Firearm Availability and Suicide in Canada: Examining the Effects of Gun Control, Unemployment, Divorce and Sex on Firearm Suicides from 2009-2020

by

© Hayley McLellan

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Abstract

Firearms are the most lethal method used in suicides. However, firearm legislation does not change for the purpose of reducing suicides. Between 2009 and 2020, Canada implemented firearm legislation to regulate the use, storage and purchasing of firearms. Bill C-19 removed the requirement to register certain firearms, Bill C-42 held stronger provisions in prohibiting the possession of firearms of those who have been convicted of a domestic violence offence, Bill C-71 extended background checks and Bill C-21 was introduced to classify certain firearms as prohibited after a mass shooting in Nova Scotia. I examined these legislative changes using secondary data from Statistics Canada to determine if gun control reduces the rate of firearm suicides. Statistical analysis included difference in differences, which examined firearm suicides before and after Bill C-19 and Bill C-42 were enacted. As Bill C-71 and Bill C-21 are too recent to fully examine their effects, they were not included in the full statistical analysis. The rate of firearm licensing compared to the rate of firearm suicides was also examined per province to determine if firearm ownership increases firearm suicide rates. It was found that there was not a significant increase in suicides, both firearm and other, after each enacted legislation. However, there was a slight increase in firearm suicides, even more so when divorce, unemployment rates and sex were added. Firearm legislation itself may not reduce firearm suicide rates, which means quick solutions from the government alone in response to specific instances of suicides and clusters of suicides will not successfully reduce the rates. Therefore, I recommend educational interventions, social welfare systems and healthcare systems work together in a multifaceted approach to tackle this issue.

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CDC	Centers for Disease Control and Prevention
CI	Confidence Interval
DiD	Difference in Differences
FAC	Firearms Acquisition Certificate
ICD	International Classification of Diseases
MAID	Medical Assistance in Dying
RCMP	Royal Canadian Mounted Police
WHO	World Health Organization

Chapter One: Introduction

Firearm suicides are an important public health issue to examine. As firearm ownership in Canada is at a rate of roughly 35 per 100 individuals aged 18 and older, and firearm suicides account for 75 percent of all firearm-related deaths in Canada, there is a serious firearms issue that stems beyond crime-related incidents (Beattie et al., 2018; Statistics Canada, 2018). Although discourse surrounding firearm suicides exists, much of the discussion has been through public health, political, and psychological perspectives. Governmental reports, such as *The Federal Framework for Suicide Prevention* (2018), have outlined strategies for suicide prevention, which include mental health supports and raising public awareness. However, these reports fail to explore firearm suicides and the environmental and social factors that provide firearm accessibility and increase the risk of suicide.

In published research, literature on firearm injuries is crime-focused despite three quarters of firearm deaths consisting of suicides (Beattie et al., 2018). Perhaps this is due to the complexity of understanding suicide and what causes it, while homicides are already thoroughly studied and understood. Nonetheless, the literature that does exist on firearm suicides rarely produces in-depth examinations on the situational determinants and availability of firearms through legislation and accessibility. Furthermore, many of the publications are from an American perspective which hold a different view on firearms and their role in society compared to Canada (Ferguson & Koziarski, 2019). Therefore, it is not possible to use the same understanding of firearms in the United States when discussing the Canadian context. Nonetheless, the research that does exist in

Canada still lacks the sociological understanding of firearms in society, their accessibility, gun control and how that relates to firearm suicides. This is a concern because the importance of social and environmental factors, such as gender, race or ethnicity, religion, unemployment, social integration, mental and physical wellbeing and availability of methods is often overlooked, yet these factors contribute to both homicidal and suicidal acts relating to firearms, the reasons of which will be discussed further in a subsequent section. Additionally, much of the literature that does exist on this topic predates the 2000s and provides a challenge for understanding firearm-related suicides in the modern world as legislation, and overall accessibility, changes. Without recent studies on Canadian firearm-related suicides, there cannot be effective prevention strategies and legislative change that targets suicides as a prevention method.

Through a legal lens, multiple legislative changes have occurred surrounding firearms and their accessibility in Canada. However, none have been enacted with the explicit intent to reduce firearm-related suicides (Royal Canadian Mounted Police [RCMP], 2020). This seems to be because of the complexity of understanding the root causes and risk factors for firearm suicides and how they are seen as a public health issue (American Public Health Association [APHA], 2018). There are multiple risk factors for suicide that exist, such as history of mental illness, feelings of being alone, job loss, and alcohol or drug use (American Public Health Association [APHA], 2018). Therefore, governments enact other preventative measures, such as promoting safe storage and national suicide campaigns to curb firearm suicides without changing legislation for the same reasons. Although firearm suicide prevention measures using other strategies may work for some (e.g. economic support, access to care and education), it is important to

identify what are commonly referred to in the literature and practice as “risk patterns” and use preventive measures through multidisciplinary collaboration, including changes in firearm legislation. Individual risk factors are important. However, identifying risk patterns from those factors can be more useful in screening and prevention tactics (Osborne et al., 2021). Firearm suicides have unique risk factors that contribute to the possibility of an individual using firearms as a method for suicide. Factors for suicide in general can include mental health problems, medical conditions, prior attempts, substance use, job loss, financial stress, experiencing forms of violence such as abuse, and intimate partner problems (Logan et al., 2011). Risk factors for firearm suicides can include firearm ownership, access to firearms, and being a man (Miller & Hemenway, 2008; Varnik et al., 2008). Although any one of the general risk factors can increase the likelihood for suicide, firearm suicide risk factors tend to be co-occuring factors. Therefore, the use of preventative measures might be more effective by addressing multiple risk factors, or risk patterns, within specific populations (Logan et al., 2011). These preventative measures (e.g. reducing access to firearms, ensuring access to care and treatment, promoting social connectedness and support, and enhancing life skills and resilience) are important methods. However, as risk patterns include multiple factors, it is important to have multidisciplinary collaboration between medical and social service professionals, media, law enforcement, the justice system, teaching professionals and the community (Yip & Law, 2012).

Much of the legislative change surrounding firearms now has been due to previous shooting incidents and concerns and debates on the accessibility of firearms for homicides and accidental shootings (Bennett et al., 2022). One country that this concern stems from

is the United States. When a mass shooting occurs in the United States, it usually becomes widespread news (Meindl & Ivy, 2017). Government leaders can then reference this incident and make claims that they will change their firearm laws so that the shooting in the United States will not happen in their country. Previous and current Prime Ministers, including Justin Trudeau, have made claims such as this and acted on them by enacting new legislation to curb firearm-related incidents while adjusting legislation that already exists to fit the security needs of the country.

For example, Bill C-19 was enacted by Stephen Harper in 2012, which removed the requirement to register firearms that are neither prohibited nor restricted. Bill C-42 was enacted by Justin Trudeau in 2015 and required first-time license applicants to participate in classroom firearms safety courses and stronger provisions relating to prohibiting the possession of firearms of those who were convicted of an offence involving domestic violence, amongst other changes. In 2019, Bill C-71 was enacted by Trudeau to extend background checks before obtaining a firearm and require authorization to transport restricted and prohibited firearms to locations other than a shooting range (Royal Canadian Mounted Police [RCMP], 2020). In 2020, certain firearms were classified as prohibited after a mass shooting in Nova Scotia where Gabriel Wortman murdered 22 individuals. He did not have a firearms license and therefore smuggled the firearms into Canada with the help of at least two individuals from the United States (McMillan & MacIvor, 2022). These are examples of adjusting and enacting legislation to protect citizens from firearm crimes. However, the common theme among these changes is that none of them were enacted with the intent to also reduce firearm suicides.

Despite the lack of recognition of firearm suicides in the past, a notable recent proposal for change in Canadian legislation is Bill C-21, which prevents individuals from bringing new handguns into Canada and buying, selling and transferring within the country. Bill C-21 also takes away firearms licenses for those involved in acts of domestic violence or criminal harassment such as stalking, fighting, gun smuggling and trafficking. If enacted, the new legislation will also address intimate partner violence, gender-based violence and self-harm by creating a "red flag" "yellow flag" law, which allows courts to require an individual who are considered a danger to themselves and others by surrendering their firearms. This is a step in the right direction regarding the factors that influence firearm deaths. However, there is a long way to go in terms of examining social factors (e.g., age, gender, ethnicity, and social integration), environmental factors (e.g., availability of a firearm) and socio-legal factors (e.g., effectiveness of gun control on firearm suicides) that influence firearm suicide rates (Dandurand, 1998). Examining these factors in conjunction with each other will ensure that future policy changes on firearms are considering the accessibility of firearms for means other than homicide and accidental shootings. Furthermore, understanding the factors that contribute to firearm suicides will allow for effective suicide prevention that extends beyond public awareness and access to basic mental health care.

