Firearm Access by At-Risk People: A Canadian Perspective

Matthew H. Logan Ph.D.

The year 2020 marks my 40th year of working in law enforcement, both as a Police Officer and Forensic Psychologist. I'm sure I have developed a bias on certain subjects over that time, but hopefully also gained some wisdom and perspective as well. I am aware that many people find the Canadian Firearm policies very restrictive and for the prosocial, law abiding citizen, it does feel that way. However, there is a continued interest in restricting firearm possession by "at-risk" people and that directs my perspective in the discussion on guns and mental health.

The overall contribution of people with serious mental illness to violent crimes is only about 3-4 % and most individuals diagnosed with a serious mental health disorder are no more likely to commit an act of violence (with or without a firearm) than the general population (Fazel & Grann, 2006). However, individuals with the most severe psychiatric diseases are at heightened risk for violent behavior when untreated for their symptoms. There is a crucial need to understand this relationship and to not hide behind a politically correct agenda in order to prevent creating a more powerful stigma. Discussing mental illness openly is in fact a way of reducing an unfair stigma by bringing the darkness on the subject into the light.

It is difficult to follow is the terminology or nomenclature of mental health. The term "mental illness" is used as often as "mental disorder" and they are both cited as "mental health issues". When a government official states that "the shooter has a history of mental illness", we are left to assume that he or she is schizophrenic or delusional when in fact it could mean that (s)he has a mood disorder or has an antisocial personality disorder. As we discuss firearm safety and keeping guns away from persons deemed to be "at risk", I want to focus on externalizing behaviour and symptomology that is observable whether or not it can be classified as a mental disorder.

For those that are tired of "psychobabble", bear with me as I describe externalizing behaviour by reaching into the DSM-5 and a description of the externalizing group of disorders: "On the basis of the published findings of this common DSM-5 and ICD-11 analysis, it was demonstrated that clustering of disorders according to what has been termed internalizing and externalizing factors represents an empirically supported framework...adjacencies of the 'externalizing group' including disorders exhibiting antisocial behaviours, conduct disturbances, addictions, and impulse-control disorders should encourage advances in identifying diagnoses, markers, and underlying mechanisms" (DSM-5, p.13).

Dr. John Monahan, a scholar that I believe has the most impact in the study of violence concluded: "The data that have recently become available, fairly read, suggest the one conclusion I did not want to reach: Whether the measure is the prevalence of violence among the disordered or the prevalence of disorder among the violent, whether the sample is people who are selected for treatment as inmates or patients in institutions or people randomly chosen from the open community, and no matter how many social and demographic factors are statistically taken into account, there appears to be a relationship between mental disorder and violent behavior" (Monahan, 1992. p. 518).

Over 20 years later, Monahan and colleagues noted that directly targeting mental illness as the major driver of gun violence is misguided. They add that prior violence, substance use, and early trauma are more likely to contribute to subsequent violence than is mental illness. The authors conclude that "the politically inspired haste to focus gun control efforts on people being treated for a mental illness, rather than on people with demonstrated indicators of violence risk, such as restraining orders related to domestic violence, seems particularly misdirected" (Steadman et al, 2015. P. 1240).

The relationship between mental disorder and violence is not simple and as Elbogen & Johnson (2009) noted, "mental illness is clearly relevant to violence risk but that its causal roles are complex, indirect, and embedded in a web of other important individual and situational cofactors to consider" (p.159).

There are many "cofactors" to consider and I'm not sure there is a hierarchy but I am most concerned about externalizing behaviours as they are the most detectable for law enforcement. Adult Externalizing Disorders include Antisocial Personality Disorder, Substance Use Disorders, Psychopathy, and Impulse Control Disorders such as Intermittent Explosive Disorder. They are often preceded by childhood history of Conduct Disorder and Oppositional Defiant Disorder. The symptoms of these disorders are typically observable and often denote a lack of behavioral control.

What Does It Mean to Be "At-Risk" for Violence?

Risk assessment methodology and its practical application provide useful tools for the safety screening of licence applicants and licence holders. In particular, risk assessment methodology can raise new questions that address the risks of an individual committing an act of violence which, in turn, can inform the safety screening process.

