtosis was found to be within normal range. Assumptions for normality, linearity and homoscedasticity were met for both the females and the males, as well as for total sample. Analyses were run using both the transformed and non-

transformed data, however, results were similar and thus for simplicity purposes, only the results of the analyses using the non-transformed data were reported.

Descriptive Statistics

Predictor variables. Descriptive statistics for each measure, including the mean, standard deviation, and range for both males and females are found in Table 7. T-tests and Cohen's *d* were also conducted to examine the differences in scores between males and females on each measure. Overall it was found that females scored significantly higher than males across all predictor variables—child abuse, running away, internalizing behaviours, and deviant peers. Specifically, there were large statistical difference between males and females on scores of the YSR-internalizing behaviours subscale (males: $M = 14.64$, $SD = 9.74$; females: $M = 23.10$, $SD = 12.52$), the YASI-abuse (males: $M = .79$, $SD = 1.01$; females: $M = 1.62$, $SD = 1.21$), subscale, and the YASI-running away subscale (males: $M = 1.91$, $SD = 3.00$; females: $M = 4.80$, $SD = 3.87$). There was a moderate statistical difference between males and females on scores of the YLS/CMI- substance abuse subscale (males: $M = 3.86$, $SD = 2.81$; females: $M = 4.99$, $SD = 2.35$). Finally there was a small statistical difference between males and females on the scores of the YLS/CMI-peer relations subscale (males: $M = 10.90$, $SD = 10.69$; females: $M = 14.10$, $SD = 9.28$).

Table 7

Descriptive Statistics of Predictor Variables by Gender

Measure	Females		Males		<i>t</i>	<i>d</i>
	Mean (<i>SD</i>)	Range	Mean (<i>SD</i>)	Range		
YSR-Int	23.10 (12.52)	0 to 53	14.64 (9.74)	0 to 42	-6.04***	.75
YASI-Abuse	1.62 (1.21)	0 to 3	.79 (1.01)	0 to 3	-5.45***	.74
YASI-Run	4.80 (3.87)	0 to 11	1.91 (3.00)	0 to 11	-6.16***	.83
YLS-Drug	4.99 (2.35)	0 to 8	3.86 (2.81)	0 to 8	-3.10**	.44
YLS-Peers	14.10 (9.28)	0 to 38	10.90 (10.69)	0 to 45	-2.46*	.32

Note. YSR-Int: Youth Self-Report-Internalizing Subscale. YASI-Abuse: Youth Assessment and Screening Instrument – Child Abuse Subtotal. YASI-Run: Youth Assessment and Screening Instrument – Running Away Subtotal. YLS-Drug: Youth Level of Service and Case Management Inventory - Substance abuse subscale. YLS-Peers: Youth Level of Service and Case Management Inventory: Peer relations subscale. *t* = independent samples t-test. *d* = higher values indicate that females scored higher. * $p < .05$ ** $p < .01$ *** $p < .001$

Criterion variable. As Table 8 illustrates, 58.4% of the sample ($n = 194$) recidivated (i.e., were convicted of a new offence including administration of justice offences, 61.1% male, 52.2% female). Upon further investigation, it was found that 48.8% ($n = 162$) committed an administration of justice offence and 40.7% ($n = 135$) committed a violent offence (see note in Table 8 for definitions). The amount of recidivism overall, as well as administration of justice recidivism and non-violent recidivism did not differ for males or females. However, it was found that more males than females recidivated violently (both broad and narrow).

Table 8

Recidivism Base Rates for Each Gender and Total Sample

	Females (<i>N</i> = 113)		Males (<i>N</i> = 219)		Total (<i>N</i> = 332)		
Recidivism type	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	χ^2
General (Any) ^a	59	(52.2)	135	(61.6)	194	(58.4)	2.730
Administration ^b	49	(43.4)	113	(51.6)	162	(48.8)	2.023
Non-Violent ^c	48	(42.5)	110	(50.2)	158	(47.6)	1.795
Violent (Broad) ^d	35	(31.0)	100	(45.7)	135	(40.7)	6.665**
Violent (Narrow) ^e	13	(11.5)	74	(33.8)	87	(26.2)	19.143***

Note. ^aGeneral (Any) = Any convicted violent or non-violent offence, including administration of justice offences. ^bAdministration = Any convicted administration of justice offence. ^cNon-Violent = any non-violent offence, including property offences, drug offences, non-violent other, and possession of weapons (excludes administration of justice offences). ^dViolent (Broad) = Homicide, Robbery, Major Assault, Minor Assault, Sexual offences, Threats, Kidnapping, and Other (Violent). ^eViolent (Narrow) = Homicide, Robbery, Major Assault, Sexual, Kidnapping, and other (violent) offences.
^{*}*p* < .05, ^{**}*p* < .01, ^{***}*p* < .001

Correlations among Measures

To examine the relationships among the various measures, Pearson correlation coefficients were used for both males and females independently (see Tables 9 & 10, respectively), as well as for the entire sample (see Table 11). For the total sample all measures were significantly and positively correlated with the exception of the correlation between the YSR-Internalizing subscale and the YLS/CMI-Substance abuse subscale (*r* = .096; *ns*), as well as the correlation between the YLS/CMI-Peer relations and YASI-abuse subscale (*r* = .093; *ns*). Measures that were highly correlated include the

YLS/CMI-Substance abuse subscale and the YLS/CMI- Peer relations subscale ($r = .425$; $p < .001$), as well as the YSR-Internalizing subscale and YASI -Abuse subscale ($r = .391$; $p < .001$).

For the male sample, all measures were positively and significantly correlated, with the highest correlation between the YLS/CMI- Peer relations subscale and the YLS/CMI- Substance abuse subscale ($r = .412$; $p < .001$). For the female sample, half of the measures were not significantly correlated. However, two highly significant and positive correlations include the relationship between the YLS/CMI-Substance abuse subscale and the YLS/CMI-Peer relations subscale ($r = .449$; $p < .001$), as well as the relationship between the YASI-Running away subscale and the YLS/CMI- Peer relations subscale ($r = .355$; $p < .001$).

Table 9

Correlation Matrix between Predictor Variables for Male Subsample

	YASI-Abuse	YASI-Run	YLS-Drug	YLS-Peers	YSR-Int
YASI-Abuse	1.00	.288***	.281***	.224**	.276**
YASI-Run		1.00	.305***	.336***	.279**
YLS-Drug			1.00	.412***	.186*
YLS-Peers				1.00	.132
YSR-Int					1.00

Note. YSR-Int: Youth Self-Report-Internalizing Subscale. YASI-Abuse: Youth Assessment and Screening Instrument – Child Abuse Subtotal. YASI-Run: Youth Assessment and Screening Instrument – Running Away Subtotal. YLS-Drug: Youth Level of Service and Case Management Inventory - Substance abuse subscale. YLS-Peers: Youth Level of Service and Case Management Inventory: Peer relations subscale. *N* ranges from 111-212 due to missing data.

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 10

Correlation Matrix between Predictor Variables for Female Subsample

	YASI-Abuse	YASI-Run	YLS-Drug	YLS-Peers	YSR-Int
YASI-Abuse	1.00	.219*	.124	.021	.318**
YASI-Run		1.00	.318**	.355***	.166
YLS-Drug			1.00	.449***	.053
YLS-Peers				1.00	.212
YSR-Int					1.00

Note. YSR-Int: Youth Self-Report-Internalizing Subscale. YASI-Abuse: Youth Assessment and Screening Instrument – Child Abuse Subtotal. YASI-Run: Youth Assessment and Screening Instrument – Running Away Subtotal. YLS-Drug: Youth Level of Service and Case Management Inventory - Substance abuse subscale. YLS-Peers: Youth Level of Service and Case Management Inventory: Peer relations subscale. *N* ranges from 77-104 due to missing data.