From a theoretical perspective, Durkheim (1897/1951) introduced a theory of suicide that examined the social roots of the phenomenon. He argued that social integration, defined as the degrees to which individuals interact and connect within a community, affects an individual's propensity for suicide. Durkheim also argued that regulation, which is the moral demand that is placed on an individual who belongs to a

certain group, can also affect suicide rates. These two dimensions underline Durkheim's development of his typology of suicide, which outlined the levels of social integration and regulation that can affect the suicidality of an individual: egoistic, altruistic, anomic, and fatalistic suicides. Egoistic and anomic suicides derive from not enough social interaction and regulation, while fatalistic and altruistic suicides derive from too much social interaction and regulation. Durkheim's (1897/1951) typology is the theoretical foundation for this thesis in understanding social factors and how they connect to integration and interaction, which then influences the possibility of suicide. Therefore, this typology is discussed in detail in the literature review of this thesis.

Durkheim (1897/1951) also developed a theory of social facts which consist of society's behaviour, its disposition on various issues and external forces that compel an individual to conform. Therefore, Durkheim developed the idea of social facts to understand social behaviour. In explaining behaviours adopted by individuals in a society and how it ties to gun control, the main reasoning is from external factors that are responsible for the conduct an individual would adopt to fit into society. This means that firearm legislation is an external factor, influenced by the government, to manage the conduct of an individual within that society. This is a direct example of social regulation as per Durkheim's teachings. That is why when an event happens involving firearms, governments enact new legislation to further attempt to control the conduct of individuals and lower rates of firearm-related incidents. This idea will also be discussed further in this paper.

The overall purpose of this thesis is to examine how social factors, more explicitly, sex, unemployment, divorce, firearm ownership and licensing. affect the

annual suicide rate in Canada. It will aim to understand the effect that firearm legislation has had on firearm suicides from 2009 to 2020, although the primary reason for the enactment of such legislation was not to reduce firearm suicides. Furthermore, the examination of social factors will provide a better understanding of all facets of suicide and how these social and legal factors contribute to firearm suicide rates. By examining the relationship between social factors, firearm ownership and suicide through a sociological lens, this thesis can aid in creating targeted prevention efforts to address areas with high rates of firearm suicide, inform research on community and individual-level risk factors, and fill the gap in the literature on this issue as there is not a significant amount of information on or conversation about this stigmatized and misunderstood social phenomenon. I argue that firearm legislation enacted in 2012, 2015 and 2019 were not associated with a reduction in firearm suicide rates in Canada. To understand this based on Durkheim's (1897/1951) theory of suicide, integration and regulation, I aim to address two main research questions:

1. How do changes in firearm legislation influence firearm suicide rates in Canada?
2. What sociological factors (i.e., sex[1], divorce and unemployment rates) contribute to firearm suicides in Canada?

This thesis used secondary data analysis to examine Canada's gun control before and after three different periods of legislative reform: Bill C-19 in 2012, Bill C-42 in 2015, and Bill C-71 in 2019 as these are the three most significant enactments in firearm legislation during that period. Prominent sociological factors such as divorce rates,

[1] Data by Statistics Canada uses sex as their variable instead of gender. Therefore, gender identity cannot be examined as a sociological factor because it is biological in this case.

unemployment rates and sex were also examined based on existing studies that have found high divorce and unemployment rates as having strong effects on suicide, as well as males choosing firearms as a method for suicide more commonly than females (Hasselback et al., 1991; Leenaars & Lester, 1989; Varnik et al., 2008).

In Chapter Two, I explore suicide in a broader social and historical context. I examine change in discourse surrounding the term suicide and theories surrounding the causes and effects of suicide that have formed in antiquity and modern times. Furthermore, I examine factors influencing suicidality such as race, religious and socioeconomic factors. Lastly, I examine suicide methods to provide an understanding as to why individuals choose these methods, specifically firearm suicides, as that is the focus of this thesis. I also consider the history of firearm legislation and its purpose and influence on suicide rates in Canada.

In Chapter Three, I describe methods employed to explore the research questions listed above. These methods include quantitative analysis of secondary data provided by Statistics Canada on firearm suicide, unemployment and divorce rates grouped by province and sex for thorough analysis. This method seeks to capture trends in firearm suicides before and after specific legislative changes outlined above, coupled with sociological factors that may influence firearm suicide rates.

Chapter Four will summarize the findings that emerged from the multivariate analyses outlined in Chapter Three. This includes descriptive statistics and Difference in Differences (DiD) models to understand the trends in suicide rates before and after specific legislative changes.

Chapter Five discusses the limitations of this secondary data analysis and offers suggestions for future research. Chapter Five also examines the practical and theoretical implications by focusing on the impact that this research will make in the creation of suicide prevention strategies such as community-based programs, legislative reform targeted specifically to firearms and their use as a method for suicide, and its contribution to the current sociological debates and research. This also includes implications in areas such as health, social welfare and education.

Lastly, Chapter Six offers a conclusion that ties together the ideas presented in this thesis by summarizing key points.

Chapter Two: Suicide in a Sociological Context

Suicide is the act of an individual ending their own life and consists of a complex interaction between many vulnerabilities, risk factors, and triggers in a person's life (Chandler, 2019). Although death by suicide is most often seen as a psychological phenomenon, suicide is also a social phenomenon as the individual could be experiencing a strained relationship between themselves and society. Furthermore, suicide can be influenced by social and economic factors, such as differences in cultures, social isolation, limited community resources and poverty (Chandler, 2019).

According to a 2021 report by the World Health Organization (WHO), roughly 700, 000 individuals die by suicide each year. However, these numbers are underestimated due to stigma, the illegality of suicide in some countries, and the classification of suicides as unintentional injuries or accidents. Across the world, there is a difference in the percentages of death by suicide in reported statistics by WHO (2021). In South Korea, the percentage of suicides increased from 2 percent in 1990 to 5 percent. In Greenland, suicide deaths decreased from almost 14 percent in 1990 to 7 percent. However, Greenland's rates continue to be one of the highest in the world (WHO, 2021). Most countries in Europe and Asia have seen a decline in suicide rates while other areas, such as North America, have varied over the years (WHO, 2021). Many of these differences are attributed to cultural differences and social factors such as race, religion, socioeconomic status, and social integration.

This chapter seeks to outline the roots and understanding of suicide through its history, discourse, and research in the sociological sphere, as well as firearm legislation.

This background sets the stage for the analysis that ensues, which examines suicide through social and legislative processes and how they influence suicide rates in Canada.

A Brief History of Suicide

The first recorded instance of suicide is uncertain. However, some historical texts discuss the idea of suicide dating back to 1500 BCE, while others highlight Ancient Greece and their melancholy toward life that made its end desirable (Gourevitch, 1969; Papadimitriou et al., 2007). Although the understanding and acceptance of suicide was not widespread, many well-known citizens during Ancient Greece and the Classical Age ended their lives for patriotic, heroic and egocentric reasons. Empedocles (494 - 434 BCE) was said to have jumped into Mount Etna, an active volcano, so that citizens would believe he vanished and turned into an immortal God (Holderlin, 2008). Socrates (470 - 399 BCE) was forced to end his own life by drinking poison after he was found guilty of corrupting youth and refusing to recognize the Gods (Papadimitriou et al., 2007). Disappointed by the outcome of the battle of Chaeroneia, Isocrates (436 - 338 BCE) starved himself to death in despair (Papadimitriou et al., 2007). These instances were not uncommon in the 5th and 4th centuries BCE, although Plato (424 - 347 BCE) and Aristotle (383 - 322 BCE) disproved of the act. They argued that men are property of the state and have a responsibility to others, therefore killing oneself was cowardly (Papadimitriou et al., 2007). In Rome, there was more concern with the economics of suicide rather than the legality of it. For example, if an accused person ended their life before trial and conviction, the state would be unable to seize the individual's property and gain a profit from their belongings. If a slave ended their life within six months of

being purchased, their master could receive a full refund from the former owner. Although these reasons for suicide were considered inconveniences to the economy, the Romans did approve of patriotic suicides as an alternative to dishonor. The Stoics, a philosophical sect that examined logic and personal ethics, claimed that patriotic suicides were considered virtuous in that they were guided by reason and conscience (Englert, 1990). However, there was a distinct line between virtuous suicide and suicide for selfish reasons, such as ending one's life over a lover.

After the fall of the Western Roman Empire, the Christian church began to excommunicate those who attempted suicide, and those who were successful were buried outside of sacred graveyards (Wright, 2017). Suicide was deemed a sin and Louis XIV of France made sure to exacerbate the situation. In 1670, he issued a criminal ordinance that stated suicide is treason against himself and God. Therefore, the bodies of those who died by suicide were to be dragged through the streets face down, hung by their feet, and denied burial.

Throughout history, suicide has been labeled a mortal sin, altruistic and sacred in different cultures. However, most religions have viewed suicide as a mortal sin thanks to their theology and the impression that ending one's own life takes away a life God should have control over. Thomas Aquinas (1225 CE-1274 CE), an Italian philosopher, summarized this idea by stating that suicide goes against the natural order of things (Summa Theologica, 1485/1911). He argued it is the nature of all things to survive and that suicide was automatically a sin against God because only He had the right to bring death. During this time, medieval people struggled to align Christian beliefs with the implications of dying by suicide, which caused a lack in understanding why someone

would choose suicide. This led to punishments after death for those who died by suicide. For example, Christian burials were not given to those who died by suicide (Seabourne & Seabourne, 2001). Furthermore, there were prohibition of masses and denied access to holy grounds for burials of those who died by suicide. Some practices were far more gruesome, with bodies buried at crossroads with a stake through the heart or dragged through the streets face down and hung by their feet (Gates, 1988).