Risk assessments involve judgments about uncertainty. They are formal methods of giving shape to our fears of future harm. Risk assessments can limit the range of plausible speculation, but they are never certain (Hanson, 2009, p.172). Risk factors are traits associated with an increased likelihood that an individual or community will be affected by or become a perpetrator of violence. Risk factors can occur at the individual, family, school, and community levels. While not everyone who is identified as being 'at-risk' becomes involved in violence, research shows that those individuals with more than one risk factor and a lack of protective factors are more vulnerable to being affected by, or involved in violence. As an individual is exposed to more risk factors, the probability that she or he will engage in violent behavior increases.

The strongest predictor of violent recidivism is risk level yielded by objective risk assessment. "The predictive accuracy of specialized, structured risk assessment tools is superior to unstructured clinical judgment in appraising risk. Actuarial and structured professional judgment approaches are both useful in their predictive accuracy. Specialized actuarial risk assessment measures that (a) use predictor variables that are empirically supported and reliably scored; (b) combine these variables to yield a score that is calculated to provide maximally advantageous information about the 'cut score' to separate different categories of risk, and (c) are used consistently as intended are what is used in risk assessment today" (Heilbrun et al, 2017, p.122).

Items noted in the most commonly used actuarial measures (PCL-R; LSI-R; VRAG-R) and structured professional judgment tools (HCR-20; SARA) for violence prediction include: Early Violence (Young Age at

First Violent Incident); Early Behavioral Problems (Early Maladjustment); Impulsivity; Personality Disorder; Psychopathy; Substance Use Problems; and Previous Violence. The presence of these items in the risk for violence research is notable as information is gathered to assure responsible gun ownership. It is also notable as there is a clear focus on "early life" factors. There are experiences early in childhood, that make it more predictable that individuals are at substantially higher risk for violence. This fact alone speaks to the importance of knowing about early violence, early maladjustment, antisocial personality and conduct disorder and not just what has happened in a person's life within the past 5 years.

Although there have been tremendous advances in our understanding of risk factors, recent trends in violence risk-assessment research emphasize the need for an explanatory theory of the choice to act at a particular moment and the evolution of dynamic risk over time. These elements are difficult if not impossible to measure at the time that violence is occurring. Observing externalizing factors and variables as diverse as previous violence, substance abuse, personality disorder, and exposure to environmental stressors may allow us to develop a picture of what happens immediately before an act of violence. Being aware of context and the effect of particular environments on an individual can help illuminate a pathway to violence and assist the Police or Firearms Officers in creating obstacles on those paths.

"At Risk" can mean perpetrating Intimate Partner Violence (IPV)

In the Annual Report to the Chief Coroner of Ontario (2009), the Domestic Violence Death Review detailed the following risk factors that they deemed to be a common thread in their findings: History of violence outside of the family by perpetrator; Prior history of domestic violence; Pending or actual separation or estrangement; Obsessive behaviour displayed by perpetrator; Perpetrator depressed in the opinions of professionals and/or non-professionals; Escalation of violence; Prior threats of suicide or attempted suicide; Prior threats to kill victim; Prior attempts to isolate victim; Victim had intuitive sense of fear; History of violence outside the family; Perpetrator was unemployed; and possession of or access to firearms (DVDRC, 2009).

Despite conflicting opinions about the causal role played by alcohol abuse, the evidence is that women who live with heavy drinkers run a far greater risk of physical partner violence, and that men who have been drinking inflict more serious violence at the time of an assault. According to the survey of violence against women in Canada, women who lived with heavy drinkers were five times more likely to be assaulted by their partners than those who lived with non-drinkers (Johnson, 1996).

Studies from Canada and the United States show that men who assault their wives are more likely to be emotionally dependent, insecure and low in self esteem, and are more likely to find it difficult to control their impulses. They are also more likely than their non-violent peers to exhibit greater anger and hostility, to be depressed and to score high on certain scales of personality disorder, including antisocial, aggressive and borderline personality disorders. The most consistent finding to emerge for partner violence is marital conflict or discord in the relationship (Black et al., 1999).