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 11

Correlation Matrix between Predictor Variables for Total Sample

	YASI-Abuse	YASI-Run	YLS-Drug	YLS-Peer	YSR-Int
YASI-Abuse	1.00	.349***	.169**	.093	.391***
YASI-Run		1.00	.244***	.293***	.327***
YLS-Drug			1.00	.425***	.096
YLS-Peers				1.00	.183***
YSR-Int					1.00

Note. YSR-Int: Youth Self-Report-Internalizing Subscale. YASI-Abuse: Youth Assessment and Screening Instrument – Child Abuse Subtotal. YASI-Run: Youth Assessment and Screening Instrument – Running Away Subtotal. YLS-Drug: Youth Level of Service and Case Management Inventory - Substance abuse subscale. YLS-Peers: Youth Level of Service and Case Management Inventory: Peer relations subscale. *N* ranges from 188-315 due to missing data.

* $p < .05$ ** $p < .01$ *** $p < .001$

Descriptive Overview of Recidivism Data

Table 12 provides a breakdown of the types of offences committed by the recidivist sample. Overall, there were no gender differences for the following types of recidivism: General, administration of justice, and non-violent recidivism. However, as expected, more males than females recidivated violently (both broad and narrow).

Table 12

Nature of Offences for those who Recidivated

	Females (<i>N</i> = 59)		Males (<i>N</i> = 135)		Total (<i>N</i> = 194)		
Recidivism type	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	χ^2
General ^a	54	(91.5)	132	(97.8)	186	(95.9)	5.560*
Admin ^b	49	(83.1)	113	(83.7)	162	(83.5)	.000
Non-violent ^c	48	(81.4)	110	(81.5)	158	(81.4)	.037
Violent (B) ^d	35	(59.3)	100	(74.1)	135	(69.6)	5.464*
Violent (N) ^e	13	(22.0)	74	(54.8)	87	(44.8)	19.105***

Note. ^aGeneral recidivism includes any violent or non-violent offence, except for administration of justice offences. ^bAdmin = administration of justice offences (i.e., failure to comply, breaches, etc.). ^cNon-violent = property and related offences, drug offences, theft, fraud, and morals offences. ^dViolent (B) = Homicide, Robbery (any), Major Assault, Minor Assault, Sexual offences, Threats, Kidnapping, and Other (Violent). ^eViolent (N) = Homicide, Robbery, Major Assault, Sexual, Kidnapping, and other (violent) offences.

* $p < .05$ ** $p < .01$ *** $p < .001$

Research Question #1: Do female justice-involved youth experience more physical, sexual and emotional abuse than male justice-involved youth?

The first research hypothesis states that more females than males will experience sexual and emotional abuse, whereas physical abuse will be experienced at similar rates between genders. As hypothesized, emotional and sexual abuse were reported by more females (emotional = 61.9%; sexual = 44.3%) than males (emotional = 31.7%; sexual = 12.7%). Contrary to the hypothesis, more females than males experienced physical abuse (63.9% versus 39.4%, respectively). Lastly, it is important to note that significantly more

females (72%) than males (46%) reported experiencing any one form of abuse (see Table 13).

Table 13

Comparing Males and Females on Youth Assessment and Screening Instrument- Abuse Variable

Abuse	Males		Females		χ^2	Cramer's V
	(N = 142)	%	(N = 97)	%		
Abuse (Any)	65	45.8	70	72.2	31.513***	.36***
Physical	56	39.4	61	63.9	11.161***	.21***
Sexual	18	12.7	43	44.3	29.526***	.35***
Emotional	45	31.7	60	61.9	20.331***	.29***

Note. * $p < .05$ ** $p < .01$ *** $p < .001$

Research Question #2: Does gender moderate the direct relationship between child abuse and criminal recidivism?

The second hypothesis states that gender will moderate the direct relationship between abuse and criminal recidivism. Specifically, abuse will be directly related to criminal recidivism in both genders, but will be stronger for females. In order to examine this relationship child abuse scores were mean centered. Next, the interaction was created by multiplying the mean centered child abuse scores by gender. Child abuse and gender were entered into Block 1, as well as Block 2. The moderation effect (child abuse * gender) was also entered into Block 2. It is important to note that gender was coded as

0—males and 1—females. While controlling for time at risk, the hierarchical regression revealed that Block 1 was significant ($R^2 = .103$, $F(2, 236) = 9.033$, $p < .001$). Block 2 was also significant ($R^2 = .104$, $F(3, 235) = 6.806$, $p < .001$). The moderation effect, however, did not explain any additional variance to Block 1 ($R^2_{change} = .001$, $F_{change}(235) = .216$, $p = .642$). Abuse as a main effect, however, was found to predict general criminal recidivism for both males and females, however, this relationship was unexpectedly negative ($B = -.088$, $SE = .041$, $t(235) = -2.149$, $p = .033$). Although males were more likely to recidivate, gender did not significantly predict general criminal recidivism ($B = -.095$, $SE = .069$, $t(235) = -1.378$, $p = .162$; see Table 14). Results were similar when conducting a moderation regression using violent recidivism (See Appendix B).

Table 14

Moderating Effect of Gender on the Relationship between Child Abuse and General Recidivism

Variables	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>
	<i>B</i>	<i>SE B</i>	<i>β</i>	
Block 1				
Abuse	-.075	.029	-.174	-2.614**
Gender	-.096	.066	-.095	-1.438 <i>ns</i>
Time at risk	.025	.006	.264	4.216***
Block 2				
Abuse	-.088	.041	-.206	-2.149*
Gender	-.097	.067	-.097	-1.460 <i>ns</i>
Time at risk	.025	.006	.276	4.235***
Abuse x Gender	.026	.057	.043	.465 <i>ns</i>

Note. $R^2 = .103$, $F(2, 236) = 9.033$, $p < .001$ for Model 1. $R^2 = .104$, $F(3, 235) = 6.806$, $p < .001$ for Model 2. *SE* = standard error. *ns* = non-significant. Gender: 0—males and 1—females.

* $p < .05$, ** $p < .01$ *** $p < .001$

Research Question #3: Does gender moderate the mediating effect of substance abuse in the relationship between child abuse and criminal recidivism? And is there a direct effect of childhood abuse on substance abuse?

It was hypothesized that child abuse would be indirectly related to criminal recidivism through the mediation of substance abuse for both males and females. This hypothesis was supported for the males, but not the females. Specifically, the conditional indirect effect of abuse on recidivism through substance abuse was found only for the males ($ab = .1910$, 95% $CI = .0659$ to $.3582$) but not for the females ($ab = .0781$, 95% CI

= -.0586 to .2224). As the confidence intervals (based on 10,000 bias-corrected bootstrapped samples) for the females contained zero, non-significance is implied.

Further, it was expected that there would be a significant positive direct effect of childhood abuse on substance abuse for both genders. As hypothesized, the direct effect of abuse on substance abuse was significantly and positively related ($B = .4067$, $SE = .1445$, $p < .01$) for both genders. Noteworthy, the direct effect of substance abuse on recidivism was significantly and positively related ($B = .4697$, $SE = .1044$, $p < .001$). However, the direct effect of abuse on recidivism was significantly and negatively related ($B = -.5730$, $SE = .1450$, $p < .001$; see Figure 3). Results examining violent recidivism found similar results (see Appendix B).

Figure 3. Statistical diagram of mediated effect of substance abuse on the relationship between abuse and recidivism moderated by gender.

Research Question #4: Does gender moderate the mediating effect of internalizing behaviours in the relationship between child abuse and criminal recidivism? And, is there a direct effect of childhood abuse on internalizing behaviours?