The beginning of the Enlightenment during the seventeenth and eighteenth centuries changed the perspective of suicide and questioned the traditional religious attitudes toward the phenomenon. Figures such as Voltaire (1694–1778) and David Hume (1711–1776) argued it was acceptable under some conditions, and in Europe, the decriminalization of suicide had slowly begun. Voltaire (1764/1901) argued that suicide is a cultural phenomenon and associated it with a lack of engagement. Simply put, he implied that the remedy to this is to have something to do. Hume agreed with this, although he had much more to say than Voltaire on suicide and religion. Hume (1799/2004) argued that it is important to respect individual autonomy, including the choice of when to die. He stated that humans may use their own free will given to them by the gods just as nature carries on without considering humans. Therefore, an individual does not experience the wrath of God when they end their life because He has given them this power regarding their own life. Therefore, choosing to end one's own life does not harm society, and when they are gone, they do not benefit from society anymore, and society does not benefit from them (Hume, 1799/2004). Ahead of his time, Hume also claimed that it is evident that there may be situations in which it is desirable to die by suicide. Sickness, old age, and other situations that make life worse than death can justify

ending one's own life. However, it is crucial to consider every option and assess the future before deciding on it. One can see this condition more prominently today with the new medical assistance in dying (MAID) law, Bill C-7 in Canada, which allows physicians to assist in the suicide of an individual suffering from a grievous and untreatable medical condition.

In the 19th century, the study of suicide (Suicidology) came to fruition thanks to Émile Durkheim's 1897 study of the phenomenon. From his study, Durkheim formulated a theory of suicide that is still considered one of the quintessential theories in Sociology, over one hundred years later. His theory will be examined in-depth later in this chapter. However, Durkheim was a major contributor to suicidology by discussing suicide in relation to social factors by classifying suicidal behaviour into altruistic, egoistic, fatalistic, and anomic groupings of suicide. By the nineteenth and twentieth centuries, the examination of suicide also began in a clinical setting. Researchers and physicians described suicide as an outcome of insanity and examined it psychologically. Psychiatry as a discipline also emerged, which included experts capable of diagnosing and treating melancholy, hysteria, and other factors responsible for suicide (Bähr, 2013). During this time, governments began to collect statistics on suicide to aid in informing public policy. Although the examination of birth, marriage and death rates date back to the eighteenth century, the field of moral statistics in the 1830s examined instances such as crime, alcoholism, and suicide (Eghigian, 2018). As interest in the study of suicide grew exponentially in the nineteenth century, the incidence of suicide was rising as well. In his 1881 study of the topic, Thomas Masaryk stated that suicide was the sickness of our time, although researchers debated on why there was a rise in suicide rates. Masaryk (1881)

theorized that suicide rates increased as religiosity decreased, and modernization increased. Enrico Morselli (1852–1929) attributed higher rates of suicide to unsatisfied desires and unregulated self-gratification. Thanks to the works of sociologists at the time, suicide was increasingly viewed as a product of alienation, anomie, and other social factors. Over time, the discourse surrounding suicide changed from a mortal sin to a public health issue as its legality became widespread across much of the Western world. The examination of suicide through statistics, psychology, public health, and policy increased as rates fluctuated (Eghigian, 2018).

Sociological inquiry of suicide has changed throughout the years. Some argue that suicide is a biological, psychological, or sociological problem. However, it is related to all three. The biopsychosocial model asserts that one factor alone is insufficient (Rodríguez-Otero et al., 2021). It is important to examine health and disease through genetics, mental health, and their social context. Although this model exists, it skews toward a more medical perspective. Therefore, it is just as important to thoroughly understand the sociological context of suicide and what social factors have an effect on suicide rates. Since the beginning of sociology as a discipline, suicide has been an important subject for methodological debates and advancements within the field. Émile Durkheim's *Le Suicide: Etude de Sociologie* (1897/1951) has a certain status within sociology for using sociological methods and theory to understand suicide through a view that was neither biological nor psychological. Many sociological researchers tend to draw on Durkheim's work in their theories and examinations of suicide. However, despite the contribution from Durkheim and his seemingly grand existence throughout modern research, sociological work on suicide is still uncommon. A review of publications in

sociology journals in the United States found that only 3 percent addressed suicide (Wray et al., 2011).

Within suicidology journals, psychological research on suicide still dominates. Although there was an influx of sociological work on suicide in the 1970s (most likely because of its decriminalization in Canada in 1972), there was an increase in research and attention from medical professionals, policymakers, legislators, and psychologists near the end of the 20th century (Leenaars, 2000). From this focus came the Lalonde (1974) Report, which acknowledged suicide as a health issue and openly talked about the stigma attached to the act and experienced by survivors and bereaving families. In 1984, Health Canada put forth recommendations for suicide prevention, and the Canadian Association for Suicide Prevention was formed in 1985. Two years later, Health and Welfare Canada and the National Task Force on Suicide in Canada produced a national report that recommended identifying at-risk groups, evaluating suicide prevention programs, and creating federal, provincial, and territorial policy guidelines. Unfortunately, there was little action after the report's release, and the recommendations for suicide prevention were suggested again in 1991 (Leenaars, 2000). From there, funds were committed to the federal budget to aid in suicide prevention strategies, recommendations for mental health, and political parties such as the NDPs and Liberals have supported these national strategies.

Although public health and policy initiatives have shaped the way Canada handles the suicide crisis, examining suicide through medical and psychological lenses has continued to overshadow sociological investigations of suicide and the factors associated with the act. Research in these fields seldom use sociological insights and frame the

problem through an individualistic perspective. Understanding individual risk factors is important in suicide research. However, it does not examine all facets of the phenomenon. This is problematic for sociological research as biomedical and psychiatric perspectives create preventative models with little consideration for societal factors. Stack and Gundlach (1994) examined suicide through sociological and psychological perspectives. They stated that it is challenging to study suicide through psychological means as the victim is unavailable for study. In sociological surveys, the respondents are alive, and the questions cover a wide range of social factors extending beyond the individual (Stack and Gundlach, 1994). This is a fair statement as psychological inquiry focuses solely on the thoughts and feelings of the individual and not the external micro and macro factors that influence an individual's tendency to suicidality and suicide. Suicidology directly engages the biological, psychological, and sociological factors of suicide. However, these disciplines continue to work exclusively. Focusing on a more interdisciplinary approach to understanding the factors that influence suicide rates creates promise in the suicidology field. However, with an imbalance of published research between the three factions of the biological-psychological-sociological trifecta, studies of suicide through a sociological perspective must catch up. As Chandler (2019) argues, a revitalization of suicidology is required, which utilizes psychology, sociology, and other disciplines in working together to examine and understand the body, mind and social contexts in which suicide takes place. Suicidology is a growing field, and the contribution of sociological advancements within this sector will provide enduring debates within the understanding of suicide through a social context and the creation of theories of suicide through a sociological context.

Today, suicide carries a social and moral meaning in all societies at both the micro and macro levels, which adds to the complexity of the phenomenon. Suicide rates have been known to correlate with various forces such as cultural, political, and economic factors (Giddens, 1964). Therefore, understanding these social factors and their effect on individual and societal experiences can provide a clearer picture of suicide risk, which then informs suicide prevention. However, these factors fail to thoroughly consider the availability of suicide methods such as access to firearms, which are the most lethal method (Miller & Hemenway, 2008; Shenassa, Catlin & Buka, 2003; Spicer & Miller, 2000). It is important to disassemble the phenomenon of suicide into its parts. Researchers must examine its history, the social forces that drive an individual to choose suicide, as well as the methods available to them if the attempted remedy of these social factors is not sufficient.

Discourse Surrounding the Use of the Term "Suicide"

The word "suicide" has been one of the most taboo words in the English language. It is often indirectly referred to or outright denied due to the heaviness of the word and the stigma attached (Padmanathan et al., 2019). However, discourse on suicide in recent years has been changing thanks to increased strategies that aim to address the language of suicide and the negative connotations that are embedded in our vocabulary (Padmanathan et al., 2019). However, there is still a long way to go to maintain neutrality and compassion when discussing suicide in all forms.

"Commit suicide", "completed suicide", and "failed suicide attempt" are terms still heard in various forms of platforms including media, books, articles, and in

conversation. Considering these phrases, one might argue that there is nothing alarming as they simply describe a tragic act. However, these descriptions are detrimental to the discourses of suicide as the undertones frame suicide as a crime. Earlier definitions of the term even described suicide as murder and homicide of the self. Therefore, the recommended terminology to use when discussing suicide is "die by suicide" (Olsen, 2011). Although new and not widely used yet, this terminology is neutral and compassionate and removes blame from the individual. Stating that an individual died by suicide is the same terminology as explaining that an individual died by cancer or a heart attack. It is not appropriate to say, "committed cancer" or "committed a heart attack". Therefore, it is inappropriate to say an individual "committed" suicide.