Intimate partner violence (IPV) is the most common form of violence against women in Canada. In 2015, there were 84 intimate partner homicides in Canada and 72 in 2016 (Statistics Canada, 2016). A

Canadian report on family murder-suicides from 2001 to 2011 found that firearms were the most common cause of death in spousal murder-suicides and in murder-suicides involving child and youth victims (Sinha, 2013). The availability of a firearm to a perpetrator is a risk factor for fatal IPV. Compared with other methods, such as knives or bodily force, the use of a firearm in a family or intimate assault is associated with a higher likelihood of a fatal outcome (Campbell 'et al', 2003).

In the Application for Renewal of a Firearms Licence for an Individual in Canada, an applicant is required to have the signature of a current spouse, common-law partner, or other conjugal partner which would make them aware of the application. This portion as well as personal history questions relating to divorce, separation, or breakdown of relationship are integral to this application given the above statistics on intimate partner violence and firearms.

"At Risk" can mean a history of Early Maladjustment & Youth Violence

Family violence and intimate partner violence cause suffering, physical harm and long-lasting behavioural consequences for youth. In one 6-month period while I was a RCMP officer I attended the deaths of 2 children in separate incidents, both involving firearms. As a gun owner it challenged my thinking and has made me evermore aware of the need to create an awareness about family members that have access to firearms in the home.

When youth have access to guns and other weapons, they are at increased risk of becoming involved in violence. Some research has concluded that if adolescents have easy access to guns in the home, they are more likely to act violently towards others (Boyce & Cotter, 2012). Guns also increase the likelihood that violent acts will result in mortality; even if the number of violent acts remained undiminished, there would be fewer deaths and less serious injuries if guns were not used (Miller 'et al', 2002).

In Canada, from 2000 to 2012, there was a total of 739 firearm deaths among children (aged 19 and under), and these deaths involved 421 suicides, 252 homicides, 51 accidental deaths, and 15 of 'undetermined intent' (Keighley, 2017). Risk for various types of firearm death changes with age. From 2008 to 2012, among adolescents (15- to 19-year-olds), the majority (56%) of firearm deaths were suicides, whereas among young adults (20- to 24-year-olds), homicides comprised the majority of firearm deaths (55%). In the same time period, in younger children (under 15 years of age), there were 15 suicides, 10 homicides, 7 unintentional deaths and 2 whose type was undetermined (Austin & Lane 2018, p.35).

According to Statistics Canada, youth accused of homicide in 2016 were about two and a half times less likely to be involved in a gang-related incident compared to adults (5% of youth accused compared to 13% of adults accused). This is contrary to the average for the previous 10 years, where youth accused of homicide were on average two times more likely to be involved in a gang-related incident compared to adults (David, 2017). Gang-related homicides are much more likely to involve a firearm, usually a handgun. In 2012, 75% of gang-related homicides involved a firearm, compared with 21% of homicides that were not gang-related. Of firearm-related homicides, handguns were used in 80% of gang-related homicides compared with 48% of nongang-related homicides.

While the rate of firearm-related homicides has declined since its peak in the early 1990's, gun violence is the second most common cause of death among children in the U.S. The majority (68%) of youth who

died did so during adolescence. Among firearm deaths, 59% were homicides, 35% were suicides, and 4% were unintentional injuries (e.g., accidental discharge). (The intent was undetermined in 2% of firearm deaths.) In contrast, among U.S. adults (≥20 years of age), 62% of firearm deaths were from suicide and 37% were from homicide. Furthermore, although unintentional firearm deaths were responsible for less than 2% of all U.S. firearm deaths, 26% occurred among children and adolescents. (Cunningham et al, p.2468)

Children and adolescents have developmental characteristics that put them at increased risk for firearm injury. Children lack the experience, cognitive development and impulse control to distinguish a toy gun from a real one, to understand the consequences of gun handling and to consistently avoid doing something they have been told not to. While adolescents have more advanced cognitive capacity than children, they remain vulnerable to injury because they have incompletely developed self-regulation skills, such as impulse control. Self-regulation skills can be particularly impaired in situations involving peers, high levels of emotion and substance use (Casey 'et al', 2008). One of the most cogent arguments for increased intervention into the lives of our adolescent children surfaces in the adolescent brain development literature. Theories of adolescent brain development concur on the importance of how delayed maturation of the prefrontal cortex (PFC) and other frontal regions relate to developmental immaturities in cognitive control, attentional regulation, response inhibition, and other relatively advanced cognitive functions (Spear, 2013). These developmental immaturities give way to increases in novelty seeking, sensation seeking, and risk taking, and greater per-occasion alcohol use (Steinburg, 2010). All this adds up to the need for more awareness around firearm safety and perhaps some further investigation into firearm access by "at risk" adolescents.

