The Impact of Violence on At-Risk Youth in Canada, the United States, and the Netherlands

Jennifer Butters a , Lana Harrison b , Dirk J. Korf c , Serge Brochu d & Patricia G. Erickson a e

a Center for Addiction and Mental Health , Toronto, Ontario, Canada
b Center for Drug and Alcohol Studies, University of Delaware , Newark, USA
c Bonger Institute of Criminology, University of Amsterdam , Amsterdam, The Netherlands
d Université de Montréal , Montréal, Quebec, Canada
e University of Toronto , Toronto, Ontario, Canada

Published online: 29 Sep 2011.

To cite this article: Jennifer Butters , Lana Harrison , Dirk J. Korf , Serge Brochu & Patricia G. Erickson (2011) The Impact of Violence on At-Risk Youth in Canada, the United States, and the Netherlands, Victims & Offenders: An International Journal of Evidence-based Research, Policy, and Practice, 6:4, 341-355, DOI: 10.1080/15564886.2011.607392

To link to this article: http://dx.doi.org/10.1080/15564886.2011.607392

PLEASE SCROLL DOWN FOR ARTICLE
The Impact of Violence on At-Risk Youth in Canada, the United States, and the Netherlands

Jennifer Butters
Center for Addiction and Mental Health, Toronto, Ontario, Canada

Lana Harrison
Center for Drug and Alcohol Studies, University of Delaware, Newark, USA

Dirk J. Korf
Bonger Institute of Criminology, University of Amsterdam, Amsterdam, The Netherlands

Serge Brochu
Université de Montréal, Montréal, Quebec, Canada

Patricia G. Erickson
Center for Addiction and Mental Health, and University of Toronto, Toronto, Ontario, Canada

Abstract: Concerns over youth violence and victimization are widespread, but it is rare that national trends can be compared with identical methods. This paper provides...
a cross-national examination of internalized, externalized, and help-seeking responses to weapon-related victimization among 1,398 at-risk male and female youth between the ages of 14 and 17 in Toronto, Montreal, Philadelphia, and Amsterdam. Analyses were conducted of seven potential responses to weapon-related victimization. Striking similarities in trends were observed: becoming more aggressive, becoming more afraid or cautious, starting to carry a weapon, and increasing feelings of depression were predominant responses in each city. However, clear patterns emerged that showed fewer Amsterdam youth reported these reactions—while more youth in Toronto were affected. Logistic regression revealed a strong impact of site and previous weapon-related violence on youths' responses to violence. We conclude with a discussion of challenges that emerged in the process of conducting a cross-national project and analyzing youth victimization in three countries.

Keywords: response to violence, at-risk youth, cross-national

INTRODUCTION

Comparative cross-national studies are an essential means of understanding universal regularities in behavior (Harkness, Mohler, & Van de Vijver, 2003). It has been suggested that social circumstances may influence developmental pathways by producing biological changes that affect competency and well-being over the life-course (Keating & Hertzman, 1999). One of the critical variables that may shed light on the impaired psychological functioning of high-risk, delinquent youth is exposure to violence.

Youth violence is a form of interpersonal violence including verbal threats, bullying (and mild or major physical assault), and homicide. Although a decline in the overall crime rate has been observed in countries including Canada, the United States, and the Netherlands, violent crime rates among youth have increased (Eggen & Kalidien, 2008; Statistics Canada, 2010; U.S. Bureau of Justice Statistics, 2010). In general, adolescents aged 15–17 report the highest rate of violence among all age groups. Based on official statistics, these reported rates may reflect an underestimation of the actual violence experienced—as youth who suffer violence often do not report the incident to the authorities (Statistics Canada, 2010; U.S. Bureau of Justice Statistics, 2010).

The urban environment may expose youths to plenty of potential and actual violence (Lambert, Ialongo, Boyd, & Cooley, 2005; Luther & Goldstein, 2004). While it is more common to think of the more direct, personal forms of victimization (i.e., assault), exposure to violence also includes indirect exposure through witnessing an event or knowing a victim (Gibson, Morris, & Beaver, 2009; Haynie, Petts, Maimon, & Piquero, 2009).