It was hypothesized that child abuse would be indirectly related to criminal recidivism through the mediating effect of internalizing mental health disorders for girls and boys, however it was also expected that this relationship would be stronger for the girls. Contrary to the hypothesis, results illustrated that gender did not moderate the relationship between child abuse and criminal recidivism, through the mediation of internalizing behaviours while controlling for time at risk. Specifically, the conditional indirect effect was non-significant for both the males (95% $CI = -.1029$ to $.0658$) and females (95% $CI = -.1364$ to $.0757$), as the confidence intervals (based on 10,000 bias-corrected bootstrapped samples) contained zero—non-significance is implied.

It was also hypothesized that there would be a significant positive direct effect of childhood abuse on internalizing behaviours. As hypothesized, there was a direct effect of abuse on internalizing behaviours ($B = 2.6603$, $SE = 2.39$, $p < .01$, 95% $CI = .6727$ to 4.6480). Further, there was a direct negative effect of child abuse on recidivism ($B = -.4032$, $SE = .1482$, $p < .05$, 95% $CI = -.6937$ to $-.1128$; see Figure 4). Results examining violent recidivism found similar results (see Appendix B).

Figure 4. Statistical diagram of mediated effect of internalizing behaviours on the relationship between abuse and recidivism moderated by gender.

Research Question #5: Does gender moderate the mediating effect of running away in the relationship between child abuse and criminal recidivism? And, is there a direct effect of child abuse on running away from home?

It was hypothesized that running away would mediate the relationship between child abuse and criminal recidivism, but that this relationship would not be moderated by gender. Consistent with the hypothesis, results illustrated that gender did not moderate the relationship between child abuse and criminal recidivism, through the mediation of running away while controlling for time at risk. Specifically, the conditional indirect effect was non-significant for both males (95% $CI = -.0703$ to $.1167$) and females (95% $CI = -.0692$ to $.1350$), as the confidence intervals (based on 10,000 bias-corrected bootstrapped samples) contained zero—non-significance is implied. Importantly, the

results also indicate that running away did not mediate the relationship between abuse and recidivism in either gender.

Furthermore, it was hypothesized that there would be a significant positive direct effect of childhood abuse on running away from home. Contrary to the hypothesis, there was no direct effect of running away on recidivism ($B = .0130$, $SE = .0455$, $p = .7745$, 95% $CI = -.0761$ to $.1022$). Again, there was a negative direct effect of abuse on recidivism ($B = -.4611$, $SE = .1469$, $p < .01$, 95% $CI = -.7490$ to $-.1731$; see Figure 5). Similarly to the previous research questions examining violent recidivism, the results were similar to general recidivism (see Appendix B).

Figure 5. Statistical diagram of mediated effect of running away on the relationship between abuse and recidivism moderated by gender.

Research Question #6: Does gender moderate the mediating effect of deviant peers in the relationship between child abuse and criminal recidivism? And, is there a direct effect of child abuse on deviant peers?

It was hypothesized that child abuse will be indirectly related to criminal recidivism through deviant peers for both boys and girls, however it was expected that this relationship would be stronger for the boys. In support of the hypothesis, results illustrated that gender did moderate the indirect effect of deviant peers on child abuse and recidivism, while controlling for time at risk. As hypothesized, the conditional indirect effect that emerged was significant for males ($ab = .1721$, 95% $CI = .0479$ to $.3472$) but not for females ($ab = .0021$, 95% $CI = -.1418$ to $.1544$). As the confidence intervals (based on 10,000 bias-corrected bootstrapped samples) for the females contained zero, non-significance is implied.

Furthermore, it was hypothesized that there would be a significant positive direct effect of childhood abuse on deviant peers. As hypothesized, the direct effect of abuse on deviant peers was significantly and positively related ($B = .2786$, $SE = .1108$, $p < .05$) and the direct effect of deviant peers on recidivism was significantly and positively related ($B = .6178$, $SE = .1359$, $p < .001$). Again, the direct effect of abuse on recidivism was significantly and negatively related ($B = -.5576$, $SE = .1449$, $p < .001$; see Figure 6). Results were similar when examining violent recidivism (see Appendix B).

Figure 6. Statistical diagram of mediated effect of deviant peers on the relationship between abuse and recidivism moderated by gender.

Supplementary Analysis

Given the unexpected negative relationship between abuse and recidivism, additional analyses were conducted with another ‘abuse’ proxy variable—witnessed family violence, taken from the YASI. Witnessed family violence was reported by 14.5% ($N = 48$) of the sample—29 females (25.7%); 19 males (8.7%). Witnessed family violence was found to be significantly and positively correlated to general recidivism for females (.259; $p < .01$) but not for males (.077; ns). However, witnessed family violence was not significantly correlated with violent recidivism for females (.146; ns) or males (.110; ns).

A moderated regression analysis examined the moderating effect of gender on the relationship between witnessed family violence and general recidivism. The hierarchical regression revealed that Block 1 was significant ($R^2 = .101$, $F(2, 252) = 9.448$, $p < .001$). Block 2 was also significant ($R^2 = .104$, $F(3, 251) = 7.238$, $p < .001$; see Table 15). The moderation effect, however, was not found to explain any additional variance to Block 1 ($R^2_{change} = .002$, $F_{change}(251) = .650$, $p = .421$). Witnessed family violence as a main effect was also not found to predict general criminal recidivism ($B = .140$, $SE = .116$, $t(251) = 1.211$, $p = .227$). However, gender as a main effect was found to negatively and significantly predict criminal recidivism ($B = -.174$, $SE = .061$, $t(251) = -2.842$, $p = .005$). This indicates that males are more likely to recidivate (gender is coded as 0—males, 1—females).

Table 15

Moderating Effect of Gender on the Relationship between Witnessed Family Violence and General Recidivism

Variables	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>
	<i>B</i>	<i>SE B</i>	<i>β</i>	
Block 1				
Witnessed	.210	.077	.167	2.738**
Gender	-.173	.061	-.173	-2.839**
Time at risk	.022	.005	.264	4.046***
Block 2				
Witnessed	.140	.116	.111	1.211 <i>ns</i>
Gender	-.174	.061	-.174	-2.842**
Time at risk	.022	.006	.238	3.957***
Witness x Gender	.125	.155	.074	.806 <i>ns</i>

Note. $R^2 = .101$, $F(2, 252) = 9.448$, $p < .001$ for Model 1. $R^2 = .104$, $F(3, 251) = 7.238$, $p < .001$ for Model 2. *SE* = standard error. *ns* = non-significant. Gender: 0—males and 1—females.

* $p < .05$, ** $p < .01$ *** $p < .001$

Moderated-mediation analyses were also ran using witnessed family violence as the predictor variable, however, results mirrored the results from research questions three to six. One exception was that gender was found to moderate the mediating effect of substance abuse on the relationship between witnessed family violence and recidivism. Specifically, substance abuse was found to mediate the relationship between witnessed family violence and general recidivism for females ($ab = .3062$, 95% *CI* = .0524 to .6605) but not for males ($ab = .2127$, 95% *CI* = -.0473 to .5350), as indicated by the 95% confidence interval. There was no main effect of witnessed family violence on drugs, however ($B = .5338$, $p = .186$, 95% *CI* = -.2592 to 1.3268), although there was a direct

effect of substance abuse on general recidivism ($B = .3984$, $p < .001$, 95% $CI = .2264$ to $.5704$).

Discussion

The purpose of the current study was to: (1) compare prevalence of childhood abuse—physical, emotional, and sexual in males and females, and (2) examine if childhood abuse increases the likelihood of criminal recidivism in a sample of justice-involved youth through four potential mediators—substance abuse, internalizing behaviours (i.e., anxiety, depression), running away, and deviant peers and see if this relationship varies as a function of gender.

Overall, six primary research questions were investigated. Results illustrated that more females than males reported experiencing child abuse—sexual, physical and emotional. Interestingly, substance abuse and deviant peers significantly and positively mediated the relationship between childhood abuse and criminal recidivism for males only—the effect was not present for females. Internalizing behaviours and running away from home, on the other hand were not found to mediate the relationship between child abuse and criminal recidivism for either gender—the effect was not present for males or for females.