"At Risk" can mean Mental Disorder & Substance Use Disorder

Understanding the link between violent acts and mental disorder requires consideration of its association with other variables such as substance abuse, environmental stressors, and history of violence. Certain studies do not distinguish between mental illnesses, substance abuse/dependence or co-occurring mental illnesses and addictions. Violent behaviours are significantly elevated when a mental illness co-occurs with substance use. Monahan's (2002) study found that 31% of people who had both a substance abuse disorder and a psychiatric disorder (a "dual diagnosis") committed at least one act of violence in a year, compared with 18% of people with a psychiatric disorder alone. A Swedish study over 30 years found that those with Schizophrenia were slightly more likely to commit a violent offense than those in the general population. However, rates of violence increased dramatically (3X) in those with a dual diagnosis of Substance Abuse and the personal stressors and economic/social factors that accompany the dual diagnosis (Fasel et al, 2009). Fasel et al (2010) also made a similar finding as it related to Bipolar Disorder with Substance Abuse Disorder. A study of homicides in Finland reported that "the risk of committing a homicide was about 10 times greater for schizophrenia patients of both genders than it was for the general population and for men, schizophrenia with coexisting alcoholism increased the risk more than 17 times" (Eronen et al, 1996, p.85). In another study in Finland, an unselected birth cohort of 11,017 individuals was followed for 26 years. Men with schizophrenia without alcoholism were 3.6 times more likely to commit a violent crime than men without a psychiatric diagnosis. Men with both schizophrenia and alcoholism were 25.2 times more likely to commit a violent crime (Rasanen et al, 1998). The US National Epidemiologic Survey on Alcohol and Related Conditions

Data on mental disorders and violence was collected on 34,653 individuals. According to the analysis by Elbogen and Johnson (2008), "the incidence of violence was higher for people with severe mental illness, but only significantly so for those with co-occurring substance abuse and/or dependence" (p.155).

This and other research confirm that substance abuse is a key contributor to violent behavior and that the comorbidity of a mental disorder with a substance use disorder will often reveal a heightened risk for violence and also be detectable prior to any firearm violence in many cases. This comorbidity is not noted enough in training those on the front line who are tasked with observing people who exhibit behavior indicative of future violence. Additionally, it is imperative to focus on the Externalizing Group of Disorders and the Externalizing Factors which are patterns of behavior (observed) and/or symptoms (self-report) associated with increased likelihood of violent offending.

"At Risk" can mean Mental Disorder & Untreated Psychosis

A meta-analysis of 204 studies of psychosis as a risk factor for violence reported that "compared with individuals with no mental disorders, people with psychosis seem to be at a substantially elevated risk for violence." Psychosis "was significantly associated with a 49%–68% increase in the odds of violence" (Douglas et al, 2009).

In the three-site MacArthur Foundation Study of violence and mental illness, 17.4 percent of the patients were violent in the 10-week period prior to hospitalization, during which time they were not being treated, compared to an average of 8.9 percent for the five 10-week periods after hospitalization during which most of them were being treated (Steadman et al (1998). Community violence is inversely related to treatment adherence," i.e., the less medication individuals took, the more likely they were to become violent (Elbogen et al, 2006).

An English study of 1,015 forensic patients with severe mental illness ("functional psychosis") reported that the diagnosis of "schizophrenia was most strongly associated with personal violence" and that "more than 75 percent of those with a psychosis were recorded as being driven to offend by their delusions." The authors concluded that "treatment appears as important for public safety as for personal health (Taylor et al, 1998). In spite of this, the rate of stranger homicides committed by individuals with schizophrenia or chronic psychosis is extremely low. Psychosis is an externalizing behaviour which allows others to see that the individual is suffering from the symptoms that can include delusions, hallucinations, and psychomotor behavioural abnormality.

