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Identifying Gender Differences in an Australian Youth Offender Population

Stephane M. Shepherd¹, Stefan Luebbers¹,² and Mairead Dolan¹,²

Abstract
The study examined gender differences in risk factors for violence in a sample of 213 male and female youths held in Youth Justice Centres in Victoria, Australia. Although violence risk factors are considered to be commensurate across gender, a growing body of international literature is categorizing gender-specific criminal trajectories. The study aimed to investigate this concept in an Australian juvenile context. Through the use of a widely validated youth violence risk assessment inventory, the prevalence of salient risk items was compared across gender. Young female offenders were found to present with higher levels of family dysfunction, peer rejection and self-injurious behavior reflecting international female offending pathways literature.

Keywords
gender, risk assessment, juvenile, violence, recidivism

Introduction
Youth offending rates are at least double those in adulthood and those who offend as youths are more likely to experience problematic criminal life trajectories (Australian Institute of Criminology [AIC], 2009; Chen, Matruglio, Weatherburn, & Hua, 2005; Richards, 2011). Longitudinal studies suggest that environmental and individual factors contribute to the initiation and maintenance of delinquent behaviors (Aisenberg & Herrenkohl, 2008; Farrington, 1995; Farrington & Loeber, 2000; C.A. Smith & Thornberry, 1995; Valois, MacDonald, Brestous, Fischer, & Drane, 2002). Thus, identifying key risk factors that are important for predicting recidivism and developing risk management and treatment strategies in youths is critical.

A body of research indicates that core risk factors for violence are commensurate across gender (Hare, 1991; Hubbard & Pratt, 2002; Moffitt, Caspi, Rutter, & Silva, 2001; Webster, 1999). However, proponents of gender-specific risk/needs literature propose that pertinent unique experiences play an important role in the development of female criminal trajectories (Blanchette & Brown, 2006; Bloom, Owen, & Covington, 2002; Chesney-Lind, 1997; Daly, 1992, 1994; Funk, 1999; Van Voorhis, Salisbury, Wright, & Bauman, 2008; Van Voorhis, Wright, Salisbury, & Bauman, 2010). Feminist theories of female criminality comprise contexts of familial and domestic abuse, characterized by victimization and dysfunctional relationships (Blum, Ireland, & Blum, 2003; Gavazzi, Yarcheck, & Chesney-Lind, 2006; Hubbard & Pratt, 2002; McCabe, Lansing, Garland, & Hough, 2002; Van Voorhis et al., 2010). The ensuing traumas are connected to truancy, substance abuse, economically motivated delinquency, mental illness, self-injurious behavior, prostitution, and further victimization (Chesney-Lind, 1997; Gavazzi et al., 2006; Logan & Blackburn, 2009; Loxley & Adams, 2009; Teplin, Abram, & McClelland, 1996; Timmons-Mitchell et al., 1997; Vincent, Grisso, Terry, & Banks, 2008; Wasserman & McReynolds, 2011). Reports indicate the high rates of mental illness among female offenders compared with their nonoffending female counterparts and male offenders (Australian Institute of Health and Welfare [AIHW], 2012a; Butler & Allnutt, 2003; Cauffman, Lexcen, Goldweber, Shulman, & Grisso, 2007; Loxley & Adams, 2009; Vincent et al., 2008). Female offenders are also more likely to report abusive histories and attempt suicide compared with male offenders (Gavazzi et al., 2006; Johnson, 2004; Kenny & Nelson, 2008). Furthermore, illicit drug use among female offenders is also found to be consistently higher than male offenders and linked to poorer outcomes (Forsythe & Adams, 2009; Loxley & Adams, 2009; McReynolds, Schwabe, & Wasserman, 2010). Moreover, there is evidence that the base rate of psychopathy in females is much lower than in males (Cale & Lilienfeld, 2002; Nicholls, Ogloff, Brink, & Spidel, 2005; Weizmann-Henelius, Viemaro, & Eronen, 2004) and
there are gender differences across items (Bolt, Hare, Vitale, & Newman, 2004; Forouzan & Cooke, 2005; Strand & Belfrage, 2005). Feminist writers argue that current risk assessment instruments may overlook such pathways that could ultimately result in misclassifying female offenders (Brennan, 1998; Reisig, Holtfreter, & Morash, 2006; Taylor & Blanchette, 2009). The omission of crucial gender-specific factors for delinquency could also have repercussions for treatment strategies that require an understanding of the etiological issues that prompt female criminality.