The implications for using negative terminology such as the terms outlined above can create numerous issues, beginning with stigma and labelling. Misunderstanding, ignorance, and fear are at the root of suicide stigma (Wenz, 1978). The criminal undertones of the discourse alone increase the stigma, while myths associated with the act also contribute. This can include the notions that individuals who end their own lives are attention-seeking, cowards or selfish. Furthermore, suicide attempts are considered a form of deviant behaviour, which means individuals are labeled for their suicidal actions (Wenz, 1978). The labeling theory suggests that individuals internalize labels based on how others view their actions. Therefore, being called selfish and a coward for attempting suicide can cause an individual to feel negatively about themselves (Wenz, 1978).

Using more neutral language opens the discussion of suicide and allows for genuine sympathy, sharing and healing with those in bereavement. Unfortunately, there is much perpetuation of these incorrect terms in the academic literature on suicide. Phrases

such as “committed suicide” and “failed suicide attempt” are still commonly used in many forms. The prevalence of these negative phrases in current writings may be due to the sheer unawareness of the insensitivity, or the number of different disciplines that create a multiplicity of terms (Silverman, 2006). As vocabulary varies from discipline to discipline, there is a lack of consensus on vocabulary within suicidology. Therefore, the simple solution to these issues is to ensure academics, media, educators, and the like are informed that these negative phrases are no longer acceptable (Silverman, 2006). More neutral terms must take their place.

Methods of Suicide in Canada and Around the World

Although society has changed, the methods used for suicide have remained relatively the same. Common methods used today include suicide by hanging, poisoning, jumping from a height and firearm (Ajdacic-Gross et al., 2008). Hanging was the most common suicide method in pre-industrial societies and still is the most common method of suicide in most countries (Ajdacic-Gross et al., 2008). In a study by WHO (2021), 90 percent of men and 80 percent of women in Eastern Europe used hanging as a method for suicide in countries such as Estonia, Latvia, Lithuania, Poland, and Romania. As one might expect, due to the United States' extremely high rate of gun ownership, firearm suicide was the most common suicide method in the study. However, this method was also found frequently used in other countries such as Argentina, Switzerland, and Uruguay (WHO, 2021). Jumping from a height was predominant in urban societies such as Hong Kong SAR, Luxembourg, and Malta. In Latin American countries such as El Salvador, Nicaragua and Peru, Asian countries such as the Republic of Korea and

Thailand, and Portugal, pesticides poisoning was the most frequently used method. Poisoning with drugs was also most predominant among women in Canada, the Nordic countries, and the United Kingdom. However, although studies confirm hanging is the most common suicide method, the proportion of hangings decreases when pesticide or firearm suicide increases. Generally, pesticide suicide predominates in Asian countries, while firearm suicides are in the Americas and some European countries, with the highest frequency in countries with high firearm ownership (WHO, 2021).

In Canada, the three most frequently used methods for suicide are hanging, poisoning, and firearms (Statistics Canada, 2022). National Statistics Canada data from 2018 reveal that hangings are the most frequently used method of suicide in Canada, followed by poisoning in second and firearms in third. Although firearms are not the primary method of dying by suicide in Canada, firearm suicides account for roughly 75 per cent of all firearm-related deaths in Canada; this is one of the highest rates among developed countries (Beattie et al., 2018; Statistics Canada, 2018). In a recent 2021 study, Liu et al. (2021) found an increase in suicide by suffocation in both males (4.1 percent per year) and females (2.1 percent per year). With poisoning suicides, rates had decreased since 1981 by an average of 2.2 percent for females and 2.1 percent for males. Lastly, the rate of suicide by firearm fell by 5.2 percent for females and 3.1 percent for males, and after roughly 2008, the rates did not change significantly (Liu et al., 2021).However, in age-specific mortality rates, suicide by firearm rates increased significantly (2,4 percent per year) from 2008 for males aged 20-34 years. Changes in firearm suicide rates were not significant for females (Liu et al., 2021).

In the United States, the most common suicide method is firearms (50.5 percent), followed by suffocation (28.6 percent) and poisoning (12.9 percent) (CDC, 2021). Per the CDC, firearms are the most frequently used method among males at 55.9 percent, with firearms as the primary method among all age groups. For females, the data is a bit surprising compared to other countries. Firearm suicides are also the most common suicides among females at 31.5 percent. However, suffocation is the primary method among younger female groups ages 15-44 and changes to poisoning in 45 and older age groups (CDC, 2021). As the United States has an estimated 120.5 firearms per 100 people aged 18 and older, it is no question why firearm suicides are the most common method of suicide in the country (Small Arms Survey, Geneva, 2017). Readily available firearms facilitate this act, planned or unplanned, and increase suicide frequency.

Countries in Europe have similar trends in suicide methods. A study of 16 countries by Varnik et al. (2008) found that suicide by hanging was the most predominant method of suicide. Self-poisoning was the second-highest suicide method, with firearm suicides in third. As seen in other countries, males had a 7.2 times higher risk of using a firearm for suicide and a 1.5 times higher risk of hanging than females (Varnik et al., 2008). However, poisoning by drugs and drowning suicides were more frequent in females, and males were more likely to choose lethal methods like hanging and firearms compared to females (Varnik et al., 2008).

In Eastern countries such as Korea, Lim et al. (2014) examined suicide methods among those who attempt suicide and those who die by suicide. They found that hanging (52.2 percent) was the most common for those who died by suicide, followed by jumping from a height (17.7 percent) and pesticide poisoning (13.8 percent). Kim et al. (2015)

found these rates as well. The most frequent method of suicide was hanging (50.5 percent), jumping from a height (16.6 percent), pesticide poisoning (14.9 percent), gassing (8.5 percent) and drug poisoning (3.9 percent).

Although methods vary among countries, the primary trend found in these statistics is that hanging is one of the most common methods of suicide in the world. There are two reasons why hanging may be chosen as a method more frequently: lethality and accessibility. In a study examining the factors influencing the decision to use hanging, Biddle et al. (2018) interviewed individuals who had survived a near-fatal attempt. Respondents stated that they chose hanging because they perceived it to be certain, whereas other methods might be more likely to fail, and therefore were surprised that their attempt failed. They also expected to die very quickly in contrast to other methods. In terms of accessibility, all respondents stated that hanging materials are easily accessible as an individual can use many different items. They also stated that it was easy to carry out. These factors can also translate to firearm suicides, where many countries suffer from high rates. Firearms are very lethal, and the accessibility of these firearms is prevalent in some areas. Having easy access to firearms in the home can increase the chance of suicide by firearm and allow an individual to act on impulse.

Theories of Suicide

To examine firearm suicides, theories of suicide must be outlined to understand the progression of sociological ideas over time and the theoretical framework for this thesis. One of the most significant contributions to the sociological study of suicide derives from Émile Durkheim's seminal work, *Le Suicide: Étude de Sociologie*

(1897/1951). As the first sociological study of suicide, Durkheim concluded that suicide is related to social causes and not only individual factors. Durkheim's research paved the way for future sociological studies with his ideas as the foundation of their research, despite limitations found in his work by many after him. Although Durkheim's ideas became popular, the progression of sociological ideas on suicide can be outlined by three distinct eras surrounding and including his fundamental work: pre-Durkheim, Durkheim, and post-Durkheim.

Pre-Durkheim Debates

In antiquity, there was philosophical discussion of suicide among thinkers such as Socrates, Plato and Aristotle. Socrates implied that an individual should not take their own life as they are a possession of God and taking away that life usurps a privilege that belongs only to the gods (Droge, 1988). Plato had specific requirements for the permissibility of taking one's own life: 1) if one has been ordered to by the Polis; 2) if one has encountered misfortune; or 3) if one has encountered intolerable shame. Aristotle also views suicide as a punishable offence if done in a fit of anger but provides circumstances when it is acceptable as Plato outlined (Droge, 1988).

Many years of philosophical discussion later, Philosophers Thomas Hobbes (1588-1679) and John Locke (1632-1704) rejected the right of an individual to take their own lives. In *Leviathan*, Hobbes (1651/1969) described men as naturally aggressive and violent and that they must enter what he calls a "social contract". According to Hobbes (1651/1969), this metaphysical contract gives absolute power to the sovereign, who can protect these aggressive and violent men from each other. Therefore, natural law does not

allow a man to be self-destructive and doing so is immoral. Locke followed this idea and stated in *The Second Treatise of Government* (1689/1884) that man is the property of God. Men were put on this earth by God for his pleasure. Therefore, by ending their lives earlier than God intended, men deny God his pleasure (Locke, 1689/1884).

The eighteenth-century saw a shift in the ideas surrounding suicide as The Enlightenment sought to improve humanity through rational change. Leading figures of the eighteenth century such as Voltaire (1694-1778), Hume (1711-1776) and Rousseau (1712-1778) were involved in the debate over suicide. Voltaire (1764/1901) argued that a propensity to suicide is hereditary. Hume (1799/2004) used the laws of nature to explain why it is a human right to take one's own life. Lastly, Rousseau (1762/1893) stated that we do not have a right to end our lives but can risk our lives to save them.

Throughout the long nineteenth century (1789-1914), the discourse surrounding suicide shifted. Societies began to collect official statistics to understand the quality and characteristics of society. Early researchers and theorists also considered social factors, including Karl Marx, who introduced scholars to Jacques Peuchet. Peuchet noted that causes for suicide included consumptive illness that science at the time could not handle, abuse of friendship, betrayal, discouraged ambition, family problems and the repression of rivalry (Marx, 1846).