Repercussions to violence exposure not only include immediate physical consequences but also a negative impact on development, mental health, and well-being. Research suggests exposure to violence at a young age elevates
the risk of developmental, cognitive, behavioral, and emotional disorders—including fear or anxiety, depression, and substance use (Goldstein, Walton, Cunningham, Trowbridge, & Maio, 2007; Haynie et al., 2009). Academic achievement may also be compromised, as such youth may be at greater risk of participating in deviant and delinquent behavior themselves (Fitzgerald, 2004; Zeman & Bressan, 2008). These issues may be of particular concern within a subpopulation of youth already experiencing difficulties with the law and their schooling.

Research suggests males and females may respond to experiences of violence differently (see Hanson et al., 2008, for a review). Following violent victimization, young women are more likely to report internalizing symptoms (e.g., depression, anxiety), whereas young men more often report externalizing symptoms (e.g., aggression, conduct problems) (Buckner, Beardslee, & Bassuk, 2004; Foster, Kuperminc, & Price, 2004). Young women are also more likely to seek help in the form of therapy or counseling after exposure to violence (Rickwood & Braithwaite, 1994; Tamres, Janicki, & Helgeson, 2002).

This paper examines how male and female youth respond to violence—emotionally, behaviorally, and in help-seeking ways. The analyses provide an assessment of various potential outcomes associated with victimization among at-risk youth in four cities in three different countries. The outcomes of interest speak to the youth’s general state of mind—including psychological distress in the aftermath of violence exposure, the potential for subsequent experiences of violence, and self-reported help-seeking behavior. Although youth may experience both indirect (i.e., witnessing violence) and direct (i.e., personal attacks) forms of victimization, these analyses focus on those specifically reporting the more explicit form of weapon victimization.

METHODS

This study provides a unique opportunity to examine a variety of nonclinical, psychological, and help-seeking outcomes associated with victimization among at-risk youth in an international context, with comparable samples using the same methods and time frame. The data are derived from the Drugs, Alcohol, and Violence International (DAVI) study of male and female youth, aged 14–17 years, in four metropolitan areas including Toronto (Canada), Montreal (Canada), Philadelphia (United States), and a comparable tri-province urban area surrounding Amsterdam (the Netherlands). Previous publications have examined predatory violence (or the instigation of violence); however, this paper provides the first analysis of that data pertaining to victimization (Adlaf, Korf, Harrison, & Erickson, 2006; Erickson, Butters, Cousineau, Harrison, & Korf, 2006; Erickson, Butters, Korf, Harrison, & Cousineau, 2006).

The geographical capture area for all three DAVI sites is the Census Metropolitan Area defined by the statistical agencies of each country.
Compared to the United States and Canada, the Netherlands is a small country (16,040 square miles) with a high population density (approximately 1,000 people per square mile). To provide a comparable Dutch site, three provinces were combined for the study (Noord-Holland, Flevoland, and Utrecht), an area we will call Amsterdam TPA (Amsterdam Three Provinces Area) (Adlaf et al., 2006).

As reviewed in detail by Erickson, Butters, Korf et al. (2006), there is considerable variation in national gun laws and policies on access and possession in our four sites. Generally, firearms are not legally available to those under 18 years old in each site. Laws against sale to and possession by youth are a uniform feature, as are special provisions for the police and military to obtain and carry guns and other weapons. However, the three countries vary in the principles and regulations governing access by the adult general public. Overall, guns are more readily obtainable in the United States than in the other two countries. The Netherlands is the most restrictive, allowing guns almost solely for sports shooting and requiring they be kept in such facilities, not in homes.

The DAVI study was designed to employ standardized methodological procedures by the teams at all four sites—including definitions of target populations, instructions for sampling, modes of interview, and standardized questionnaires professionally translated into Dutch and French from the English original. Consequently, with adequate statistical control of background variables, variations found between sites should reflect real differences between populations.