There is often an impaired ability to understand and perceive one's illness ("lack of insight" or "Anosognosia"), that often can accompany psychosis. It can be an indicator of a safety risk to oneself or to others.

"At Risk can mean Criminal Record & History of Violence

Because the age at act of first violence is a key risk factor, it is imperative to capture, in the criminal history, any violent act prior to becoming an adult. Laws that do not ask for a Juvenile Record may be missing data indicating a future risk for violence. It is also paramount to capture the breach of law from other countries where an applicant may have resided.

Of all solved firearm homicides in Canada committed between 1997 and 2014, (61%) were committed by an accused with a previous criminal record and (41%) had prior 'other violent offences' on their record. Because of this high rate of previous violence, it is also understood that many perpetrators using firearms do not have any valid firearms licence, However, there are still many who commit firearm homicide who do possess a valid licence (FMSS, 2017).

In the U.S., 91% of the patients who committed gun violence had previously been arrested, and it is likely that many of these people should have been legally precluded from possessing a gun on the basis of their criminal history, not their history of psychiatric hospitalization.

"At Risk" can mean Situational Factors & Risk Factors (Dynamic and Static)

MacArthur study, these papers have painted a more complex picture about mental illness and violence. They suggest that violence by people with mental illness — like aggression in the general population — stems from multiple overlapping factors interacting in complex ways. These include family history, personal stressors (such as divorce or bereavement), and socioeconomic factors (such as poverty and homelessness). Substance abuse is often tightly woven into this fabric,

There are predominant determinants of violence that are demographic and there are socio-economic factors such as being young, male and of lower socio-economic status. A history of experiencing or witnessing violence, or previous involvement with the criminal justice system are also contributing factors. Life stressors such as multiple losses are dynamic factors that I have been paying more attention to as I continue to work in the area of threat assessment.

"At Risk" can mean Suicidal Ideation & Behaviour

Violent and aggressive acts are not always directed against others, but can be more often committed against oneself. Suicide, not homicide, is the most significant public health concern in terms of guns and mental illness. Indeed, the small amount of research on firearm removal laws suggests that removal by police "was rarely a result of psychosis; instead, risk of suicide was the leading reason" (Parker 2010, p. 241). Certain mental health disorders, such as major depressive disorders, are strongly associated with suicide or attempted suicide. In 2017, six-in-ten gun-related deaths in the U.S. were suicides (23,854), while 37% were murders (14,542) according to National Vital Statistics (Heron, 2019).

Although the total number of suicides in Canada has remained relatively constant, firearm suicide as a percent of all suicides has declined significantly since 1976 (FMSS, 2017). Nevertheless, adolescents are especially vulnerable to the risks of having a lethal method accessible in the home. Impulsivity is an important factor in adolescent suicide.

Because firearms carry the highest case-fatality rate of all suicide methods, it is not surprising that the availability of a firearm in the home has been shown to be a strong risk factor for adolescent suicide completion (Miller 'et al', 2002).

Concluding Remarks

Firearms do not belong in the hands of "at risk" people. They should not be in the homes where there are "at risk" people residing. Too often we have attended firearms calls where a family member at high risk has gained access to the gun owner's firearm. In Canada we are working, not to control gun ownership but to ensure guns are owned in safety.

Over the past 20 years we have witnessed a number of "school shootings" in North America involving firearms being brought to school by children as young as 11 years of age. Access to these firearms is typically that they are found in the home and a parent's gun becomes a murder weapon. The majority of the perpetrators of school shootings are 14-18 years of age and many had symptoms of depression, personality disorder, and substance use disorders.

All this adds up to the need for more awareness around firearm safety and perhaps some further investigation into firearm access by "at risk" adolescents. Questions in an application to possess a firearm could read as follows:

Do you currently live with a child or adolescent who has threatened or attempted suicide or has suffered from or been diagnosed with substance use disorder or depression?

Do you currently live with a child or adolescent who is on a Court Ordered Probation?

Do you currently live with a person who is on any Court Ordered Restrictions?