In England, Winslow (1840) published *The Anatomy of Suicide*. Supported by statistical data, Winslow observed that marriage was somewhat of a preventative factor against suicide. Other significant social statistical work was that of Edmond Lisle and Alexandre Brierre de Boismont. Lisle (1856) examined 52000 suicides and found 48 causes such as insanity, debt, gambling, disappointed love, desire to avoid legal pursuit

and marriage problems. Brierre de Boismont (1856) followed the same lead and found similar causes of suicide to Lisle's findings.

In 1864, Anders Saelan, a physician, examined the relationship between suicide and age, sex, profession, and the seasons, as well as methods of suicide and prevention methods. Through his examination, Saelan (1864) focused on social factors that contributed to the risk of suicide and urged for changes to reduce suicide rates. He also argued that it was pointless to punish suicidal behaviour and that the current approach is archaic compared to new legislation on suicide in other countries.

Late nineteenth-century works include Morselli's book *Suicide, An Essay on Comparative Moral Statistics* (1879) and William Wynn Westcott's *Suicide: Its History, Literature*, *Jurisprudence, Causation, and Prevention* (1885). Morselli's work is arguably one of the most important works of nineteenth century suicidology. He examined the influences of suicide through ethnic, social, individual biological and psychological factors. Examples of his research within the book include analyzing age, education, and suicide rates.

There is no doubt that important works existed before Durkheim and contributed to the discussion. In the eighteenth and nineteenth centuries, writers provided a solid foundation for contemporary views of suicide and examined specific factors such as religion, occupation, family, and broader social issues. The statistical feel of earlier research made the ground fertile for the views of Durkheim. The modern era of suicide research also saw the emergence of secular and decriminalized suicide, which shifted premodern beliefs. Applying statistical data analysis of suicide also contributed to understanding suicide as less immoral and more of a social phenomenon. With

modernity's drastic reinvention of the understanding of suicide, Émile Durkheim's contribution extended these ideas far beyond the previous discourse and paved the way for further research.

Émile Durkheim's Contribution

Le Suicide by Sociologist Émile Durkheim (1897/1951) is a famous and well-referenced text in sociology. This was the first book to be claimed a sociological study (Mueller et al., 2021). Durkheim's findings changed society's idea from suicide being more individual to the possibility of social causes and factors influencing suicide rates. In his book, Durkheim (1897/1951) examined the rates of suicide throughout Europe using official statistics, newspapers, and interviews. His goal was to find common social links that would cause higher and lower rates of suicide by studying the social factors that may influence rates of suicide. Specifically, Durkheim examined the differences between Protestants and Catholics. He found lower rates of suicide among Catholics and theorized that this was due to more substantial social control and cohesion than Protestants. These social factors include an individual's cohesiveness to society, standing within that society, and religious, social, and occupational groups (Durkheim, 1897/1951).

Durkheim's main ideas in *Le Suicide* (1897/1951) follow a theory of suicide that explains how and what social factors contribute to suicide. Durkheim first explained that two items maintain social order. The first item is social integration, which connects an individual to society through norms and values. The second item is social regulation, which includes rules of behaviour that restrict individuals' natural desires and creates specific goals and a means to attain them. When there is an imbalance with social

integration, individuals can become detached from others, which can cause egoistic suicide, as he described in his book. When there is inadequate social regulation, an individual can experience *anomie*, a state of normlessness where the rules of behaviour change or do not apply (Durkheim, 1897/1951). With this change and disintegration, Durkheim (1897/1951) theorized that societies and groups experience varying rates of suicide. He created a theoretical typology of suicide that argues four effects of social factors that may lead to suicide: Altruistic; Egoistic; Fatalistic, and Anomic.

Altruistic Suicide. Durkheim (1897/1951) outlined that altruistic suicide consists of an excess of social integration. He stated that when an individual is too closely tied to the cultural beliefs and rituals of a group, they lose their individuality. The needs of others are then more important than the needs of the individual. Examples of this are dying by suicide for a religious or political cause, such as terrorists or war. A terrorist hijacking and crashing a plane into the twin towers, or a soldier jumping on a grenade to save others, would be two instances of altruistic suicide. Durkheim (1897/1951) stated that an ideal overly integrated group means everyone has the same religious beliefs, cultures, practices, and occupations. It is assumed that the groups interaction is high due to the small size, and therefore members experience higher surveillance. Furthermore, the group will have an approved set of norms and values that include the acceptability of suicide in specific situations (Durkheim, 1897/1951).

Egoistic Suicide. As the opposite of altruistic suicide, egoistic suicides result from weakening the group's control over the individual (Durkheim, 1897/1951). As Durkheim (1897/1951) describes, the more weakened the group's bond is, the more the individual depends only on themselves and recognizes no other rules of conduct than

what is founded on self-interest. As altruistic suicide springs from excessive integration, egoistic suicide is a type of suicide that comes from excessive individualism. Usually, these individuals find it difficult to adapt to society. Therefore, when an individual experiences a prolonged sense of non-belonging and excessive individuation, they see suicide as a response to loneliness. Those who are not bound to social groups with values, traditions, and norms are left with no guidance or meaning in life and therefore resort to an egoistic suicide (Durkheim, 1897/1951).

Anomic Suicide. This type of suicide is due to a change or breakdown in social equilibrium and when an individual experiences a lack of social regulation (Durkheim, 1897/1951). Generally, anomic suicide stems from sudden and unexpected changes in situations, such as extreme changes in wealth. During these situations, moral guidance is weak, and the individual is left with no clear norms or how to adjust to social expectations. At the micro-level, sudden changes in fortune can cause an individual to suffer (Durkheim, 1897/1951). On one end of the scale, an individual who suddenly becomes very rich may have anything they want. However, human wants are insatiable and always wanting more makes an individual suffer. They do not know how to reign in their desires and lose control. On the other end of the scale, an individual who suddenly loses an excessive amount of money will have to adjust to the sudden change in fortunes and learn how to regulate spending. It is crucial to understand limits and control desires at an economic level.

Fatalistic Suicide. Fatalistic suicides are found in societies with too much social regulation (Durkheim, 1897/1951). When individuals are kept under tight regulation and live with extreme rules or high expectations, they lose their sense of identity and

individuation. Durkheim (1897/1951) associated this type of suicide with preindustrial social orders by describing the suicides of slaves and older childless married women as some examples. Durkheim did not touch on this fourth type as profoundly as the others; it is found only in a footnote. However, as degrees of social regulation exist on a continuum, differing effects can result from extremes on both ends. Where there is anomic suicide, there is fatalistic suicide.

Other important contributions by Durkheim (1893/1964) include his ideas on social facts and the collective consciousness. Social facts are things external to an individual that influence how they live and interact in society. Social facts can include institutions, statuses, roles, laws and beliefs. They emerge from the collective of the individuals in society and cannot be reduced. These social facts create a belief system shared by the individuals in a society called the collective consciousness. Although suicide is an individual act, Durkheim (1897/1951) argues that suicide rates are a social fact as they exist external to the individual and the product of the social structure of a society. He also argues that suicide is a concrete social problem embedded in level of social integration and regulation. Therefore, suicide is primarily based in the collective consciousness. This is where Durkheim's typology of suicide comes into play, with the four types representing various levels of social integration and regulation. Depending on the level of integration and regulation within the collective consciousness, individuals experience varying degrees of suicidality.

Critiques of Durkheim

Durkheim's approach was unique in that it was one of the first studies explaining suicide using sociological terms and rejected non-social factors in varying rates of suicide. He was the first to claim that the variance in suicide rates was caused mainly, if not entirely, by social factors. However, many sociologists also criticize Durkheim's theories and empirical methods (Douglas, 1967/2016; Gibbs & Martin, 1964; Halbwachs, 1930; Johnson, 1965; Stark et al., 1983). Common criticisms of his work state that the statistics used by Durkheim may be unreliable due to unsophisticated data collection systems at the time (Douglas, 1967/2016). Furthermore, researchers directed attention to Durkheim's statistical analyses and how they did not match present-day standards (Douglas, 1967/2016). Regarding this theory of suicide, theorists have argued that the different types of suicide outlined by Durkheim could be melded together into one term (Johnson, 1965). Other sociologists have reformulated Durkheim's theories and used his ideas as a foundation for numerous studies (Gibbs & Martin, 1964; Halbwachs, 1930; Phillips, 1974; Powell, 1958).

Halbwachs (1930) argued that Durkheim overestimated the role of religion as contributing to suicide. He criticizes Durkheim's isolation of religion and family from the entirety of social and cultural structures of society. Halbwachs argues that the way individuals live in society meld the different parts of culture into a whole. Therefore, the parts should be examined within their relationship to the whole structure. Also on religion, Stark et al. (1983) criticized Durkheim’s writing and analysis on the subject,

stating he lacked knowledge of even the most elementary of facts about religion in Europe at the time.