Samples

Cross-national studies of victimization have tended to focus on general population and school samples (Reinarman, Cohen, & Kaal, 2004). Conversely, our study examines the impact of violence on adolescent males and females involved in either delinquent activities like truancy or offenses serious enough to result in custody. This group represents youth who may not only be at higher risk for violence than the more conventional adolescent population but also present greater challenges for intervention. These analyses are based on personal interviews with comparable samples making up a total of 1,398 at-risk youth, comprised of detainees in the youth justice system and dropouts in the community: Toronto (162 detainees; 200 dropouts), Montreal (182; 96), Philadelphia (183; 181), and Amsterdam (205; 189). All protocols received ethics board review and approval at all the participating research institutions.

Detainees

The detainee sample was recruited from secure custody institutions serving the metropolitan areas of each city. There was no preselection based on history
of violence and researchers were unaware of the offenses for which they were detained (Adlaf et al., 2006). This sample represents at-risk male and female adolescents incarcerated in each site according to local youth justice system procedures. Each youth was prescreened on the eligibility criteria (age and residence) by institutional staff members before individual consent was given.

Females were purposefully oversampled in all sites, as males greatly outnumber females in all youth custody institutions. In Amsterdam and Montreal, females in custody under a judicial child welfare protection measure were recruited in order to approach the targeted male-female ratio. These young women were only included when they also had been arrested for criminal offenses, regardless of whether this was the official or main reason for their custody. One-to-one interviews were conducted and participants were paid $15.

Dropouts

A convenience sample of male and female dropouts was drawn from volunteers recruited in the community. To be eligible, the respondent had to be between 14 and 17 years of age, reside in the metropolitan areas of each site, and have left school for at least 30 consecutive days (other than holidays) during the past 12 months. These at-risk youth were located in a wide range of community agencies that provided educational, social, or outreach services for school dropouts, including alternative school programs and community drop-in centers. This sample is also comprised of a number of delinquent youth, as 42.2% had spent some time in custody. This sample is not representative of all dropouts, many of whom would be more likely found in the family home or local shopping mall. Agencies were contacted by project staff and permission was requested either to allow researchers to make contact with youth on their premises or to have advertisements posted at their site. Personal interviews were conducted in private and respondents were compensated for their time.

Measures

Demographic Characteristics

Three demographic characteristics are included in the analysis: gender, age, and site. For the logistic regression analysis, gender is coded with females represented by a score of 1. Age is recoded into two categories, younger adolescents (14 and 15 year olds = 1) and older adolescents (16 and 17 year olds = 0). Finally, for the site variable, Toronto is set as the comparison site indicator.

Outcomes of Violence

Seven outcomes of violence were assessed in these analyses. Respondents were asked to indicate (yes or no) whether each outcome had ever happened to them as a result of violence, regardless of whether they had been personally
victimized. These experiences referred to their time in the community (prior to detention for the detainees). Thus, youth who had witnessed violence were also able to respond to this question. The responses to violence fall into three categories: (1) internalization (felt depressed, lost appetite or sleep, and became more afraid or cautious; (2) externalization (became more aggressive and started to carry a weapon); and (3) help-seeking (sought any type of counseling, sought medical attention—medical attention included seeking help from a doctor or at a hospital, and/or staying overnight in a hospital).

**Weapon-Related Victimization**

A measure of weapon victimization was created to assess the outcomes of violence associated with this potentially more harmful experience. Respondents were asked to indicate whether any of the following had happened to them in their lifetime: threatened with an object, threatened with a knife, or threatened with a gun, and whether they had been hurt with an object, knife, and/or gun. A score of 0 indicated no lifetime weapon victimization and 1 reflected at least one positive answer to the four items.

**RESULTS**

The descriptive analyses examine the outcomes of violence reported by male and female respondents across each site who had experienced a more explicit expression of direct victimization, that inflicted by use of weapons. Following this, a series of stepwise logistic regression analyses were conducted estimating the impact of site, gender, age, and previous personal weapon-related victimization on the probability of the seven potential outcomes associated with victimization. These results are reported as odds ratios (ORs).