There is a paucity of research exploring gender differences on adolescent risk inventories. Given that current official data indicate that young female contact with justice systems appear to be increasing in Australia (AIC, 2011; Holmes, 2010; Victoria Police, 2010), the United States (Puzzanchera & Adams, 2011; Puzzanchera, Adams, & Hockenberry, 2012), Canada (Kong & AuCoin, 2008), and the United Kingdom (Ministry of Justice [MOJ], 2009), there is a need to examine the utility of youth inventories across gender to ensure the relevant dynamics are identified for treatment targets and interventions.

The Structured Assessment of Violence Risk in Youth (SAVRY, see appendix), a violence risk assessment inventory has been shown to predict violent recidivism for young females across custodial settings (Gammelgård, Koivisto, Eronen, & Kaltiala-Heino, 2008; Lodewijks, de Ruiter, & Moretti, 2010; Schmidt, Lee, & Campbell, 2011). In this study, the risk item scores of the SAVRY, which cover Historical, Social/Contextual, and Individual/Clinical factors, will be equated and paralleled across gender.

We anticipate comparable SAVRY total scores between male and female offenders though predict potential differences on domain and individual item scores pertaining to familial and social relationships, mental health, self-harm, and substance abuse in accordance with the literature on gender-specific risk factors for violence.

Method

Participants

A total of 215 male and female youth were recruited from the Youth Justice Centres in Victoria, Australia: Parkville Youth Justice Precinct (PYJP) and Malmsbury Youth Justice Centre (MYJC). PYJP accommodates young men and women aged 10 to 17 years who have been remanded or sentenced by a Victorian court, and young women 18 to 20 years who have been sentenced by a Victorian Court. MYJC accommodates young men aged 18 to 20 years who have been sentenced by a Victorian Court. Two young people were excluded due to incomplete SAVRY data. The final total sample comprised 213 people (175 males, 38 females). This proportion of participants across gender is representative of Australian youth offender facilities where females consist on average 10% of prisoners (Richards & Lyneham, 2010). The mean age of the sample was 16.84 (SD = 1.83). Female offenders did not significantly differ on age (M = 16.39, SD = 1.93) compared with males (M = 16.94, SD = 1.80; U = 2,770.50, z = −1.636, p = .102). The index offenses of participants were Assault (36%), Robbery (17%), Burglary/Theft (17%), and Property Damage (7%). For males, the top three index offenses comprised Assault (37%), Robbery (16%), and Burglary/Theft (12%). For females, the top three were Burglary/Theft (38%), Assault (23%), and Robbery (23%). Approximately half the sample had previously been sentenced to custodial or community orders (48%) with male offenders having a similar number of total previous orders (M = 4.85, SD = 4.13) compared with female offenders (M = 3.30, SD = 2.75; U = 239.00, z = −1.038, p = .299). The ethnic breakdown of the sample included English-speaking background (48%), culturally and linguistically diverse (32%), and indigenous (20%). English-speaking background participants represented the Anglo-Saxon/Caucasian majority. Culturally and linguistically diverse participants included minorities from non-English-speaking backgrounds (e.g., Lebanese, Pacific Islander, and African). The indigenous ethnic group included participants with Australian Aboriginal and Torres Strait Islander heritage.

Measures

The SAVRY is a risk inventory that adopts a Structured Professional Judgment (SPJ) paradigm. It was designed to predict violent behavior in youths 12 to 18 years old (Borum, Bartel, & Forth, 2003) and comprises 24 risk markers divided into three subscales assessing Historical, Social/Contextual, and Individual domains (see appendix). The Historical domain includes static items focusing on prior behaviors and experiences. The Social/Contextual domain considers dynamic factors relating to peer relationships and community influences while the Individual domain assesses psychological patterns and behaviors (Borum et al., 2003). The subscales are summed to generate a total risk score. As there are no assigned cutoff scores, a professional arbitration called the “SAVRY risk rating” is proposed after considering all SAVRY factors. The instrument also contains six additional protective factors that have been shown to mitigate the risk of recidivism (Lodewijks, de Ruiter, & Moretti, 2010; Rennie & Dolan, 2010).