Gibbs and Martin (1964) argued that Durkheim's definition of social integration was too vague and not operationalized. Furthermore, they decided that it is impossible to observe the degree of role conflict. Johnson (1965) took a closer look at Durkheim's four types of suicide and concluded that altruistic and fatalistic categories of suicide do not belong, while anomic and egoistic are identical and therefore can be melded into one category.

Jack Douglas (1967/2016) was one of the first to advance the argument for analyzing culture and suicide. He argued that society's lack of understanding of suicide undermined the efficacy of studying suicide the way Durkheim did. He stated that to analyze the social meanings of suicide, sociologists must use scientific methods to examine communicative actions in real-world cases of suicide. Douglas was very critical of Durkheim's ideas and argued that higher levels of social integration led to greater concealment of suicide rather than lower rates of suicide. To Douglas (1967/2016), suicide verdicts and their statistics are the product of interactions and negotiations between the individuals involved, such as friends, relatives, doctors, and police.

Although many arguments and criticisms surround his ideas, Durkheim's theory was the first major theory and study of suicide. The margin of error in his statistical work is far greater than what would be found in current research. However, his research included social factors and not solely the individualized factors that psychological studies examine. Although not overly promising to other researchers, his statistical analysis was a simplistic method to showcase his workings and ideas to a society that focused more on

numbers than theoretical advances. His ideas continue to influence the ways sociologists conceptualize and conduct research on suicide in the post-Durkheim era.

Post-Durkheim Approaches

Throughout the post-Durkheim era, sociologists have tested, rejected, and transformed Durkheim's ideas while also formulating their understandings of suicide. There have been many high-quality works by sociologists since Durkheim's time. However, most have been somewhat fragmented and superficial rather than fundamental to the study of suicide. Understandably so, the study of suicide has been complex and extensive. It is difficult to systematically criticize, test theory and go beyond the current work. As a result, Durkheim's study by formulating different theories, extending his work, and testing his ideas influenced the later sociological works on suicide.

Status Integration Theory of Suicide. Gibbs and Martin (1964) concluded that Durkheim's concept of social integration would be best operationalized as the stability and durability of social relationships. However, as they decided that there is no strong evidence on the stability and durability of social relationships, Gibbs and Martin proposed observing role or status conflict, which would best reflect the stability and durability of social relationships within a population. Gibbs and Martin (1964) therefore coined *status integration* to operationalize Durkheim's social integration. Status integration is defined as the statuses of individuals' roles and how they integrate and overlap (Gibbs & Martin, 1964). Gibbs and Martin argued that the more role-conflict there is in a group, the less frequently the two roles will be occupied by an individual. The greater the role conflict,

the more likely an individual will change roles or statuses. If they cannot leave their specific role configuration, they end their lives.

Although their ideas were more testable than Durkheim's, Gibbs and Martin's idea of status integration was not well defined. Taylor (1988) criticized Gibbs and Martin by stating that they failed to understand the social meanings of suicide and focused solely on analyzing statistical information.

Status and Anomie Theory of Suicide. Powell's (1958) theory of suicide derives largely from Durkheim's Suicide, and his ideas fall in a sociological and psycho-social realm. As a more complex theory, Powell examined the relationship between occupation and suicide. He determined that suicide is the ultimate expression of self-contempt and is rooted in anomie, resulting in the inability to act and self-destruction. The main idea of Powell's work was that suicide varies with social status. However, *status* is not defined as rank but rather as any position in any social system. The roles that an individual plays are incorporated into the structure of the self (Powell, 1958). Powell stated that anomie brings feelings of emptiness and meaninglessness, leaving the individual disassociated from the structure of the institutional order. Opposingly, an individual too enveloped in the culture and norms loses a sense of self and lives and reacts mechanically, leading to the same feeling of meaninglessness and anomie.

Subculture Theory of Suicide. In *Les Causes du Suicide*, Halbwachs (1930) examined suicide concerning urban and rural rates, trends in different countries, marital status, religious affiliation, homicide, political and economic crises, alcoholism, and psychopathic states. To do this, he used Durkheim (1897/1951) and Morselli's (1879) statistics and tables. The fundamental principle of Halbwachs' (1930) theory is that the

cause of the relation between suicide rate and urbanism is a difference in the ways of life of urban and rural groups. Although not clearly defined by Halbwachs, the idea of "ways of life" could be defined by social relations or culture and the shared meanings. The second fundamental principle of Halbwachs theory is the degree of social differentiation. This principle is conceptually related to Durkheim's analysis of external social relations that play a part in determining social integration. However, Halbwachs dived deeper by arguing that more significant social differentiation causes higher suicide rates because it causes certain situations that create more social conflicts. These conflicts then cause a tendency for depression and, ultimately, suicide.

Socio-Psychological Theory of Suicide. Martin Gold (1958) presented what he classified as an extension of Durkheim's theory of suicide. He aims to show that certain sociological variables partially determine the choice between homicide and suicide. The variable he focuses on is social class or status. Gold argues that the socialization of aggression is the fundamental determinant of the preference for homicide or suicide. The type of socialization generally associated with the outward expression of aggression is found among lower-class individuals more frequently than upper-class individuals. Furthermore, that type of socialization typically associated with inward aggression is found more among upper-class individuals than lower-class individuals.

Gold's (1958) evidence of socialization practices, class position, and the expression of aggression is concerned with minor forms of violence, such as psychical action against a person. Generally, Gold proposed a theory of psychological and sociological variables that explains differences in groups and individual factors for suicide. Gold looked at relationships over time, such as how society affects individuals'

choices for suicide or homicide. This was examined primarily by determining their stable personality preference between the expression of aggression outwardly and inwardly.

Socially Meaningful Actions. Jack Douglas (1967/2016) noted that there is insufficient data on suicide actions and their meanings to provide the ability to study these meanings statistically. He argued that an excessive amount of evidence can very easily mislead one to interpret incorrect meanings about suicidal actions. Therefore, he proposed to analyze patterns of actions and meanings that are most common among suicides. These patterns of meanings seem to be most frequent based on a literature survey in the Western world. To do this, Douglas (1967/2016) presented the patterns of meanings that seem most common by constructing a typology of suicidal meanings and analyzing the ways individuals go about constructing these patterns of meanings for themselves and others.

The first type stated suicide as a means of transforming their substantial, or whole, self (Douglas, 1967/2016). This is when an individual dies by suicide to release from the world and enter paradise, as seen in mass suicides by religious groups. Many individuals who take this action attempt suicide with the intention of "escaping" (Douglas, 1967/2016).

The second type is suicide as a means of transforming oneself for others. In this case, suicide is a means of showing others how deep their feelings are about a particular issue or situation, such as a person guilty of a crime choosing suicide for repentance (Douglas, 1967/2016). The individual transforms their substantial self by performing actions and making statements to change what the individual is in terms of the meanings some audience will determine represents them, either in this world or the next.

The third type outlines suicide as a means for achieving fellow feeling or sympathy (Douglas, 1967/2016). An individual in this case is asking for help or sympathy and can include suicide attempts where a person is hoping to be found. As Douglas (1967/2016) described, especially in attempted suicide, there is an appeal meaning involved. The suicidal actions mean to the individual and others that they need some form of social help.

The final part of the typology is suicide to gain revenge, as briefly mentioned in the previous part of the typology (Douglas, 1967/2016). The individual in this situation places blame on others for their suicide. This usually includes a note accusing others of their situation. Through this typology, Douglas notes that suicidal actions are some forms of expression of aggression and is one of the most common interpretations of suicidal meanings (Douglas, 1967/2016).

Although flawed in some areas, Durkheim's work provided a solid foundation for the examination and interpretation of suicide. As post-Durkheim researchers formulated new theories on the phenomenon, they experience similar criticism to Durkheim's. Perhaps, as Douglas (1967/2016) stated, there must be a change in the examination methods that extend past the use of sole statistics and includes the understanding of social meanings tied to suicide. Once a solid foundation of the social meanings of suicide is established, researchers can only become more specific on the existing factors that influence suicide rates in a society, such as firearm availability in this case.

Factors Influencing Suicidality Around the World

Race and Ethnicity

Suicide rates vary among racial and ethnic groups across the world. In North America, attempted and fatal suicides are most prevalent among Indigenous Peoples compared to all other racial or ethnic groups (Olson & Wahab, 2006). In Canada, suicide among Indigenous youth aged 15 to 24 years old is 5 to 6 times higher than non-Indigenous peoples (Statistics Canada, 2013). In Inuit communities, such as Nunatsiavut in Labrador, the rate of suicide is 25 times higher than the rest of Canada, with some communities experiencing 40 times the national average (Statistics Canada, 2013). From a global perspective, a systematic review of the literature by Pollock et al. (2018) found that suicide rates in many countries increased over time. These include Inuits in Greenland, Aboriginal and Torres Strait Islanders in Australia, Indigenous peoples in the Micronesian islands, and various tribes in Mato Grosso do Sul in Brazil, to name a few.