Table 1 presents a brief description of the at-risk samples. In each site, the majority of at-risk youth are male and fall into the older 16- to 17-year-old age category. Reports of any lifetime weapon-related victimization are high in each city.

Nearly two-thirds (63%) of youth in Amsterdam, Montreal, and Philadelphia report experiencing lifetime weapon-related victimization. In Toronto, the proportion is much greater at 86%. Being threatened with an object is reported most frequently in all sites, with the highest rate observed in Toronto (68%). Being threatened with a knife is most common in the Canadian cities and least frequently reported in Amsterdam (4%). Gun-related violence is also reported most frequently among Toronto youth (45%) followed by Philadelphia, Montreal, and finally Amsterdam (23%). Finally, 18% of youth in Amsterdam and Montreal and 21% in Philadelphia report being hurt by a weapon, while Toronto youth are again most likely (41%) to indicate this experience.
Table 1: Background characteristics and weapon victimization.

<table>
<thead>
<tr>
<th></th>
<th>Amsterdam (N = 394)</th>
<th>Montreal (N = 278)</th>
<th>Philadelphia (N = 364)</th>
<th>Toronto (N = 362)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Male</td>
<td>63.5</td>
<td>68</td>
<td>56</td>
<td>69</td>
</tr>
<tr>
<td>Female</td>
<td>36.5</td>
<td>33</td>
<td>44</td>
<td>31</td>
</tr>
<tr>
<td>14 years</td>
<td>16</td>
<td>8</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>15 years</td>
<td>24</td>
<td>19</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>16 years</td>
<td>32</td>
<td>29</td>
<td>30</td>
<td>33</td>
</tr>
<tr>
<td>17 years</td>
<td>28</td>
<td>44</td>
<td>44</td>
<td>41</td>
</tr>
<tr>
<td>Any weapon victimization</td>
<td>63</td>
<td>64</td>
<td>62</td>
<td>86</td>
</tr>
<tr>
<td>Threatened with an object</td>
<td>39</td>
<td>50</td>
<td>43</td>
<td>68</td>
</tr>
<tr>
<td>Threatened with a knife</td>
<td>4</td>
<td>45</td>
<td>36</td>
<td>61</td>
</tr>
<tr>
<td>Threatened with a gun</td>
<td>23</td>
<td>30</td>
<td>34</td>
<td>45</td>
</tr>
<tr>
<td>Hurt with either an object, knife, or gun</td>
<td>18</td>
<td>18</td>
<td>21</td>
<td>41</td>
</tr>
</tbody>
</table>

1 Weapon victimization included being threatened with an object, threatened with a knife, or threatened with a gun—and/or being hurt by one of these weapons.

Bivariate Analysis: Youth with a Reported History of Weapon-Related Victimization

The following analysis (Table 2) examines trends among males and females in each city who report a history of weapon-related victimization (threatened with an object, threatened with a knife, threatened with a gun, and/or actually being hurt by one of these weapons). The overall trend reveals that the proportions for each response to violence are higher among North American youth than their Amsterdam counterparts.

Internalization

Significant differences between the sites for each potential internalization response associated with the experience of violence are evident. Overall, internalized responses to weapon-related victimization are greater among youth in the North American cities and are more commonly cited by females. Among males in the North American cities, roughly two thirds report increased fear and caution as a result of weapon-related violence while only 30% indicate the same in Amsterdam. Reports of depressed feelings or loss of sleep/appetite were substantially less among at-risk males, although 49% of males in Philadelphia indicated a more depressed mood.