Interrater reliability was measured for 28 (13%; 17 females, 11 males) cases assessed independently by two trained raters. The intraclass correlations (ICCs; single measure) suggested very high concordance—SAVRY total score: ICC = .97 (a = .98), SAVRY risk rating: ICC = .97 (a = .99), Historical domain: ICC = .96 (a = .98), Social/Contextual domain: ICC = .90 (a = .95), Individual/Clinical domain: ICC = .94 (a = .97), and Protective Factors domain: ICC = .96 (a = .98)—supporting the reliability of the SAVRY in the present sample.
Procedures

The study was approved by the Victorian Department of Human Services and the Monash University Human Research Ethics Committee. Written informed consent was obtained from all participants. Consent for participants under 18 years of age fell within the “mature minor” concept as described in local Victorian legislation where mental competency is determined by the ability of an underage participant to understand or appreciate points pertaining to their partaking in and the nature of the study.

Participants were interviewed individually in a private room allocated by youth justice custodial centre staff. SAVRY coding was completed using information from interviews and youth justice file material and was conducted by master-level researchers who had completed a SAVRY training course.

Data Handling and Analysis

Data were analyzed using SPSS Version 18. Due to unequal sample sizes, group differences in mean scores on the SAVRY domains were examined using a Mann–Whitney U test. Chi-square analysis was used to examine group differences on individual SAVRY items. Item scores were dichotomized. A risk rating of “high” denoted higher risk and a rating of “medium/low” combined represented lower risk. Chapman, Desai, Falzer, and Borum (2006) had previously employed a dichotomy of “high/medium” and “low” risk. In this study, we employed a “high” separation as we believe it enabled a clearer identification of participants who strongly presented as high risk on a particular factor.

Results

Gender Differences in SAVRY Domain Scores and Overall Risk Rating

Table 1 shows the means, standard deviations, and U-test scores for male and female clients. Overall, approximately 50% of the sample was rated as high risk on the SAVRY risk rating. Both groups had high proportions of their respective totals in the high-risk rating category as shown in Figure 1. The female group had a marginally higher SAVRY total score than the males but this did not reach significance. Females had significantly higher mean scores compared with males on the Historical and Social/Contextual domains.

Gender Differences on SAVRY Individual Items

Table 2 shows the proportions across gender who received a high score on individual SAVRY items. Both genders had large proportions of high ratings on items “History of violence,” “History of nonviolent offending,” “Peer delinquency,” “Substance abuse difficulties,” and “Anger management problems.” Comparing genders, female youth were significantly more likely than male youth to score highly on items “History of self-harm/suicide attempts,”

![Figure 1. SAVRY risk rating. Note. SAVRY = Structured Assessment of Violence Risk in Youth.](image)
Table 2. Proportions of SAVRY Items Rated High Risk by Gender.