The Firearms Act directs a Chief Firearms Officer to take into consideration the status of an individual's mental health over the previous 5 years. The Act requires an applicant to indicate if, over the past 5 years, they have threatened or attempted suicide, suffered from, or have been diagnosed by a doctor for, depression, alcohol, drug or substance abuse, behavioural or emotional problems. It authorizes investigating Chief Firearms Officers to gather information from a wide range of individuals regarding the mental health status and general situation of a licence applicant or holder. Chief Firearms Officers in Canada issue licence application refusals or licence revocations that are generally aligned with the broader, international research evidence on mental health and other factors related to safety risks to oneself or to others. A limited review of court decisions across Canada suggests that the evidence and arguments provided by Chief Firearms Officers to justify an application refusal or licence revocation tend to resonate with the courts.

In Canada, no attempt is being made to have law enforcement diagnose mental states; the focus is on the more observable behaviors and related risk factors. Police are trained to "detect" behaviour, not to "diagnose" behaviour and the focus must be on the more externalizing disorders and the more obvious symptoms associated with mental disorder.

Disclaimer

The views presented in this article are those of the author and not necessarily the official position of the Royal Canadian Mounted Police or the Canadian Government.

References

Austin, K. & Lane, M. (2018). The prevention of firearm injuries in Canadian youth. Paediatrics & Child Health 23;(1), p. 35–42.

Black, D.A. et al. (1999). Partner, child abuse risk factor literature review. National Network of Family Resiliency, National Network for Health, (available on the Internet at http://www.nnh.org/ risk).

Bourgon, G., & Bonta, J. (2004). Risk assessment for general assault and partner abusers (User Report No. 2004-04). Ottawa, ON: Public Safety and Emergency Preparedness Canada.

Boyce J, Cotter A; Canadian Centre for Justice Statistics. Homicide in Canada. (2012). Statistics Canada. Cat. no. 85-002-X Juristat ISSN 1209–6393 (Accessed August 11, 2018). Ottawa, Ont.

Casey BJ, Jones RM, Hare TA. (2011). The adolescent brain. Ann NY Acad Sci:111–26.

Cunningham, R.M., Walton, M.A., & Carter, P.M. (2018). The major causes of death in children and adolescents in the United States. New England Journal of Medicine. 379;25.

David, J-D. (2017). Canadian Centre for Justice Statistics. Homicide in Canada, 2016. Statistics Canada. Cat. no. 85-002-X Juristat ISSN 1209–6393 (Accessed August 28, 2018). Ottawa, Ont.

Douglas, KS, Guy, LS, Hart, SD (2009). Psychosis as a risk factor for violence to others: a meta-analysis. Psychological Bulletin 135:679–706.

Domestic Violence Death Review Committee. "Annual Report to the Chief Coroner: 2009." Available at: http://www.mcscs.jus.gov.on.ca/english/publications/pubs.html

Elbogen, E.B. and Johnson, S.C. (2009). The intricate link between violence and mental disorder. Archives of General Psychiatry. 66 no.2:152-161.

Elbogen EB, Van Dorn RA, Swanson JW et al (2006). Treatment engagement and violence risk in mental disorders. British Journal of Psychiatry, 189:354–360.

Eronen M., Tiihonen J., Hakola P. (1996). Schizophrenia and homicidal behavior. Schizophrenia Bulletin, 22:83–89.

Fazel, S. et al (2010). Bipolar disorder and violent crime: New Evidence from Population-Based Longitudinal Studies and Systematic Review (Sept. 2010). Archives of General Psychiatry: Vol. 67, No. 9, pp. 931–38.

Fazel, S.et al (2009). Schizophrenia, substance abuse, and violent crime (May 20, 2009). Journal of the American Medical Association: Vol. 301, No. 19, pp. 2016–23.

Fazel, S. & Grann, M. (2006). The population impact of severe mental illness on violent crime. Am J Psychiatry 163(8):1397–1403,16877653

Firearms Research, FMSS (2017). Criminal Justice and health-related firearms statistics, Canada selected topics. Unpublished document, RCMP Canadian Firearms Program.

Hare, R. D. (2003). The Hare Psychopathy Checklist-Revised. 2nd Edition. Toronto, ON: Multi-Health Systems. (www.mhs.com)

Harris, G.T., Rice, M.E., & Quinsey, V.L. (2016). Violence Risk Appraisal Guide-Revised, 2013: User Guide. Data Services, Queen's University Library.