Among females a greater proportion of those in the Canadian cities (Toronto 71%; Montreal 81%) report increased fear in comparison to those in Philadelphia (52%) and Amsterdam (44%). Feelings of depression also were prominent among young women in the North American cities (two thirds in each) and by 39% of their Amsterdam counterparts. Although reported less frequently, indications of lost appetite and/or sleep remained a notable occurrence for them.
Table 2: Proportion of at-risk youth reporting the seven outcomes associated with violence among those who have been the victims of weapon-related violence.

| Responses to violence | Amsterdam  
(N = 247) males  
(N = 169) females  
n = 78 | Montreal  
(N = 176) males  
(N = 134) females  
n = 42 | Philadelphia  
(N = 227) males  
(N = 143) females  
n = 84 | Toronto  
(N = 310) males  
(N = 215) females  
n = 95 | \( \chi^2 \) |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Internalization</td>
<td>Felt depressed</td>
<td>15</td>
<td>33</td>
<td>49</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>39</td>
<td>60</td>
<td>63</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>Lost appetite or sleep</td>
<td>14</td>
<td>22</td>
<td>39</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28</td>
<td>45</td>
<td>50</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Become more afraid or cautious</td>
<td>30</td>
<td>63</td>
<td>61</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td></td>
<td>44</td>
<td>81</td>
<td>52</td>
<td>71</td>
</tr>
<tr>
<td>Externalization</td>
<td>Became more aggressive</td>
<td>67</td>
<td>75</td>
<td>84</td>
<td>84</td>
</tr>
<tr>
<td></td>
<td></td>
<td>77</td>
<td>88</td>
<td>70</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>Started to carry a weapon</td>
<td>41</td>
<td>60</td>
<td>57</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td></td>
<td>39</td>
<td>26</td>
<td>39</td>
<td>44</td>
</tr>
<tr>
<td>Help-Seeking</td>
<td>Sought counseling</td>
<td>12</td>
<td>23</td>
<td>24</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24</td>
<td>43</td>
<td>45</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>Sought medical attention(^a)</td>
<td>15</td>
<td>26</td>
<td>37</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19</td>
<td>31</td>
<td>27</td>
<td>39</td>
</tr>
</tbody>
</table>

\(^a\)Includes seeing a doctor, going to a hospital, and staying overnight in a hospital.
Externalization

Although more frequently cited by males, for each of the four sites the most commonly reported response associated with weapon-related violence was “becoming more aggressive.” This is particularly evident for males in Toronto and Philadelphia (84%) followed by 75% in Philadelphia and 67% in Amsterdam. In addition, starting to carry a weapon as a result of violent victimization is also reported by a large proportion of males in each site. This response was more common in the Canadian cities (Toronto 65%; Montreal 60%), although response rates are still high in Philadelphia (57%) and Amsterdam (41%).

The proportion of females reporting increased aggression as a result of weapon-related victimization was quite striking, with proportions ranging from 77% in Amsterdam to 88% in Montreal (site differences were not significant). Of note, female respondents in Montreal and Amsterdam were more likely to report this outcome than their male counterparts. Although reported less frequently, starting to carry a weapon as a response to violence remains quite noticeable among females. The largest proportion is evident among females in Toronto (44%), followed by 39% in both Amsterdam and Philadelphia and 26% in Montreal.

Help-Seeking

Several trends emerge from these analyses. Overall, help-seeking is a more common response among at-risk females with a history of weapon-related victimization. However, in comparison to internalized and externalized responses to victimization, help-seeking actions are reported less frequently. Additionally, a smaller proportion of males and females in Amsterdam report these outcomes in comparison to youth in the other sites. Seeking counseling was reported by a large number of young women with a history of weapon-related violence; over 40% in the North American cities and a quarter of those in Amsterdam. These proportions were noticeably less among males (ranging from 23% to 30% in the North American sites and only 12% in Amsterdam). Among males, requiring medical treatment was more frequently cited in the North American sites, particularly in Toronto (47%) and Philadelphia (37%). However, for females a larger proportion of those in the Canadian sites reported this outcome (39% Toronto and 31% Montreal).