<table>
<thead>
<tr>
<th>SAVRY items</th>
<th>Male</th>
<th>Female</th>
<th>$\chi^2$</th>
<th>Significance</th>
<th>$\Phi$</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAVRY risk rating</td>
<td>48.0</td>
<td>60.5</td>
<td>1.960</td>
<td>.162</td>
<td>.</td>
</tr>
<tr>
<td>History of violence</td>
<td>76.6</td>
<td>71.1</td>
<td>0.515</td>
<td>.473</td>
<td>.</td>
</tr>
<tr>
<td>History of nonviolent offending</td>
<td>85.1</td>
<td>86.8</td>
<td>0.072</td>
<td>.788</td>
<td>.</td>
</tr>
<tr>
<td>Early initiation of violence</td>
<td>37.1</td>
<td>36.8</td>
<td>0.001</td>
<td>.972</td>
<td>.</td>
</tr>
<tr>
<td>Past supervision/intervention failures</td>
<td>43.4</td>
<td>44.7</td>
<td>0.022</td>
<td>.883</td>
<td>.</td>
</tr>
<tr>
<td>History of self-harm/suicide attempts</td>
<td>9.1</td>
<td>23.7</td>
<td>6.373</td>
<td>.012*</td>
<td>.17</td>
</tr>
<tr>
<td>Exposure to violence in the home</td>
<td>21.7</td>
<td>39.5</td>
<td>5.268</td>
<td>.022*</td>
<td>.16</td>
</tr>
<tr>
<td>Childhood history of maltreatment</td>
<td>29.7</td>
<td>42.1</td>
<td>2.206</td>
<td>.138</td>
<td>.</td>
</tr>
<tr>
<td>Parental/caregiver criminality</td>
<td>20.6</td>
<td>23.7</td>
<td>0.182</td>
<td>.670</td>
<td>.</td>
</tr>
<tr>
<td>Early caregiver disruption</td>
<td>34.3</td>
<td>65.8</td>
<td>12.921</td>
<td>.000***</td>
<td>.25</td>
</tr>
<tr>
<td>Poor school achievement</td>
<td>58.3</td>
<td>71.1</td>
<td>2.131</td>
<td>.144</td>
<td>.</td>
</tr>
<tr>
<td>Peer delinquency</td>
<td>69.7</td>
<td>65.8</td>
<td>0.225</td>
<td>.635</td>
<td>.</td>
</tr>
<tr>
<td>Peer rejection</td>
<td>18.9</td>
<td>42.1</td>
<td>9.527</td>
<td>.002***</td>
<td>.21</td>
</tr>
<tr>
<td>Stress and poor coping</td>
<td>44.0</td>
<td>55.3</td>
<td>1.594</td>
<td>.207</td>
<td>.</td>
</tr>
<tr>
<td>Poor parental management</td>
<td>49.7</td>
<td>71.1</td>
<td>5.715</td>
<td>.017*</td>
<td>.16</td>
</tr>
<tr>
<td>Lack of personal/social support</td>
<td>31.4</td>
<td>34.2</td>
<td>0.111</td>
<td>.739</td>
<td>.</td>
</tr>
<tr>
<td>Community disorganization</td>
<td>33.1</td>
<td>50.0</td>
<td>3.844</td>
<td>.050</td>
<td>.</td>
</tr>
<tr>
<td>Negative attitudes</td>
<td>40.0</td>
<td>34.2</td>
<td>0.440</td>
<td>.507</td>
<td>.</td>
</tr>
<tr>
<td>Risk taking/impulsivity</td>
<td>53.7</td>
<td>47.4</td>
<td>0.504</td>
<td>.478</td>
<td>.</td>
</tr>
<tr>
<td>Substance abuse difficulties</td>
<td>76.6</td>
<td>84.2</td>
<td>1.059</td>
<td>.303</td>
<td>.</td>
</tr>
<tr>
<td>Anger management problems</td>
<td>58.9</td>
<td>60.5</td>
<td>0.036</td>
<td>.850</td>
<td>.</td>
</tr>
<tr>
<td>Low empathy/remorse</td>
<td>21.7</td>
<td>18.4</td>
<td>0.203</td>
<td>.652</td>
<td>.</td>
</tr>
<tr>
<td>Attention deficit/hyperactivity difficulties</td>
<td>26.3</td>
<td>31.6</td>
<td>0.441</td>
<td>.506</td>
<td>.</td>
</tr>
<tr>
<td>Poor compliance</td>
<td>27.4</td>
<td>31.6</td>
<td>0.266</td>
<td>.606</td>
<td>.</td>
</tr>
<tr>
<td>Low interest/commitment to school</td>
<td>37.7</td>
<td>42.1</td>
<td>0.254</td>
<td>.614</td>
<td>.</td>
</tr>
<tr>
<td>Prosocial involvement</td>
<td>40.0</td>
<td>13.2</td>
<td>9.860</td>
<td>.002***</td>
<td>.22</td>
</tr>
<tr>
<td>Strong social support</td>
<td>24.0</td>
<td>18.4</td>
<td>0.549</td>
<td>.459</td>
<td>.</td>
</tr>
<tr>
<td>Strong attachments and bonds</td>
<td>37.1</td>
<td>28.9</td>
<td>0.914</td>
<td>.339</td>
<td>.</td>
</tr>
<tr>
<td>Positive attitude toward intervention and authority</td>
<td>29.1</td>
<td>31.6</td>
<td>0.089</td>
<td>.766</td>
<td>.</td>
</tr>
<tr>
<td>Strong commitment to school</td>
<td>18.3</td>
<td>15.8</td>
<td>0.133</td>
<td>.716</td>
<td>.</td>
</tr>
<tr>
<td>Resilient personality traits</td>
<td>33.1</td>
<td>34.2</td>
<td>0.016</td>
<td>.899</td>
<td>.</td>
</tr>
</tbody>
</table>