Gender Differences and Child Abuse

The first research hypothesis stated that more females than males would experience sexual and emotional abuse, whereas physical abuse would be experienced at similar rates between genders. Results were partially supported, as it was found that females experienced significantly more sexual abuse (females = 44.3%, males = 12.7%, Cramer's $V = .35$) and emotional abuse (females = 61.9%, males = 31.7%, Cramer's $V = .29$) than males. However, contrary to the hypothesis, significantly more females than

males experienced physical abuse as well (females = 63.9%, males = 39.4%, Cramer's $V = .21$).

The current results were consistent with past research indicating that female forensic samples experience a higher amount of childhood abuse than their male counterparts (i.e., 22.9% to 98% of females justice-involved youth have experienced at least one type of childhood abuse [Johansson & Kempf-Leonard, 2009; Kenny & Schreiner, 2009; McClellan et al, 1997; Pasko & Mayeda, 2011; Sacks et al., 2008], as opposed to 1% to 33% of male justice involved youth [Drapalski et al., 2009; McClellan et al., 1997]). Furthermore, research suggests that exposure to sexual abuse is significantly higher in forensic female samples (26% of girls; 30.8% of women), than forensic male samples (4.5% for boys; 1.1% for men; McClellan et al., 1997), which also emerged through the current results. In terms of physical abuse, however, there has been mixed research with respect to the gender differences in prevalence rates of physical abuse among forensic samples (Komarovskaya et al., 2011; Langan & Pelissier, 2001; McClellan et al., 1997). Specifically, consistent with the current study some research has found that forensic female samples also experience more physical abuse than their male counterparts. Because of the mixed results in prevalence rates (i.e., high variability in prevalence rates between studies), more research is needed—in particular, a meta-analysis is needed to help synthesize and make sense of the extreme range of prevalence rates reported.

The second research hypothesis stated that it was expected that gender would moderate the direct relationship between abuse and criminal recidivism. Specifically, abuse would be directly related to criminal recidivism for both genders, but would be

stronger for females. Contrary to the hypothesis, gender was not found to moderate the relationship between abuse and recidivism. Furthermore, and unexpectedly, abuse was found to negatively predict recidivism across all analyses. Additionally, results looking at violent recidivism also found that gender did not moderate the relationship between abuse and violent criminal recidivism.

These results are not consistent with two previous meta-analyses examining the predictive relationship between childhood abuse and crime. For instance, one meta-analysis conducted by Hubbard and Pratt (2002) found that sexual and/or physical abuse (which were combined) was significantly related to female reoffending (.21). Green and Campbell (2006) also found child maltreatment (physical, sexual and psychological abuse) to be predictive of offending for females (.23; 95% *CI*: .10 to .37) more so than males (.07; 95% *CI*: .02 to .11). However, while the current results are contrary to hypotheses and past predictive studies, it is possible that past research may have overstated the predictive power of abuse and recidivism. Specifically, while Hubbard and Pratt found that physical/sexual abuse was predictive of recidivism for females, this overall effect size was only based on three studies. Similarly, Green and Campbell, although finding that child abuse was predictive of offending for both genders, indicated that child abuse was the weakest predictor of offending that they found (out of the nine predictors they examined).

The results from the current study may be due to several reasons. First, the missing data for the males may have confounded the results. Specifically, there was a large amount of missing data on the abuse variable and the majority of it was from the males rather than the females. Furthermore, the way abuse was operationalized may also

have impacted the results. For instance, through conducting a series of correlation analyses between recidivism and each type of abuse—physical, emotional, sexual, as well as witnessed violence—it was found that the abuse items making up the abuse measure—physical, sexual, and emotional abuse—were all negatively correlated to recidivism, indicating that the more abuse one experiences, the less likely they are to recidivate. Interestingly, however, witnessed violence was found to be positively correlated to recidivism. This illustrates how the definition of abuse that is used may alter the results in a study. Finally, the current results may also be due to random sampling error—specifically, as seen within the meta-analyses, as well as studies focusing on abuse in forensic populations, reports of abuse, overall has fluctuated significantly from sample to sample.

Another possible explanation is that while females reported experiencing more abuse—physical, sexual and emotional—this may not be enough to push females into committing criminal behaviour. For example, Hipwell and Loeber (2006), who examined effective intervention techniques for delinquent females, make reference to a theory which implies that there is a certain threshold that males and females need to reach before turning towards crime. This ‘threshold’ theory suggests that girls require significantly more negative life experiences than boys (across the same span of time) in order to ‘push’ them into committing criminal acts (Hipwell & Loeber, 2006). Therefore, perhaps child abuse along with internalizing behaviours, is not enough to reach a girl’s threshold. Similarly, perhaps for males, the abuse (as well as the additional factors-such as drug use or deviant peers) is enough to push males to their threshold. Feasibly there may be additional factors (i.e., mediators), as well as more complex pathways, explaining when

and how abuse leads to criminal behaviour for females. Furthermore, perhaps females have a higher resiliency towards negative outcomes than males (i.e., more supportive peers, strong commitment to school, high intelligence, and so forth; Huebner & Betts, 2007). The greater the amount of protective factors, the lower the risk of committing criminal acts (Herrenkohl, Tajima, Whitney, & Huang, 2005). Moreover, perhaps abuse is predictive of onset of criminal behaviour (i.e., entry into crime) as opposed to the maintenance of criminal behaviour (i.e., recidivism). More research is needed on the (potential) relationship between abuse and criminal recidivism.

Research from both the gender-neutral and gender-specific (feminist pathways research) suggest that abuse is related to criminal recidivism through additional variables (Andrews & Bonta, 2010; Widom et al., 2006). Andrews and Bonta argue that abuse alone is not a key risk factor, but that abuse contributes to an individual's criminal behaviour through gender neutral risk factors such as the *Big Four*. Bender (2010), who conducted a literature review on the relationship between abuse and criminal offending also noted that many problems youth face as a consequence of their child abuse puts them at an increased risk for subsequent criminal behavior. Further, because males and females differ in their responses to child abuse, there may be differences in how child abuse and criminal behavior are sequentially linked. To test this, the current study also examined a variety of moderated-mediation analyses with a subset of mediators—substance abuse, internalizing behaviours, deviant peers, and running away from home—two of which are part of the central eight risk factors (Andrews & Bonta, 2010).

Moderated-Mediation Analyses

The third research hypothesis stated that child abuse would be indirectly related to criminal recidivism through the mediation of substance abuse for both males and females. Contrary to the hypothesis, gender was found to moderate the mediating effect of substance abuse on the relationship between abuse and recidivism, but for males rather than females. Further it was expected that there would be a significant positive direct effect of childhood abuse on substance abuse. In line with the hypothesis, childhood abuse was found to be significantly and positively related to substance abuse. Substance abuse was also significantly and positively related to recidivism. Additionally, examining violent recidivism mirrored the results pertaining to general recidivism—relationship between abuse and violent criminal recidivism was mediated by substance abuse for the males but not for the females. While it is not surprising that this relationship is significant for males, it is surprising that this relationship is also not present (and stronger) for the females.

These results are partially supported with past research, such as Widom et al. (2006) and Widom et al. (2007). These studies have found that while the relationship between child abuse and criminal offending is influenced by substance abuse for males, it is also present for females. These samples, however, were from the community. Another study that found an indirect relationship between abuse and recidivism, through substance abuse for females was the study conducted by Salisbury and Van Voorhis (2009). This study did not use a male comparison group and used path analysis (complex statistical model), to incorporate multiple mediators.

Furthermore, meta-analyses conducted by Green and Campbell (2006) and Andrews et al. (2012) have found that substance abuse is highly predictive of female's criminal recidivism—even more so than for males. For instance, Green and Campbell have found that the strongest predictor of recidivism for females was substance abuse ($r = .39$), although it was also strong for males ($r = .34$). Andrews et al. (2012) also found that substance abuse was predictive of female recidivism—in fact, substance abuse was the only domain to predict recidivism for females more so than males (i.e., mean of .46 for females and .17 for males; $t = 5.06, p < .001$).