Heilbrun. K. et al. (2017). Risk assessment for future offending: The value and limits of expert evidence at sentencing. Court Review Vol. 51, p.122

Heron M. Deaths: Leading causes for 2017 (2019). National Vital Statistics Reports; vol 68 no 6. Hyattsville, MD: National Center for Health Statistics.

Hilton, N. Z., Harris, G. T., Rice, M. E., Houghton, R. E., & Eke, A. W. (2008). An in-depth actuarial assessment for wife assault recidivism: The Domestic Violence Risk Appraisal Guide. Law & Human Behavior.

Hilton, N. Z., Harris, G. T., Rice, M. E., Lang, C., Cormier, C. A., & Lines, K. J. (2004). A brief actuarial assessment for the prediction of wife assault recidivism: The Ontario Domestic Assault Risk Assessment. Psychological Assessment, 16, 267-275.

Johnson H. (1996). Dangerous domains; Violence against women in Canada. Nelson Publishing, Ontario.

Keighley, K. 2017. "Police reported crime statistics in Canada, 2016." Juristat. Statistics Canada Catalogue no. 85 002 X.

Knoll, James L. & Annas, George D. (2016). Mass shootings and mental illness: Gun violence and mental illness. Chapter 4. Liza H. Gold and Robert I. Simon, Eds, American Psychiatric Association: Arlington, VA.

Kropp, P. R., Hart, S. D., Webster, C. D., & Eaves, D. (1995). Manual for the Spousal Assault Risk Assessment Guide (2nd ed.). Vancouver, BC: British Columbia Institute on Family Violence.

Monahan, J. (2002). The MacArthur Studies of Violence Risk. Criminal Behaviour and Mental Health. 12 no.13 (supplement): S67-S72.

Monahan J. Mental disorder and violent behavior. American Psychologist 1992; 47: 511–521.

Rasanen P., Tiihonen J., Isohanni M. et.al. (1998). Schizophrenia, alcohol abuse, and violent behavior: a 26-year follow-up study of an unselected birth cohort; Schizophrenia Bulletin 24:437–441.

Renno ´ Santos M, Testa A, Porter LC, Lynch JP (2019) The contribution of age structure to the international homicide decline. PLoS ONE 14 (10): Published: October 9, 2019 <u>https://doi.org/10.1371/journal.pone.0222996</u>

Spear, L. (2013). Adolescent Neurodevelopment. Journal of Adolescent Health. Volume 52, Issue 2, S7 - S13.

Spear, L. (2000). The adolescent brain and age-related behavioral manifestations. Neuroscience and Biobehavioral Reviews 24: 417–463.

Statistics Canada (2016). Statistics Canada, Canadian Centre for Justice Statistics, Homicide Survey. https://www150.statcan.gc.ca/n1/pub/85-002-x/2018001/article/54893/tbl/tbl3.10-eng.htm. (Accessed 29August2018).

Steadman, H.J., Monahan, J., Pinals, D.A., Vesselinov, R., Robbins, P.C. (2015). Gun violence and victimization of strangers by persons with a mental illness: Data from the MacArthur violence risk assessment study. Psychiatr Serv;66(11):1238–41.

Steadman, HJ, Mulvey, EP, Monahan, J et al (1998). Violence by people discharged from acute psychiatric inpatient facilities and by others in the same neighborhoods. Archives of General Psychiatry 1998; 55:393–401.

Steinberg L. (2010). A dual systems model of adolescent risk-taking. Developmental Psychobiology; 52: 216–24.

Taylor PJ, Leese M, Williams D et al (1998). Mental disorder and violence. British Journal of Psychiatry 172:218–226.

United States Department of Justice, Federal Bureau of Investigation. (January 2020). Crime in the United States, 2019. Retrieved (April 2, 2020), from (https://www.fbi.gov/news/stories/2019-preliminary-semiannual-uniform-crime-report-released-012120).

United States Department of Justice, Federal Bureau of Investigation. (September 2019). Crime in the United States, 2018. Retrieved (April 2, 2020), from (https://www.fbi.gov/news/pressrel/press-releases/fbi-releases-2018-crime-statistics).