Factors that have been associated with an increased prevalence of death by suicide among Indigenous populations/communities include depression, substance use disorders, and post-traumatic stress disorder. These are relatively the same as other populations. However, several studies have shown that previous suicide attempts, family disruption, loss of ethnic identity and lack of religious or spiritual identification place Indigenous populations at a higher risk of suicide (Bechtold, 1988; Haw et al., 2013; Wissow et al., 2001). Acculturation, the modification of a culture or group/individual as a result of contact with another culture, creates a challenge of identity and holding traditional values (Lester, 1999). This can also create strains among families, divorce, child neglect, and

substance use. In Canada, Indigenous peoples also suffer from intergenerational trauma caused by the effects of colonization, the act of settling among and establishing control over the Indigenous population of an area (Fournier & Crey, 1997). These traumas can include residential school experiences, familial issues, relocation, and the denial of the Metis's existence (Chartrand, 2020). The experiences of Indigenous populations are complex and cannot be completely understood except by those within these populations. Therefore, it is important not to further stigmatize or label Indigenous groups, as the laws and ways of thinking are deeply rooted in historical practices and colonial systems and laws.

Among populations that are racially Black, data shows that suicide rates have increased between 1999 and 2017, with the highest rates in adolescents and young adults who are Black (Ramchand et al., 2021). Although some statistics are available, there is a lack of information on suicides in Black populations in the United States and Canada, amongst other countries. As posited by Prange & Vitols (1962) and Prudhomme (1938), one reason for this is the historical belief that very few individuals who are racially Black die by suicide or even experience depression. Much of the racism was that depression and suicide was a "white thing" (Early and Akers, 1993). However, once slave narratives and ship logs were examined in the Antebellum period, it was quickly found that suicide was prevalent in Black populations (Crosby & Molock, 2006).

As of 2017, suicide is the leading cause of death among Asian-Americans aged 15 to 24 years old in the United States (Ramchand et al., 2021). Unfortunately, there is not an abundance of research on Asian-American suicides. However, it has been found that Asian-Americans are the least likely racial group to seek and utilize mental health

services in America, which may be due to a language barrier (Lee et al., 2009). In Asia, the countries within the continent are very different on socioeconomic, religious and suicidality factors. A 2012 study by Chen et al. (2012), examining rates from 1995 to 2009, found low suicide rates in Thailand (5.7 per 100 000), China (6.6), Singapore (8.0) and India (10.9) in 2009. Higher rates were found in Hong Kong and Taiwan (13.8 and 17.6 per 100 000), and the high-rate countries included Japan (24 per 100 000), South Korea (31), and Sri Lanka (23). However, Sri Lanka rapidly declined from 46.9 per 100 000 in 1995 while South Korea and Japan increased (Chen et al., 2012).

Suicide among Hispanic populations is challenging to study officially as many Hispanic individuals are undocumented workers who are not represented by studies (Tortolero & Roberts, 2001). However, some official statistics found that Hispanic suicide rates are about half of the overall rate and have the lowest rates among all racial and ethnic groups in the United States. In Latin America and the Caribbean, suicide rates are lower than in other regions of the world. Multiple factors, such as poverty, displacement, and violence, can increase the risk of suicide among Hispanic populations (Tortolero & Roberts, 2001).

Among studies examining racial differences in suicide rates, Oquendo et al. (2001) found that White males had the highest rates of suicide out of all other racial groups. This is still prevalent today in North America, with the rate of White suicides at 15.67 per 100 000 people compared to Indigenous peoples at 13.64 in the United States. In Canada, these rates are switched, with suicide among Indigenous peoples as higher than White individuals. Although much of the research has not stated any factors unique to individuals who are racially White, Kubrin and Wadsworth (2009) studied racial and

external social factors within suicide rates. They concluded that disadvantaged White and Black males had high rates of suicide. Both findings have been supported through empirical evidence by several studies (Almgren et al., 1998; Crawford & Prince, 1999; Kubrin & Wadsworth, 2009; Oquendo et al., 2001). As seen in multiple racial groups, other factors include prior attempts, substance abuse, mental disorders, access to lethal means, social isolation, and lack of access to mental health care.

Gender

In gender[2] as a factor influencing suicidality, males have higher suicide mortality rates than females at an average male-to-female ratio of 3.4 to 1, however females have higher rates of attempts (Varin et. al., 2021). According to Jaworski (2014), suicide is masculine and masculinist, meaning it is a "men's business". This is due to the actions and methods used, such as hanging and firearms, which are more violent and irreversible. With women, actions and methods are more commonly less fatal, such as drug overdoses and self-harm, which result in admissions to the hospital (Jaworski, 2014). With these outcomes for women, they are sometimes seen as cries for help or attention seeking, whereas for men, it is seen more as a "legitimate" suicide. There is also a gendered stigma whereby discussing suicidal thoughts, or non-fatal suicide attempts are associated with weakness, which may prevent reporting among men (O'Connor & Kirtley, 2018). Among

[2] In Sociology, gender (i.e., man/woman) should be used when discussing identity as it is social and cultural. However, many of the studies referenced in this thesis incorrectly use sex (i.e., male/female) as their terminology for identity, which is biological. This proves as a challenge for modern academic research as many scientists do not pay much attention to the distinction between the two sets of terms and use them interchangeably. Therefore, this thesis only uses terminology for sex when referencing papers that used the term in their studies, including the Statistics Canada data used for analysis. Otherwise, terminology for gender is used throughout.

women, it has been found that there are higher reports of suicidal ideation and attempts (O'Connor & Kirtley, 2018).

Many studies have attempted to explain the gender gap in suicide and suicidal behaviour by examining causes, lethality, and outcomes (Aaltonen et al., 2019; Freeman et al., 2017; Jaworski, 2014; McLaughlin et al., 2012; Qin in et al., 2000). Depression is one of the most common underlying factors contributing to suicide, and it is far more common in women than men. This would account for the overall lower rates of suicidal behaviour in men, but not the rate of fatal suicide attempts. Some studies in areas such as Denmark and Hungary reported that unemployment, retirement and being single were risk factors among men, whereas for women the only reported risk factors were mental illness (Qin et al., 2000; Tóth et al., 2014). In other countries such as UK and Scotland, risk factors include mental illness, relationships and bereavement, and domestic violence (Brådvik, 2018; Fung & Chan, 2011;). In Canada and the United States, risk factors are like other countries, including mental illness, significant loss (relationships, social, financial), and major life changes (unemployment, homelessness, death of a loved one) (Centers for Disease Control and Prevention [CDC], 2021; Government of Canada, 2016).

The gap in suicide rates between men and women can also be explained by method choice, where men tend to choose more lethal methods of suicide than women (Aaltonen et al., 2019; Freeman et al., 2017). A study of European countries revealed that men had a greater risk of choosing more violent methods with higher lethality than women (Mergl, 2015). This trend continues across many other countries including Australia, Taiwan, United States and Canada (Elnour & Harrison, 2008; Liu et al., 2021;

Miller et al., 2004). The reason that men may choose more lethal and violent methods than women could be that women may wish to keep their body and face uninjured, keeping their appearance (Callanan & Davis, 2012). Preference to more lethal methods of suicide could also relate to a man's need to not fail in their attempt, as men wish to demonstrate success and power, even if it is among themselves (Yur'yev et al., 2011). Firearms are one of the most lethal methods for suicide. In the United States, firearm suicides were lethal in over 95 percent of cases. In Europe, 60 percent were lethal, and in Canada, 75 percent of firearm deaths were suicides.

Gender stigma is also prevalent among suicides in men and women. Non-fatal suicides can be seen as "feminine" and less acceptable for men than women. Studies have shown that men and boys are more concerned with social disapproval regarding suicidal thoughts (Fox et al., 2018; Stillion et al., 1989). Therefore, they are less likely to seek support for suicidal thoughts and behaviours (Stillion et al., 1989). Furthermore, research has shown that because non-fatal suicides can be seen as feminine, men may push toward more lethal means (Canetto and Sakinofsky, 1998).

Among members of the LGBTQ2SIA+[3] community, youth are at an increased risk for suicide at more than four times the risk (Johns et al., 2020). Mental health is a large factor contributing to the risk of suicide among the LGBTQ2SIA+ community. Data shows that bisexual, transgender and nonbinary youth face higher risk for depression and thoughts of suicide compared to youth who are cisgender and straight, including

[3] LGBTQSIA+ stands for Lesbian, Gay, Bisexual, Transgender, Queer, Questioning, Two-Spirit, Intersex and Asexual. The plus is added to recognize that there are many different gender identities and sexual orientations.

cisgender members of the LGBTQ2SIA+ community (Price-Feeney et al., 2020). LGBTQ2SIA+ youth of colour also face higher rates of suicide attempts, which highlight the impacts of oppression and trauma inflicted on these groups. Some risk factors for suicide among the LGBTQ2SIA+ community include minority stress such as discrimination, LGBTQ2SIA+-based physical harm, housing instability and change attempts by parents (Green et al., 2021). Furthermore, rejection and lack of social support is a strong factor influencing suicidality among the LGBTQ2SIA+. Without parental acceptance or access to affirming spaces, it places a strain on LGBTQ2SIA+ youth, therefore increasing suicide attempts (Katz-Wise et al., 2015; Ryan et al., 2009). Due to these differences that affect men, women and the LGBTQ2SIA+, protective measure initiatives must consider the factors that influence fatal and non-fatal suicides among these groups differently.