While the current results were inconsistent with limited past research (majority of which is on a community sample), one reason for this—which complements the ‘threshold’ theory—is that maybe there is more than one mediator needed to explain the relationship between abuse and criminal recidivism for females. Specifically, perhaps internalizing behaviours from childhood abuse leads to additional factors that in turn lead to recidivism (such as negative romantic relationships, negative attitudes). These “paths” to criminal behavior have been suggested by feminist pathways scholars (Belknap, 2001; Chesney-Lind, 1997). Specifically, as reported by Zaplin (1998), feelings of depression and anxiety can act to disable healthy attitudes towards the self and others—this may then lead to criminal recidivism (multiple mediator models).

Hypothesis four stated that child abuse would be indirectly related to criminal recidivism through the mediating effect of internalizing behaviours for girls and boys, however it was also expected that this relationship would be stronger for the girls. Contrary to the hypothesis, it was found that gender did not moderate the mediating effect of internalizing behaviours on the relationship between child abuse and recidivism.

Specifically the relationship between child abuse and recidivism was not found to be influenced by internalizing behaviours (i.e., anxiety, depression) for either males or females.

Furthermore, it was hypothesized that there would be a direct positive effect of child abuse on internalizing behaviours. As hypothesized, there was a direct positive relationship between abuse and internalizing behaviours—indicating that the more abuse one experiences, the more likely they are to have internalizing issues. Additionally, internalizing behaviours was not found to be directly related to criminal recidivism. Results were the same when using violent recidivism as the criterion variable.

The current results were consistent with past research (Finkelhor et al., 2007; Lynch et al., 2013). The study conducted by Finkelhor et al. (2007) found that sexual victimization and physical abuse were predictive of anger issues, depressive symptoms, and anxiety. Although this study was conducted on a community sample of youth and did not examine the gender differences associated with these relationships, it does lend support to the idea that child abuse predicts mental health issues. Moreover, a recent study by Lynch et al. (2013), using a sample of incarcerated women, found that childhood abuse is significantly related to criminal offending through the mediation of mental health. While this study did not examine gender differences (no male comparison group was used) it acknowledges that this relationship is present for females. Therefore, more research is needed.

Hypothesis five stated that child abuse would be indirectly related to criminal recidivism through running away from home, for both boys and girls. As hypothesized, gender did not moderate the effect of running away on the relationship between abuse

and recidivism, however, contrary to expectations, the mediating effect of running away was non-significant for both males and females. Furthermore, it was hypothesized that there would be a significant positive direct effect of childhood abuse on running away from home. As hypothesized, abuse was found to predict running away. Running away, however, was not found to predict criminal reoffending. Again, similar results were found for the analyses conducted on violent recidivism.

The current non-significant results are not consistent with past studies which have found that running away is significantly associated with criminal offending (Slavin, 2001; Thrane et al., 2006; Whitbeck et al., 1997), and that both males and females who run away from home are at an increased risk for criminal behavior (Baron, 2003; Baron & Hartnagel, 1998). Furthermore, predictive studies have found that family factors significantly predicted female ($r = .17$) and male offending ($r = .14$; Green & Campbell, 2006). However, there have also been mixed results with some studies indicating that running away and child abuse were related to criminal behaviour more so for females (Tyler et al., 2011), whereas other studies suggest that males who have run away are at an increased risk for criminal behaviour (Hagan & McCarthy, 1997; Thrane et al., 2006). Overall, more research is needed.

Some possible explanations for the current results include the fact that running away may not be a causal factor for recidivism, but instead chaotic home life is the term more encompassing of the negative situation youths' experience, which then predicts recidivism. Specifically, Andrews and Bonta (2010) examine home life in general, rather than focus exclusively on running away (as feminist pathways researchers often do—Chesney-Lind, 1997). Running away from home is often a response to the chaotic or

negative home life a youth experiences and therefore focusing on the larger picture (chaotic home life) in general may in more predictive if recidivism. For instance Green and Campbell (2006) conducted a meta-analysis looking at the predictive strength of risk factors and found that family factors was found to be associated with offending for both males and females (although slightly stronger for the females). Therefore, running away from home alone may not be enough, rather the whole family life situation may be more important to examine.

Additionally, there may be additional mediators responsible for examining the predictive relationship of abuse on criminal recidivism. Specifically, running away by itself may not be enough to explain the relationship between abuse and recidivism, there may be more going on. As discussed by feminist pathways researchers, abuse may lead to running away which may then lead to additional negative consequences—such as substance abuse, which in turn leads to criminal behaviour (Belknap, 2001; Chesney-Lind, 1997). Salisbury and Van Voorhis (2009), as well as Jones et al. (2014) are two influential feminist pathways studies to examine different complex pathways that lead from abuse to criminal offending, both of which have found important significant results indicating that there are multiple types of pathways that lead females who have been abused to commit crime. Hence, additional research is needed using more complex analyses that can handle multiple mediators and moderators with latent and manifest variables—such as structural equation modeling. Perhaps pathways into crime—especially from abuse, are considerably more complex for girls than what was used in the current study.

Finally, the hypothesis for question six stated that child abuse would be indirectly related to criminal recidivism through deviant peers for both boys and girls, however it was expected that this relationship would be stronger for the boys. In partial support of this hypothesis, the results illustrated that gender does moderate the indirect effect of deviant peers on child abuse and recidivism. Specifically, the relationship was significant for males but not for females. Furthermore, it was hypothesized that there would be a significant positive relationship between childhood abuse and deviant peers. Again, as hypothesized, there was a significant and positive direct effect of abuse on deviant peers. There was also a direct effect of deviant peers on recidivism. Once again, similar results were found for the analyses conducted on violent recidivism, indicating that there were no differences in mediating or moderating effects when examining general versus violent recidivism, in this case.

These results tie in with both the gender-neutral and gender-specific camps of research. The gender-neutral researchers, such as Andrews and Bonta (2010) suggest that having deviant peers is one of the top risk factors for criminal recidivism. Gender specific researchers (such as Belknap, 2001 or Chesney-Lind, 1997) suggest that girls tend to display internalizing behaviours, such as anxiety and depression, rather than externalizing behaviours—like deviant peers. While the majority of research has focused solely on male samples, studies that incorporated both genders in examining the relationship between deviant peers and criminal behaviour have found that this relationship is stronger for males than for females (Carroll et al., 2003; Mears et al., 1998). Furthermore, predictive studies have found that deviant peers were predictive of both female ($r = .29-.30$) and male recidivism ($r = .39-.40$), although this effect was stronger for males (Green

& Campbell, 2006; Simourd & Andrews, 1994). Overall, the current results mirror those found by past research.

Discussion on Supplementary Analyses

While the feminist pathways perspective researchers highlight the importance of childhood abuse (Belknap, 2001; Chesney-Lind, 1997; Simkins & Katz, 2002), they also note the importance of witnessed violence. As such, supplementary analyses included examining the six research questions mentioned above, except with the predicting variable of witnessed violence, rather than childhood abuse. It was found that females experienced witnessed violence more often than males. Witnessed family violence was found to be significantly and positively correlated to general recidivism for females but not for males, which is consistent with the feminist pathways perspective literature (Belknap, 2007; Chesney-Lind, 1997). However, results of a moderated regression revealed that gender did not moderate the relationship between witnessed family violence and recidivism.

With respect to the moderated-mediation models, the results were similar to the main results for running away and deviant peer relations—running away did not mediate the relationship between abuse and recidivism for males or females; deviant peers mediated the relationship between abuse and criminal behaviour for the males but not for the females, and internalizing behaviours did not mediate the relationship between child abuse and criminal recidivism for males or females.