Logistic Regression Analysis

The logistic regression model examines the main effect of gender, age, weapon-related victimization, and site while controlling for all the other variables in the model on the likelihood of reporting each potential outcome associated with violence. These results illustrate the full, final model and are presented on Table 3. The bivariate analysis showed Toronto to be significantly
Table 3: Odds ratios (and 95% confidence intervals) from logistic regression analysis predicting the likelihood of seven potential outcomes associated with the experience of weapon-related violence.

<table>
<thead>
<tr>
<th>Model I</th>
<th>Model II</th>
<th>Model III</th>
<th>Model IV</th>
<th>Model V</th>
<th>Model VI</th>
<th>Model VII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Felt depressed (n = 1,396)</td>
<td>Lost appetite or sleep (n = 1,396)</td>
<td>Become more afraid/cautious (n = 1,396)</td>
<td>Became more aggressive (n = 1,393)</td>
<td>Started to carry a weapon (n = 1,392)</td>
<td>Sought counseling (n = 1,397)</td>
<td>Sought medical attention(^a) (n = 1,396)</td>
</tr>
<tr>
<td>Odds ratio</td>
<td>Odds ratio</td>
<td>Odds ratio</td>
<td>Odds ratio</td>
<td>Odds ratio</td>
<td>Odds ratio</td>
<td>Odds ratio</td>
</tr>
<tr>
<td>Amsterdam</td>
<td>0.471(<em>)</em>**</td>
<td>0.408(<em>)</em>**</td>
<td>0.338(<em>)</em>**</td>
<td>0.592(<em>)</em>**</td>
<td>0.488(<em>)</em>**</td>
<td>0.413(<em>)</em>**</td>
</tr>
<tr>
<td></td>
<td>(0.338–0.656)</td>
<td>(0.284–0.587)</td>
<td>(0.248–0.459)</td>
<td>(0.422–0.829)</td>
<td>(0.356–0.669)</td>
<td>(0.286–0.598)</td>
</tr>
<tr>
<td>Montreal</td>
<td>1.04</td>
<td>0.818</td>
<td>0.328</td>
<td>0.715</td>
<td>0.611**</td>
<td>0.904</td>
</tr>
<tr>
<td></td>
<td>(0.740–1.45)</td>
<td>(0.571–1.17)</td>
<td>(0.847–1.64)</td>
<td>(0.495–1.03)</td>
<td>(0.434–0.860)</td>
<td>(0.631–1.30)</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>1.50*</td>
<td>1.35</td>
<td>0.663**</td>
<td>0.833</td>
<td>0.788</td>
<td>0.941</td>
</tr>
<tr>
<td></td>
<td>(1.10–2.04)</td>
<td>(0.981–1.86)</td>
<td>(0.489–0.900)</td>
<td>(0.587–1.18)</td>
<td>(0.575–1.08)</td>
<td>(0.675–1.31)</td>
</tr>
<tr>
<td>Female</td>
<td>2.64***</td>
<td>2.41***</td>
<td>1.5***</td>
<td>0.964</td>
<td>0.467***</td>
<td>1.92***</td>
</tr>
<tr>
<td></td>
<td>(2.08–3.35)</td>
<td>(1.87–3.10)</td>
<td>(1.19–1.90)</td>
<td>(0.751–1.24)</td>
<td>(0.364–0.60)</td>
<td>(1.48–2.49)</td>
</tr>
<tr>
<td>14–15 years old</td>
<td>0.901</td>
<td>0.859</td>
<td>0.827</td>
<td>1.24</td>
<td>1.06</td>
<td>1.24</td>
</tr>
<tr>
<td></td>
<td>(0.70–1.16)</td>
<td>(0.653–1.13)</td>
<td>(0.650–1.05)</td>
<td>(0.952–1.62)</td>
<td>(0.819–1.37)</td>
<td>(0.938–1.62)</td>
</tr>
<tr>
<td>Victimized by a weapon</td>
<td>1.60**</td>
<td>1.85***</td>
<td>1.84**</td>
<td>2.61***</td>
<td>3.95***</td>
<td>1.90**</td>
</tr>
<tr>
<td></td>
<td>(1.23–2.07)</td>
<td>(1.38–2.46)</td>
<td>(1.44–2.36)</td>
<td>(2.03–3.35)</td>
<td>(2.97–5.24)</td>
<td>(1.40–2.55)</td>
</tr>
<tr>
<td>R(^2) (Nagelkerke)</td>
<td>0.109</td>
<td>0.121</td>
<td>0.114</td>
<td>0.079</td>
<td>0.180</td>
<td>0.074</td>
</tr>
<tr>
<td>χ(^2) (p value)(^b)</td>
<td>9.58 (0.296)</td>
<td>5.59 (0.588)</td>
<td>5.10 (0.648)</td>
<td>11.23 (0.189)</td>
<td>3.27 (0.916)</td>
<td>12.58 (0.127)</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>1815.70</td>
<td>1704.88</td>
<td>1540.42</td>
<td>1615.85</td>
<td>1680.55</td>
<td>1484.23</td>
</tr>
</tbody>
</table>