Note. SAVRY = Structured Assessment of Violence Risk in Youth.
*p < .05. **p < .01. ***p < .001.

“Exposure to violence in the home,” “Early caregiver disruption,” “Peer rejection,” and “Poor parental management.”

Looking at protective factors, both genders had low percentages of their cohorts reporting the presence of items “Strong social support” and “Strong commitment to school.” Male youth were significantly more likely than female youth to report “prosocial involvement.”

Discussion

This study examined gender differences in risk markers of violent offending using the SAVRY in a sample of Australian youth offenders in custody. Male and female youths had similar SAVRY total scores and high portions of their respective samples receiving a high-risk rating. However, there are a number of significant differences across gender at the domain and item levels.

The mean overall SAVRY score ($M = 26.66$) of this sample was higher than previous North American and European studies, which have ranged between 18 and 24 (Dolan & Rennie, 2008; Lodewijks et al., 2008; Schmidt et al., 2011; Spice, Viljoen, Gretton, & Roesch, 2010; Vincent, Chapman, & Cook, 2011; Welsh, Schmidt, McKinnon, Chattha, & Meyers, 2008). It is possible that the comparatively high-risk scores in our sample reflect jurisdictional differences in youth diversionary policies, as only the most severe cases receive a custodial sentence in Victoria, Australia (Sentencing Advisory Council [SAC], 2012). Similarly, female criminal misconduct in Australia and particularly Victoria is more likely to result in community-based penalties compared with males (AIHW, 2012b; SAC, 2012). Therefore, the females in our custodial sample may represent more high-risk female offenders than would be found in other jurisdictions and may mask gender differences in our sample. This may account for
the higher female SAVRY total scores ($M = 28.82$) found in the present study compared with total scores for institutionalized female youth found by Gammelgård et al. (2008) and Lodewijks et al. (2008) at 18 and 19, respectively.

Our study found no significant difference between female and male youth on SAVRY total scores or summary risk ratings. The findings were similar to other SAVRY studies comparing gender (Lodewijks et al., 2008; Penney et al., 2010; Schmidt et al., 2011; Welsh et al., 2008). Furthermore, studies using the Youth Level of Service/Case Management Inventory (YLS/CMI), a general adolescent risk instrument designed to address criminogenic needs (Hoge & Andrews, 2006), have found comparable total scores across gender (Jung & Rawana, 1999; Luong, 2007; Olver, Stockdale, & Wong, 2012; Schmidt et al., 2011; Schmidt, Hoge, & Gomes, 2005; Welsh et al., 2008). Conversely, male offenders have presented with significantly higher total scores and risk ratings compared with females on the SAVRY (Gammelgård et al., 2008; Gammelgård, Weizmann-Hенelius, Koivisto, Eronen, & Kaltiala-Heino, 2012) and the YLS/CMI (Onifade et al., 2008). In addition, an Australian study by Thompson and McGrath (2011), albeit in another jurisdiction, found female youth involved with the New South Wales (NSW) juvenile justice system had significantly higher general recidivism risk scores compared with their male counterparts. The inconsistencies between genders on total risk scores may reflect the differences in correctional samples that originate from jurisdictional variations in justice guidelines. Alternatively, these inconsistencies raise questions about the utility of total risk scores when considering gender differences in propensity for violence and the need to consider domain or specific factors.