One interesting finding, however, is the mediating relationship of substance abuse on the relationship between witnessed family violence and recidivism. This relationship was found to be present for the females but not for the males. This is opposite from what

was found when using the abuse variable as predictor—the effect was found to be present for males instead of females. Perhaps this indicates that females respond more negatively toward witnessed family violence than males. Further research is needed exploring specific types of abuse and neglect.

Overall, the results of the supplementary analysis section highlights the importance of how abuse is operationalized in research. For instance, in the current study when examining the mediating effect of substance abuse on the relationship between *childhood abuse* and recidivism, this relationship was only significant for the males. However, when examining the mediating effect of substance abuse on the relationship between *witnessed violence* and recidivism, the relationship was only significant for the females. Therefore, how a study defines abuse can ultimately implicate the findings. As such, research is needed on specific types of abuse and maltreatment, as findings from one form of abuse (i.e., how it relates to criminal behaviour) cannot be generalized across other forms of abuse.

Gender and Race

Over the past 30 years studies have emerged which finally began to examine the gender differences in criminal offending (Belknap, 2001; Chesney-Lind, 1997). Until recently, however, comparing race and gender in one study was not common. Female-centered research and practice has looked mainly at White females (Brown, Jones, Greiner, 2014). Furthermore, mainstream correctional researchers have typically ignored gender, race and social class, and how these factors intersect. This paradigm of research, which combines gender, race, class, and so forth, is known as intersectionality. The current study did not focus or control for race as the focus was to see if overall, does

being a female influence the relationship between abuse and reoffending behaviour. Further, the sample size was already relatively small (especially for the females) and therefore, breaking it down into racial categories by sex was not feasible. However, this is an area for future exploration. The current study was comprised of 70 White females, 20 Black females, and 19 females of another race (i.e., Asian, Aboriginal, East Indian, Hispanic), and 56 White males, 68 Black males, and 35 males of another race. Chi square analysis revealed a significant gender difference in race-specifically more females were White and more males were Black ($\chi^2 = 34.895, p < .001$). This difference may be due to the location of participants. Specifically perhaps Toronto and Brampton, Ontario (where the majority of males were recruited from—Roy McMurtry, CAMH) is more racially diverse than Ottawa, Ontario (where the majority of females were recruited from—Ottawa Probation). Overall, future research should consider controlling for race by matching samples of male and female participants based on race and gender, as well as by exploring any racial differences that may appear between the relationship of abuse and criminal recidivism.

Limitations

There are a number of limitations to the current study that must be discussed. The first limitation involves the use of an abuse measure which does not take into account the severity or length of the abuse. Explicitly, the current abuse measure simply looked at whether physical, sexual and emotional abuse occurred or not—3 items taken from the Youth Assessment Screening Inventory (Orbis Partners, 2000). Therefore the abuse variable may have been too simplistic and did not capture the complexity that characterizes female victims of abuse (e.g., length, severity). Moreover, the abuse

variable had a large amount of missing data. Because it was the predictor variable, all analyses were affected. The missing data was also found to be significantly different from non-missing data in terms of gender, disposition, and race. However, it appears as if the main pattern of missing data is that the majority were males from the Centre of Addiction and Mental Health (CAMH)—which is due to the fact that CAMH did not administer the YASI.

The internal consistency of the running away variable was also very low for the males ($\alpha = .17$), in comparison to the females ($\alpha = .88$). However, this variable was only based on two items and males responses to both being kicked out and/or running away from home varied drastically, especially in comparison to the females (i.e., males reported more *running away* from home than *kicked out* of home, whereas females reported equal amounts of both *running away* from home and *kicked out* of home. Additionally, one third of the males were excluded due to missing data on this variable.

Another limitation has to do with self-report information. Studies, such as Wallen (1992) and O'Hare and Taylor (1983), have found that retrospective accounts of sexual abuse may be underreported, especially for males. Furthermore, reports of child abuse overall may be unreliable (Ferguson, Horwood, & Woodward, 2000). One study by Ferguson et al. (2000) have found that many abused individuals provide false negatives and therefore, the prevalence of abuse may be underestimated. There is also the possibility of reporting biases by gender, especially on the abuse variable. For instance, perhaps males tend to report less abuse than females. Furthermore, Widom (1989) suggests that one methodological weakness in studies investigating the abuse/crime link

is the focus on self-report data, especially for the use of victimization data. Integration of self-report and file review information is needed.

Another limitation is that the recidivism data was only based on provincially recorded information from Ontario—thus Federal sentencing and incarceration information was not examined nor was recidivism information from other provincial jurisdictions examined.

One final limitation is the amount of females in the study in comparison to the amount of males. Females, overall are a lot harder to come by in the criminal justice system—as there are more males in custody than females—however, this makes it difficult to conduct gender comparison studies.

Implications and Directions for Future Research

Future research is needed to establish the relationship between childhood abuse and criminal recidivism. Specifically, the models from the current study require additional research and additional mediators need to be tested—including other variables from the central eight risk factors, such as leisure activity, school and employment, and antisocial personality. Further, additional gender-specific variables should be examined, including antisocial romantic partners and attachment. Research should also use a more elaborate and complex measure of childhood abuse—incorporating severity and amount of abuse. Furthermore, different types of trauma and abuse should be compared including, physical, sexual and emotional abuse, witnessed violence, and neglect. Additionally, this research would benefit from using a multi-wave longitudinal research design with a larger sample of male and female adolescent offenders. Finally, research

should examine whether results would differ depending on race and age (i.e., incorporate race and age as additional moderators).

While overall the feminist pathways researchers and gender-neutral researchers agree that child abuse can lead to criminal offending through additional mediating variables—substance abuse, internalizing behaviours, deviant peers, and running away from home. However, in terms of practice, gender-neutral research, such as the risk-need-responsivity model, suggest that in order to prevent future criminal behavior, the proximal antecedent of child abuse must be prioritize and treated (i.e., substance abuse, deviant peer relations, family problems, etc.). Feminist pathways researchers, on the other hand, suggest that it is important to treat the ultimate cause of the sequence of events (i.e., childhood abuse). More research is not only needed on the relationship between abuse and criminal offending, but also on treatment strategies and on the best means of preventing criminal behavior among males and females who experience child abuse.

Finally, in order to advance the understanding of gender and crime, research must examine additional factors simultaneously that may play a role in offending behavior—such as race (Baca Zinn & Thornton Dill, 1996; Burgess-Proctor, 2006; Daly & Tonry, 1997). This is referred to as intersectionality and should be used to advance the analyses of gender, race, class and crime in order to get the full picture of offending behaviour.

General Conclusions

Overall, the results of this study demonstrate that female adolescent offenders report experiencing more physical, sexual, and emotional abuse than their male counterparts. However, contrary to the hypotheses, not only did abuse not predict recidivism, but it did so negatively, particularly for the females. Additionally, while

internalizing behaviours and running away were both found to be positively and significantly correlated with child abuse for both the males (.318, $p < .01$ and .288, $p < .001$, respectively) and the females (.276, $p < .01$ and .219, $p < .01$, respectively), internalizing behaviours and running away did not explain the link between abuse and recidivism for both genders. Further, it was found that substance abuse and deviant peers were positively correlated with child abuse for both males (.281, $p < .001$ and .224, $p < .01$, respectively) and females—however the correlations were not significant for females (.021, *ns* and .124, *ns*), which reflected the results of the moderated-mediation analyses, suggesting that deviant peers and substance abuse helped explain the link between abuse and recidivism for the males but not for the females.

While counterintuitive and contrary to past results, it is important to emphasize that research has not consistently found a link between abuse and recidivism (Stewart, Dennison, & Waterson, 2002), especially with respect to forensic, criminal samples. Specifically, very few studies have examined the relationship between abuse and criminal recidivism and additional mediating factors. Those that have tend to use community samples (Widom et al., 2006) or do not use a male comparison group (Salisbury & Van Voorhis, 2009). Thus, more research is needed.