Reference category for country is Toronto.

*\(p < .05\); **\(p < .01\); ***\(p < .001\).

\(^a\)Includes seeing a doctor, going to a hospital, and staying overnight in a hospital.

\(^b\)Hosmer & Lemeshow.
different from the other sites on several items, and so it was selected as the reference city.

In comparison to Toronto, Amsterdam youth were significantly less likely to report each response to violence. A less consistent pattern was observed comparing Montreal and Philadelphia to Toronto. In comparison to Toronto, Montreal youth were less likely to report starting to carry a weapon (OR = .611; p < .01) and to seek medical attention (OR = .467; p < .000). Similarly, youth in Philadelphia were also less likely to report seeking medical attention (OR = .653; p < .05). In comparison to their Toronto counterparts, Philadelphia youth were also less likely to report becoming more afraid and cautious (OR = .663; p < .05). However, youth in Philadelphia were significantly (1.5 times) more likely to report feelings of depression associated with experiences of violence.

Regarding gender, females were 2.6 times as likely to cite feelings of depression, 2.4 times as likely to indicate loss of sleep or appetite, and 1.5 times more likely to report they had become more afraid or cautious in comparison to their male counterparts. Furthermore, the likelihood of seeking counseling was roughly 2 times greater for females than males (OR = 1.92; p < .000). Conversely, females were less likely (OR = .467; p < .000) to indicate that they started to carry a weapon than their male counterparts.

Age was significantly associated with only one response to violence. In comparison to older adolescents, at-risk youth 14 to 15 years of age were less likely to indicate seeking medical attention (OR = .679; p < .05).

Finally, weapon-related victimization was significantly associated with all responses to violence. Youth who had experienced this form of violence were almost 2 times as likely to report each internalizing outcome in comparison to those who had not been exposed to weapon-related violence. The odds of reporting externalizing responses to violence were even more pronounced. Those who had been the victim of weapon-related violence were over 2 times as likely (OR = 2.61, p < .000) to indicate they had become more aggressive. These youth were also almost 4 times (OR = 3.95; p < .000) as likely to start carrying a weapon as a result of violence. Furthermore, among those with a history of weapon-related victimization, the odds of seeking counseling were 1.9 times greater; odds were also 4 times greater (OR = 4.03; p < .000) for seeking medical attention in comparison to those not experiencing weapon-related victimization.

**DISCUSSION**

Adolescence is the age at which victimization is most likely to occur. The most common response to weapon-related victimization among adolescents in each city examined in these analyses was to become more aggressive, suggesting a level of violence intensification or escalation. Furthermore, the proportions
of youth who report starting to carry a weapon as a result of their victimization were striking and lend additional concern regarding the forms of violence in which these youth may subsequently engage. The consistency of these responses across the four cities, regardless of the systemic and local cultural differences that characterize cross-national research, reveals a pattern that has added credibility due to our coordinated approach. Although the interpretation of cross-national differences in the presence of methodological differences can be problematic, the interpretation of substantive similarities when common methods have been adopted is a stronger indication of the robustness of findings.