**Domains**

Few studies have addressed differences in domain scores across gender. This study found significant gender differences on the Historical and Social/Contextual domains of the SAVRY where females presented with higher mean scores than males. This suggests that the adverse life experiences and the current criminogenic social circumstances of the females in this sample were more severe than their male counterparts. Previous studies exploring gender differences across SAVRY domains have produced inconsistent findings. Two studies found no significant gender differences across domains (Gammelgård et al., 2008; Meyers & Schmidt, 2008), conversely one study found males had significantly higher scores than females on the Individual/Contextual domain (Penney et al., 2010). Studies looking at gender differences in the YLS/CMI domains have also had inconsistent findings with some reporting no gender differences (Jung & Rawana, 1999; Schmidt et al., 2005), though others report gender differences in at least one domain (Olver et al., 2012; Schmidt et al., 2011; Thompson & McGrath, 2011).

Looking at protective factors, the domain mean totals of the present study were in line with previous SAVRY studies (Dolan & Rennie, 2008; Lodewijks et al., 2008; Schmidt et al., 2011) and no significant domain differences were discovered across gender. The quantity of protective factors displayed appears similar across gender, though there were discrepancies in individual factor occurrence. As the literature on gender differences across domain totals is meager and inconsistent, an examination of gender differentiation on the individual items contributing to the domain scores is of more benefit.

**Individual Items**

At the individual item level, both genders had over half their respective cohorts receiving a high-risk rating on a number of items. Although a history of violent and nonviolent offending was common (>70%) in males and females, rates did not significantly differ. Previous SAVRY research has found strong correlations between the Historical domain, which contains these items, and future violent recidivism for male and female youth in custody (Dolan & Rennie, 2008; Gammelgård et al., 2008; Penney et al., 2010). In addition, studies on the YLS/CMI suggest that the “Criminal history” item predicts future recidivism across gender. Previous offending is known to be a significant predictor of future recidivism (Farrington, 1995; Farrington & Loeber, 2000; Lynch, Buckman, & Krenske, 2003; Moffitt, 1993) and appears to be a consistent risk marker across the genders. The lack of gender differences in rates of prior offending in this study may reflect data suggesting that adolescent female offending is increasing more steadily than male offending. Research suggests that increases in rates of female violence are more the result of net-widening risk management policy shifts resulting in a greater number of females being processed as offenders rather than cogent changes in female behavior (Carrington, 2006; Deakin & Spencer, 2003; Steffensmeier, Schwartz, Zhong, & Ackerman, 2005). Nonetheless, in a severe sample of chronic male and female youth offenders, it is likely that both groups would share similar problematic criminal histories.

The item “Peer delinquency” was similarly prevalent (>65%) in our cohort. This is consistent with research showing that youth gang membership is often a precursor to antisocial behavior (Battin, Hill, Abbott, Catalano, & Hawkins, 1998; Thornberry, 1998) and reports that delinquent females are frequently involved in illegal gang activity (Moore & Hagedorn, 2001). While similar levels of peer delinquency are observed, the role and influence these relationships have on offending may differ across the genders. In particular, research describes the specific influence antisocial male partners and acquaintances can have on females with respect to offending behavior (Chesney-Lind, Morash, & Stevens, 2008; Foster, Hagan, & Brooks-Gunn, 2004; Heilbrun et al., 2006).
2008; Robertson & Murachver, 2007; Schaffner, 2006; Stattin & Magnusson, 1990), suggesting that peer delinquency may represent a greater risk marker for females compared with males.

Gender differences were noted with females receiving higher risk ratings than males on items reflecting problematic family and peer group relationships. This is consistent with reports that a high proportion of imprisoned females lack stable and supportive families (Chesney-Lind et al., 2008; Gavazzi et al., 2006; Hubbard & Pratt, 2002; McCabe et al., 2002; Van Voorhis et al., 2010). Moreover, family factors tapping caregiver-child interaction and connectedness have been found to be a better predictor of female offending than for males (Blum et al., 2003; Farrington & Painter, 2004; Funk, 1999). Previous studies using the YLS/CMI have found that females are significantly more likely to score higher than males on the “Family” domain that addresses inadequate supervision and poor relationships with parents (Olver et al., 2012; Schmidt et al., 2011, Thompson & McGrath, 2011). As inadequate parental supervision and communication is linked with future delinquency (Capaldi & Patterson, 1996; Gavazzi et al., 2006; Loebber & Stouthamer-Loebber, 1986), family-based interventions such as multisystemic therapy may be of particular value in reducing offending behavior in females (Henggeler, Melton, & Smith, 1992; Schaeffer & Borduin, 2005), who are thought to be more adversely affected than males when family and social bonds are disrupted (Cernkovich & Giordano, 1987; Funk, 1999; Gilligan, 1982; Van Voorhis et al., 2010).