Overall, these results suggest that an integrated approach of combining gender-neutral and gender-specific theories of criminal behaviour must be adopted while trying to understand female criminal behaviour (Blanchette & Brown, 2006). While the RNR model (Andrews & Bonta, 2010) has garnered much support, the contributions of feminist pathways theories may complement this perspective and can help aid our

understanding of criminal behaviour for both girls and women (Blanchette & Brown, 2006; Hubbard & Matthews, 2008).

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Appendix A**Demographic and Offence Coding Manual**

1. Date completed by researcher: _____
(dd/mm/yyyy)
2. Name of researcher: _____
3. Sample:
 - a. Marjorie Amos House
 - b. Talitha House
 - c. Roy McMurtry Youth Centre
 - d. William E. Hay Youth Centre
 - e. Child, Youth and Family Program
 - f. Sherwood
 - g. E-Fry Reintegration Worker Program
 - h. E-Fry Diversion Program
 - i. Other: _____
4. Last known address (extract from file information)

5. Youth's date of birth (dd/mm/yyyy): _____
6. Current age: _____
7. Gender
 - a. male
 - b. female
8. Ethnicity:
 - a. Aboriginal
 - b. African American
 - c. Asian
 - d. Caucasian
 - e. East Indian
 - f. Hispanic
 - g. Other: _____
9. Current Disposition (i.e., only circle the one option that refers to the youth's current location):
 - a. Probation
 - b. Open custody
 - c. Custody and Supervision Order (currently in custody)

- d. Custody and Supervision Order (currently in the community)
- e. Deferred Custody and Supervision Order
- f. Remand
- g. Conditional Discharge
- h. Intensive Supervision and Support Order (ISSO)
- i. Court ordered assessment (court outcome pending)
- j. Other: _____

10. Current Offence:

- a. Date of offence(s) _____ (date offence occurred or allegedly occurred)
(dd/mm/yyyy)
- b. Date of arrest _____
(dd/mm/yyyy)
- c. Date of conviction _____ (enter -88 if youth is on remand or awaiting sentencing)
(dd/mm/yyyy)

11. Current Disposition Information (enter '-88' for not applicable) (what is the most recent/current reason the youth is currently in custody)

- a. Probation: 0—No 1—Yes
- b. Length of Probation _____ (months)
- c. Date probation started: _____ (dd/mm/yyyy)
- d. Date probation scheduled to end: _____ (dd/mm/yyyy)
- e. Custody and Supervision Order: 0—No 1—Yes
- f. Length of custody order _____ (months)
- g. Date custody order started: _____ (dd/mm/yyyy)
- h. Date custody order scheduled to end or ended: _____ (dd/mm/yyyy)
- i. Length of supervision order _____ (months)
- j. Date supervision order started or scheduled to start: _____ (dd/mm/yyyy)
- k. Date supervision order scheduled to end: _____ (dd/mm/yyyy)
- l. Is this an adult sentence? 0—No 1—Yes
- m. Intensive Supervision and Surveillance Order (ISSO): 0—No 1—Yes
- n. Length of Intensive Supervision and Surveillance Order (ISSO): _____ (months)
- o. Date ISSO started or scheduled to start: _____ (dd/mm/yyyy)
- p. Date ISSO scheduled to end: _____ (dd/mm/yyyy)
- q. Intensive rehabilitative custody and supervision order (IRCS)? 0—No 1—Yes
- r. Date IRCS started or scheduled to start: _____ (dd/mm/yyyy)
- s. Date IRCS scheduled to end: _____ (dd/mm/yyyy)
- t. Remand? 0—No 1—Yes
- u. How long has youth been on remand as of interview date _____ (in days)

- v. Date remand started: _____
 w. Date of next scheduled court appearance: _____ (dd/mm/yyyy)
 x. Additional comments: _____

- y. Conditional discharge? 0—No 1—Yes
 z. Date of conditional discharge _____ (dd/mm/yyyy)
 aa. Court ordered assess. date _____ (dd/mm/yyyy)
 bb. Other sentencing disposition? 0—No 1—Yes
 cc. specify _____
 dd. Length of 'other': _____ (months)
 ee. Date 'other' started or scheduled to start _____ (dd/mm/yyyy)
 ff. Date 'other' scheduled to end _____ (dd/mm/yyyy)

12. # of official offences linked to current disposition (indicate actual number next to each):

- a. _____ Theft
 b. _____ Break and Enters
 c. _____ Narcotics (using/possession)
 d. _____ Narcotics (selling/transporting)
 e. _____ Robbery-no weapon
 f. _____ Robbery-with weapon
 g. _____ Minor assault
 h. _____ Major assault (e.g., aggravated, with bodily harm, with a weapon)
 i. _____ Homicide
 j. _____ Serious driving
 k. _____ Weapons-possession
 l. _____ Weapons-use
 m. _____ Threats
 n. _____ Breaches
 o. _____ UAL
 p. _____ Escapes
 q. _____ Sexual offences
 r. _____ Prostitution
 s. _____ Frauds
 t. _____ Obstruct
 u. _____ Other: _____

13. Aggregate Disposition Information (EXCLUDE current disposition information included above in question 11) /*note—AGGREGATE means all dispositions that the youth is technically still under supervision for—for example—they might have been on probation for 18 months—then, at 6 months they were arrested for homicide and have been remanded to custody pending the trial—while the homicide would be coded above under 'current disposition' the outstanding probation would be coded here; if they had successfully completed another probation order PRIOR to the one coded here in the aggregate disposition the prior probation would be coded below*/

- a. Probation: 0—No 1—Yes
- b. Length of probation _____ (months)
- c. Date probation started: _____ (dd/mm/yyyy)
- d. Date probation scheduled to end: _____ (dd/mm/yyyy)
- e. Custody and Supervision Order: 0—No 1—Yes
- f. Length of custody order _____ (months)
- g. Date custody order started: _____ (dd/mm/yyyy)
- h. Date custody order scheduled to end or ended: _____ (dd/mm/yyyy)
- i. Length of supervision order: _____ (months)
- j. Date supervision order started or scheduled to start: _____ (dd/mm/yyyy)
- k. Date supervision order scheduled to end: _____ (dd/mm/yyyy)

Is this an adult sentence? 0—No 1—Yes

- l. Intensive Supervision and Surveillance Order (ISSO): 0—No 1—Yes
- m. Length of Intensive Supervision and Surveillance Order (ISSO): _____ (months)
- n. Date ISSO started or scheduled to start: _____ (dd/mm/yyyy)
- o. Date ISSO scheduled to end: _____ (dd/mm/yyyy)
- p. Intensive Rehabilitative Custody and Supervision Order (IRCS)? 0—No 1—Yes
- q. Date IRCS started or scheduled to start: _____ (dd/mm/yyyy)
- r. Date IRCS scheduled to end: _____ (dd/mm/yyyy)
- s. Remand? 0—No 1—Yes
- t. How long has youth been on remand as of interview date _____ (in days)
- u. Date remand started: _____
- v. Date of next scheduled court appearance: _____ (dd/mm/yyyy)
- w. Additional comments: _____
- x. Conditional discharge? 0—No 1—Yes
- y. Date of conditional discharge _____ (dd/mm/yyyy)
- z. Court ordered assess. date _____ (dd/mm/yyyy)
- aa. Other sentencing disposition? 0—No 1—Yes
- bb. specify _____
- cc. Length of 'other': _____ (months)
- dd. Date 'other' started or scheduled to start _____ (dd/mm/yyyy)
- ee. Date 'other' scheduled to end _____ (dd/mm/yyyy)

14. # of official offences linked to aggregate disposition (exclude current rated in #12):

- a. _____ Theft
- b. _____ Break and Enters
- c. _____ Narcotics (using/possession)