Any form of violent victimization carries a negative impact, but these findings suggest those with a history of weapon-related victimization may be particularly susceptible to these outcomes. While externalized responses to violence were prominent, these findings suggest that mental health and well-being may also be compromised as a consequence of weapon-related victimization and must not be ignored. Compromised mental health may inhibit reintegration into more normative social roles or behaviors, further impeding life-course trajectories. This may be particularly true given the relatively low proportions of youth who indicated help-seeking as a response to their violent victimization. It is also important to understand to what extent these responses to violence impact subsequent behavior, and what is being done to address these problems among at-risk youth. Criminal justice systems need to address the needs of adolescent victims within their institutions and also during services subsequent to release. School programs aimed at dropouts should consider what traumatic events may have contributed to school-leaving.

While strong similarities were observed, differences across sites also emerged that would not be evident without the benefit of a cross-national research design. Consistently higher proportions of North American youth indicated various responses to violence in comparison to their counterparts in Amsterdam. For example, youth in Amsterdam were overwhelmingly less likely to report increased aggression, starting to carry a weapon, and seeking counseling in comparison to those in the other cities—particularly in comparison to their Toronto counterparts. The proportion of youth with a history of weapon-related violence in Amsterdam is parallel to that observed in Philadelphia and Montreal, suggesting it may not be an issue of cross-national differences in the type of violence experienced. This raises the question as to whether there are cultural differences in how youth express their response to violence or whether there are cross-national differences in the degree of access to services for at-risk youth that have not been captured in these analyses. These are important questions for future research that emerged as a result of these cross-national site analyses.
Differences were also evident between the North American sites. Specifically, reports of increased fear, aggression, and weapon carrying as a result of weapon-related violence were greater among young women in Toronto than those in Philadelphia. These might reflect a differential environmental impact in the sense that there are more guns (and a higher homicide rate) in Philadelphia that may have desensitized youth in that city to threat. Gun violence is a more recent phenomenon in large Canadian cities (Sheptycki, 2009).

Overall, the bivariate findings revealed the expected gendered response to violence among males, as reports of increased aggression as a response to weapon-related victimization were substantially higher than internalized responses and seeking counseling. However, a sizable proportion of young men did cite increased fear and feelings of depression, which should not be ignored. In addition, contradicting the more typical expectation of females, the proportion of young women in each site indicating increased aggression was startlingly high and greater than those citing feelings of depression and appetite or sleep issues. Increased aggression among young women was also reinforced in the multivariate analyses. Although females were more likely to articulate internalized responses and to report seeking counseling than males, there was no significant gender difference with respect to the likelihood of becoming more aggressive. Subsequently, it is important to think beyond a typical gendered approach when developing intervention initiatives for young men and women who have experienced weapon-related victimization.

A fundamental challenge in cross-national studies is the comparability of data. Although the DAVI study was designed for a standardized implementation across sites, some structural and systemic population differences leading to sample variation were unavoidable (Korf, Brochu, Benschop, Harrison, & Erickson, 2008). Cross-national data might show variation between sites that are influenced by differences in data collection. In the DAVI study there were underlying systemic differences in the criminal justice systems regarding which offenders get channeled into custody initially. Nevertheless, the key areas of the questionnaire, target sample, and the overall approach to recruitment were consistent across sites. Furthermore, although the questionnaire was professionally translated, the issue remains as to whether we can be confident that the words share the same meaning cross-culturally. Translation-back translation is the norm, but meaning is more than a literal exchange of words. A challenge in cross-national research is to ensure, as much as possible, that the same meaning is kept across sites.

The objective of this paper was to provide a broad cross-national examination of consequences associated with victimization in a large sample of youth who have deviated from the more conventional path of adolescence. In doing so these findings have moved beyond the more standard analysis of student-based cross-national research. Cross-national research is demanding and risky, and
the importance of communication and keeping a team “connected,” in spite of distances, must be emphasized. However, the payoff in terms of theory testing with rich data that reach beyond one locale makes the effort worthwhile.

REFERENCES