In the present study, females had significantly higher rates of peer rejection than males. Negative developmental experiences with peers have been identified as risk factors for future delinquency (Hubbard & Pratt, 2002; Kupersmidt, Coie, & Dodge, 1990; Moffitt et al., 2001). Gender-specific literature suggests that female pathways to crime often originate from abusive, chaotic, lawless homes and relationships (Blum et al., 2003; Daly, 1992, 1994; Hoyt & Scherer, 1998; Owen & Bloom, 1995; Simpson, Yahner, & Dugan, 2008). The relatively high female SAVRY total scores from our sample are likely to reflect the presence of these “pathway” items.

Witnessing violence in the home is a risk factor for future violence and aggression, particularly as youths model their behavior on the interactions and responses of their caregivers (Elliott, 1994; Herrera & McCloskey, 2001). In this study, females were significantly more likely than males to have had exposure to violence at home. Indeed, our female sample frequently reported periods of homelessness and domestic abuse from older and often delinquent partners suggesting that they are leaving dysfunctional families and entering into dis harmonious relationships with partners.

Furthermore, females were significantly more likely than males to have a history of self-harm or suicide attempts. The latter finding is consistent with previous research (Indig et al., 2010; Miller, 1994; Veysey & Hamilton, 2007) and in earlier SAVRY studies (Gammelgärd et al., 2008; Lodewijks et al., 2008; Penney et al., 2010). Female prisoners are reported to have suffered high rates of physical and sexual trauma (Chesney-Lind et al., 2008; Forsythe & Adams, 2009; Indig et al., 2010; Johnson, 2004; Rettinger & Andrews, 2010; Siegel & Williams, 2003; Wasserman & McReynolds, 2011), which may in turn contribute to subsequent psychiatric symptomatology (Belknap & Holsinger, 2006; Teplin, Abram, McClelland, Dulcan, & Mericle, 2002; Timmons-Mitchell et al., 1997; Tye & Mullen, 2006; Vincent et al., 2008). Self-injury in female offenders tends to be associated with high rates of psychopathology as well as an increased risk for violent recidivism (Vollm & Dolan, 2009) making this a significant treatment target for female offenders.

Substance abuse rates were high in the cohort with more than three quarters of males and females receiving a high-risk rating for this item, indicating chronic drug and alcohol use. Although there were no gender differences in rates of substance abuse, our data are consistent with other studies noting a high prevalence of substance use among youth offenders (Prichard & Payne, 2005; Sedarak & McPherson, 2010; Wei, Makkai, & McGregor, 2003). Previous studies have found higher rates of problematic substance use among female offenders (Coid et al., 2009; Forsythe & Adams, 2009; Gately, Fleming, Morris, & McGregor, 2012; Indig et al., 2010; Loxley & Adams, 2009). Female offenders have been found significantly more likely than males to score higher on the “Substance Abuse” domain using the YLS/CMI (Olver et al., 2012; Thompson & McGrath, 2011) and its adult version, the Level of Service Inventory-Revised (LSI-R; Heilbrun et al., 2008). Furthermore, Andrews et al. (2012) found the substance abuse item on the LSI-R to be a stronger predictor of recidivism for female offenders. As drug and alcohol abuse are key situational factors that inhibit rational responses and intensify violent behavior (Farrington & Loebber, 2000; Hoaken & Stewart, 2003; Morgan & McAtamney, 2009), substance abuse needs to be a key treatment target in offense reduction programs for both genders.