- d. _____ Narcotics (selling/transporting)
- e. _____ Robbery-no weapon
- f. _____ Robbery-with weapon
- g. _____ Minor assault
- h. _____ Major assault (e.g., aggravated, with bodily harm, with a weapon)
- i. _____ Homicide
- j. _____ Serious driving
- k. _____ Weapons-possession
- l. _____ Weapons-use
- m. _____ Threats
- n. _____ Breaches
- o. _____ UAL
- p. _____ Escapes
- q. _____ Sexual offences
- r. _____ Prostitution
- s. _____ Frauds
- t. _____ Obstruct
- u. _____ Other: _____

15. # of official convictions in criminal history (exclude current and aggregate information):

- a. _____ Theft
- b. _____ Break and Enters
- c. _____ Narcotics (using/possession)
- d. _____ Narcotics (selling/transporting)
- e. _____ Robbery-no weapon
- f. _____ Robbery-with weapon
- g. _____ Minor assault
- h. _____ Major assault (e.g., aggravated, with bodily harm, with a weapon)
- i. _____ Homicide
- j. _____ Serious driving
- k. _____ Weapons-possession
- l. _____ Weapons-use
- m. _____ Threats
- n. _____ Breaches
- o. _____ UAL
- p. _____ Escapes
- q. _____ Sexual offences
- r. _____ Prostitution
- s. _____ Frauds
- t. _____ Obstruct
- u. _____ Other: _____

Appendix B

Violent Recidivism Results—Research questions 2 to 6

Research Question #2: Does gender moderate the direct relationship between child abuse and violent criminal recidivism?

It was hypothesized that gender would moderate the direct relationship between abuse and violent criminal recidivism. Specifically, abuse would be directly related to criminal recidivism in both genders, but would be stronger for females. Contrary to the hypothesis, gender did not moderate the relationship between child abuse and violent recidivism (refer to Table A). The hierarchical regression revealed that Block 1 was significant ($R^2 = .046$, $F(2, 236) = 5.34$, $p < .01$). Block 2 was also significant ($R^2 = .046$, $F(3, 235) = 3.766$, $p < .05$). The moderation effect, however, was not found to explain any additional variance to Block 1 ($R^2_{change} = 0$, $F_{change}(235) = .075$, $p = .784$). Abuse as a main effect was also not found to predict violent recidivism ($B = -.020$, $SE = .041$, $t(235) = -.476$, $p = .635$).

Table A

Moderating Effect on the Relationship between Child Abuse and Violent Recidivism

Variables	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>
	<i>B</i>	<i>SE B</i>	β	
Block 1				
Abuse	-.012	.029	-.027	-.401
Gender	-.201	.068	-.202	-2.982**
Block 2				
Abuse	-.020	.041	-.046	-.476
Gender	-.202	.068	-.203	-2.982**
Abuse x Gender	.016	.058	.026	.274

Note. $R^2 = .046$, $F(2, 236) = 5.634$, $p = .004$ for Model 1. $R^2 = .046$, $F(3, 235) = 3.766$, $p = .011$ for Model 2. *SE* = standard error.

* $p < .05$, ** $p < .01$

Research Question #3: Does gender moderate the mediating effect of substance abuse in the relationship between child abuse and violent criminal recidivism? And is there a direct effect of childhood abuse on substance abuse?

It was hypothesized that child abuse would be indirectly related to violent criminal recidivism through the mediation of substance abuse for both males and females. Contrary to the hypothesis, it was found that there was a significant conditional indirect effect between abuse and violent recidivism through substance abuse for the males ($ab = .1051$; 95% $CI = .0305$ to $.2235$) but not for the females ($ab = .0410$; 95% $CI = -.0058$ to $.1605$), as indicated by the 95% confidence interval based on 10,000 bias-corrected bootstrapped samples. Further, it was expected that there would be a significant positive

direct effect of childhood abuse on substance abuse for both genders. As hypothesized, the direct effect of abuse on substance abuse was significantly and positively related ($B = .4067$, $SE = .1445$, $p < .01$) for both genders. Further, there was a main effect of substance abuse on violent recidivism ($B = .2480$, $p < .05$; $CI = .0753$ to $.4207$; see Figure A).

Figure A. Statistical diagram of mediated effect of substance abuse on the relationship between abuse and violent recidivism moderated by gender

Research Question #4: Does gender moderate the mediating effect of internalizing behaviours in the relationship between child abuse and violent criminal recidivism?

And, is there a direct effect of childhood abuse on internalizing behaviours?

It was hypothesized that child abuse would be indirectly related to violent criminal recidivism through the mediating effect of internalizing mental health disorders for girls and boys, however it was also expected that this relationship would be stronger for the girls. Contrary to the hypothesis, it was found that gender did not moderate the relationship between abuse and violent recidivism, through the mediation of internalizing behaviours. Specifically, the conditional indirect effect was non-significant for both the males (95% $CI = -.1894$ to $.0066$) and females (95% $CI = -.2402$ to $.0048$). It was also hypothesized that there would be a significant positive direct effect of childhood abuse on internalizing behaviours. As hypothesized, there was a direct effect of abuse on internalizing behaviours ($B = 2.6603$, $SE = 1.01$, $p < .01$, 95% $CI = .6727$ to 4.6480). Further, no direct effect of child abuse on violent recidivism emerged ($B = -.2259$, $SE = .1487$, $p = .129$, 95% $CI = -.5173$ to $.0655$; see Figure B).

Figure B. Statistical diagram of mediated effect of internalizing behaviours on the relationship between abuse and violent recidivism moderated by gender

Research Question #5: Does gender moderate the mediating effect of running away in the relationship between child abuse and violent criminal recidivism? And, is there a direct effect of child abuse on running away from home?

It was hypothesized that running away would mediate the relationship between child abuse and violent criminal recidivism, but that this relationship would be moderated by gender. Contrary to the hypothesis, gender did not moderate the mediated relationship between abuse and violent recidivism through running away. Specifically, the conditional indirect effect was non-significant for both males (95% $CI = -.0917$ to $.0842$) and females ($CI = -.0692$ to $.1350$). Furthermore, it was hypothesized that there would be a significant positive direct effect of childhood abuse on running away from home. Consistent with the hypothesis, there was a direct effect of child abuse on running away

($B = .8625$, $SE = .2955$, $p = .004$, 95% $CI = .2798$ to 1.4452). There was also no direct effect of running away on violent recidivism ($B = .0013$, $SE = .0452$, $p = .977$, 95% $CI = -.0873$ to $.0899$; see Figure C).

Figure C. Statistical diagram of mediated effect of running away on the relationship between abuse and violent recidivism moderated by gender

Research Question #6: Does gender moderate the mediating effect of deviant peers in the relationship between child abuse and violent criminal recidivism? And, is there a direct effect of child abuse on deviant peers?

It was hypothesized that child abuse will be indirectly related to violent criminal recidivism through deviant peers for both boys and girls, however it was expected that this relationship would be stronger for the boys. In support of the hypothesis, results illustrated that gender did moderate the indirect effect of deviant peers on child abuse and

violent recidivism, while controlling for time at risk. As hypothesized, the conditional indirect effect that emerged was significant for males ($ab = .1006$, 95% $CI = .0237$ to $.2324$) but not for the females ($ab = .0012$, 95% $CI = -.0891$ to $.0954$).

Furthermore, it was hypothesized that there would be a significant positive direct effect of childhood abuse on deviant peers. As hypothesized, the direct effect of abuse on deviant peers was significantly and positively related ($B = .2786$, $SE = .1108$, $p < .05$) and the direct effect of deviant peers on violent recidivism was significantly and positively related ($B = .3613$, $SE = .1280$, $p = .004$; see Figure D).

Figure D. Statistical diagram of mediated effect of deviant peers on the relationship between abuse and violent recidivism moderated by gender