In this study, the prevalence of protective factors was low in both genders and this may have contributed to our high total scores given that protective factors appear to mitigate violent reoffending (Lodewijks et al., 2010; Rennie & Dolan, 2010). There were no striking gender differences on each item other than females having significantly lower levels of prosocial involvement compared with males. This finding contrasts with that of Gammelgärd et al. (2012) who found higher rates of prosocial involvement among females. The findings appear to suggest that deviant social peers may have a greater influence on offending behavior in Australian female offenders and that the development of more prosocial bonds will be critical in reducing offending behavior.
Limitations

Some limitations to the study are worth noting. The female youth cohort in this study may not truly represent the majority of female offenders outside of Victoria, particularly due to the jurisdictional policy of detaining youth as a last resort, resulting in only the most severe female youths ending up in custody. Conversely, the results may generalize to the high-risk end of young female offenders. Second, the female sample size was small and comparatively lower than the male cohort. The disparity is a reflection of the predominance of male criminality and low proportion of females in the juvenile and adult justice systems in Australia. While nonparametric analyses were conducted to account for the discrepant sample sizes, this did reduce the power of resultant analyses and the size of effects that could be detected. As such, there could potentially be further differences between males and females that went undetected. Conversely, the effects that were observed in this study are likely to be larger in the population than were observed. Nevertheless, the size of the female sample was similar to previous SAVRY studies comparing gender (Lodewijks et al., 2008; Meyers & Schmidt, 2008; Schmidt et al., 2011). Last, the predictive validity of the SAVRY instrument was not conducted. The theme of the article was to identify how the prevalence and severity of risk items may differ between male and female young offenders in a particularly violent sample. As the SAVRY instrument encompasses a concert of pertinent antecedents to youth violence, it was selected primarily as a checklist for gender comparison.

Conclusion

The study contributes to extant literature on risk factors for youth violence risk, though undertaken in a unique Australian youth justice context. Gender differences on SAVRY domains and individual items were discovered. Factors including family dysfunction/breakdown, peer rejection, and self-harming behavior were found to be over-represented among female offenders. The findings reflect the literature on gendered pathways to offending and in particular highlight cogent female-specific risk factors that may manifest through experiences of abuse and associated trauma. The findings add to the growing base of gender-specific research highlighting a common array of risk factors shared by young and adult female offenders. Multifaceted gender responsive treatment programs focusing on connectivity and emotional guidance, empowerment, repairing relationships, and specific services providing support for trauma, abuse, child care, employment opportunities, and drug dependency could provide unique holistic support in addressing key needs. Further research is required to determine the validity of the SAVRY and other widely used youth violence risk prediction instruments across gender in Australian young offender populations.

Appendix

Structured Assessment of Violence Risk in Youth (SAVRY; Borum, Bartel, & Forth, 2003).

<table>
<thead>
<tr>
<th>Historical factors</th>
<th>Social/contextual risk factors</th>
<th>Individual/clinical risk factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of violence</td>
<td>Peer delinquency</td>
<td>Negative attitudes</td>
</tr>
<tr>
<td>History of nonviolent offending</td>
<td>Peer rejection</td>
<td>Risk taking/impulsivity</td>
</tr>
<tr>
<td>Early initiation of violence</td>
<td>Stress and poor coping</td>
<td>Substance use difficulties</td>
</tr>
<tr>
<td>Past supervision or intervention failures</td>
<td>Poor parental management</td>
<td>Low empathy/remorse</td>
</tr>
<tr>
<td>History of self-harm or suicide attempts</td>
<td>Lack of personal or social support</td>
<td>Attention deficit/hyperactivity difficulties</td>
</tr>
<tr>
<td>Exposure to violence in the home</td>
<td>Community disorganization</td>
<td>Poor compliance</td>
</tr>
<tr>
<td>Childhood history of maltreatment</td>
<td></td>
<td>Low interest/commitment to school</td>
</tr>
<tr>
<td>Parental or caregiver criminality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early caregiver disruption</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor school achievement</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Protective factors

| Prosocial involvement                                  | Strong social support                                               | Low empathy/remorse                                               |
|---------------------------------------------------------|                                                                     |                                                                   |
| Strong attachment and bonds                            | Strong commitment to school                                         | Attention deficit/hyperactivity difficulties                      |
| Positive attitude toward intervention and authority     |                                                                     | Poor compliance                                                   |
| Strong attachment and bonds                            |                                                                     | Low interest/commitment to school                                 |
| Resilient personality traits                            |                                                                     |                                                                   |

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