Religion

Many of the world's religions have condemned suicide because they believe life belongs to their God. In Buddhism, suicide is prohibited because it causes more suffering rather than reducing suffering. Furthermore, suicide technically violates the first precept of Buddhism, which is that killing is evil (Promta & Thomyangkoon, 2009). However, the commentary to the Pali Canon, a collection of Buddhist teachings, states that the first precept does not include suicide as it is explicitly for killing another and not oneself. In Hinduism, the Hindu book of code, conduct and ethics condemn suicide and attempted suicide as sins (Vijayakumar, 2009). Death is a very complex idea in Hinduism, questioning how the soul will be affected and impacting society and their future

reincarnations. However, there are instances in both Dharmic religions where suicide is viewed as tolerable and even praised. Many Buddhist monks and Hindus have used self-immolation, setting fire to oneself, for political or religious reasons such as in protest or acts of martyrdom (Vijayakumar, 2009). As self-immolations are often public and political events, they are seen as altruistic suicides; sacrificing one's life to save or benefit others, as Durkheim (1897/1951) outlined in his work.

In Japan, suicide is glorified to control one's destiny and exercise power over death when done for good reasons. In Japanese Shinto religion, suicide is somewhat condoned for motivational purposes such as patriotism, philosophy, romance, and despair (Kaneko et al., 2009). Although western religions focus on individualism, the Shinto religion and Japanese culture focus on society, and state that suicide for the greater good is condemnable. However, Jewish tradition does not follow the same ideas of self-sacrifice. The scriptures state that suicide is prohibited as an individual's life belongs to God and is not one they can take (Orbach & Rabinowitz, 2009).

In a systematic review of literature on religiousness and mental health, Moreira-Almeida et al. (2006) found that 84 percent of the 60 studies reviewed found lower rates of suicide, or less suicidality, among more religious individuals. One U.S. study found that among a sample of 584 suicides and 4279 natural deaths aged 50 and older, the suicide rate for those who did not attend religious activities was four times higher (Nisbet et al., 2000). Other researchers also found an association with religiosity and lower probability of suicidality (Breault, 1986; Cook, 2014; Eskin, 2004; Nonnemaker et al., 2003; Stack, 1983).

Economic, Martial and Social Factors

Although there are conflicting views on religiosity and suicide and a lack of data on race, socioeconomic status undoubtedly affects the risk of suicide. This can be confirmed by several studies that have found that suicide rates are highest in low-income areas in countries such as Sweden, Canada, Australia, and England (Ferrada-Noli & Asberg, 1997; Hasselback et al., 1991; Kennedy et al., 1999). In Sweden, Ferrada-Noli & Asberg (1997) examined two high-income and two low-income areas in Stockholm and whether those factors influence suicide rates among Swedes and immigrants. They found that incidences of suicide were more prevalent in low-income areas, with the rates highest among immigrants. In Canada, unemployment has a positive relationship with suicide rates. Furthermore, based on income, education, and occupation, more affluent areas have lower suicide rates (Hasselback et al., 1991). Kennedy et al. (1999) examined this association in London, England and found that unemployment and poverty strongly correlated with suicide rates. To explain these associations, reduced income and unemployment cause downward mobility, which places individuals into a lower social class (Goldsmith et al., 2002). By living in a lower social class, the likelihood of poor social integration can occur, which increases the risk of suicide (Goldsmith et al., 2002).

As Durkheim examined religiosity and suicide, he also proposed that suicide rates were associated with social regulation and social integration. Extreme highs and lows in social integration and social regulation may be associated with higher suicide rates (Durkheim, 1897/1951). However, some argue that only low levels of these two factors attribute to high suicide rates (Johnson, 1965). Many factors may cause low social

integration, such as divorce, unemployment, discrimination, and lack of social relations. There is substantial importance of having strong social integration as it allows for support and somewhat of a social safety net for those struggling or before a struggle may begin. For example, in the Austro-Hungarian Empire, marriage and children (factors assumed by Durkheim to increase social integration) were positively associated with stronger social integration (Ausenda et al., 1991). A strong marriage is a significant positive factor for social integration. When divorce occurs, it disrupts the family and social ties, inevitably creating individual trauma and increasing the risk of suicide. In Canada, associations between suicide rates and divorce rates were strong for both men and women in all provinces, as per a study by Leenaars & Lester (1999). In some countries, marriage is a high priority for families, which means individuals are getting married at a young age (Fakhari, 2022). However, some studies have found that marriage can be considered a stressful life event, which then can lead to issues with well-being. For example, a study in Iran found early marriage was associated with an increased risk of suicide in both females and males by 2.64 and 2.36 times (Fakhari, 2022). In other countries where individuals are getting married later or not at all, single status of any kind (never married, divorced or widowed) shows an increased risk for suicide compared to married individuals (Næss, Mehlum & Qin, 2021).

Examining poor social integration, Duberstein et al. (2004) reported that in the United States, suicides had a lower household income and were more likely to be unemployed or receiving disability benefits. On a social scale, the rate of people who died by suicide had lower levels of social interaction. They were less likely to be a part of a social group, such as a work group, charity, public service group or community group

(Duberstein et al., 2004). Bille-Brahe (1987) attributed the difference in suicide rates between Norway and Denmark to poor social integration. Norwegians were better integrated into the immediate environment, work environment and community than the Danes. Overall, more than one third (35 percent) of individuals in the Denmark survey had poor social integration, while Norwegians had less poor social integration at only 23 percent and 26 percent, respectively (Bille-Brahe, 1987).

While several factors are associated with suicide, socioeconomic status and social integration are some of the most important to understand and examine. An individual's overall life situation is dependent on numerous factors and can be a combination of various situations (Bille-Brahe, 1987). This can include family, religious, and political groups, ties with neighbours, friends and the community, and inclusiveness at work. Each of these pieces, and their level of integration on each factor, affects rates of suicide within a population and the likelihood of suicidality in an individual. An individual can be high in one area but low in another. Therefore, the level of integration of the individual is calculated for each area to understand correlating effects of integration in different situations. Furthermore, factors are examined individually to understand if poor integration in one area can be counteracted by a higher degree of integration in another or if there are no positive effects of being higher in one area yet low in another.

Mental and Physical Well-being

One of the main clusters of risk factors associated with suicide, and the most examined in research, is mental health. Poor psychological/mental health is estimated to strongly link to suicide (Bachmann, 2018; Fegg et al., 2016; Too et al., 2019). A large

part of the relationship in number of suicides in a population is related to mental health conditions/diagnoses defined per the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-V), such as depression, substance use, anxiety, and schizophrenia (Bachmann, 2018). As mentioned above, mental illness can go hand-in-hand with any of the other possible risk factors, such as the higher presence of depression in members of the LGBTQ2SIA+ community due to lack of social support, ethnic groups experiencing acculturation, which puts a strain on families and may increase substance use and depression, and the trauma of marrying young which increases stress, ultimately resulting in higher suicide rates (Renemane, Kivite-Urtane & Rancans, 2021). Although studied extensively, there is no clear understanding of these relationships and the effects of mental illness and other factors on suicidality, except that a strong relationship does exist (Renemane, Kivite-Urtane & Rancans, 2021). Depression and substance use disorders, such as alcohol use disorder, has been found to be the most prevalent diagnoses among people who die by suicide (Bertolote & Fleischmann, 2002). Furthermore, co-morbid disorders are also associated with a higher risk for suicide such as depression with obsessive compulsive disorder, anxiety and/or schizophrenia. Therefore, implementation of suicide prevention guidelines is extremely important to reduce suicide rates including the development of a suicide prevention policy, trend-analysis of suicides numbers, evaluations after suicide and clinician training (Brådvik, 2018).

One area in the health sphere that is not examined as extensively is the prevalence of physical illness and its effect on suicidality. Both mental and physical conditions are important risk factors for suicide, yet physical illness is rarely examined as a motive for suicidality (Renemane, Kivite-Urtane & Rancans, 2021). However, some studies have

found an association between poor physical health and suicidality, including Black et al., (2019), who found that poor physical health, interpersonal conflict, and panic increased the risk of suicidal ideation, along with depression. A study from Australia found that thyroid disorders, syncope, seizures, liver disorders, and alcoholism are strongly associated with suicide ideation, while a study from the U.S. found that individuals with multiple medical illnesses are also at a higher risk for suicidality (Sanna et. al., 2014; Stickley, 2020). General practitioners play an important role in these cases for detecting suicidal ideation in patients and aiding and preventing suicide. However, without the knowledge of physical illness as a factor influencing suicidality, there may be a lack of understanding of what to look for.

Although mental and physical illness is complex in understanding suicide and suicidality, there seems to be more of an understanding of the factors that influence these decisions as Canada has implemented the MAID Bill C-7 law to medically assist those with an illness in dying. Furthermore, starting in 2023, Canada will allow those with severe mental illness to apply for MAID. Some individuals are perplexed by the fact that physicians will now be able to assist patients in dying as doctors are there to save lives, help minimize pain, aid in recovering from a disease faster and help those learn to live with a disabling injury. However, others argue that when an individual is living with grievous and irremediable medical condition such as cancer, that cannot be reversed, having the option to decide when to end one's own life in a controlled and painless way can be seen as an easier route than living the rest of their days in pain and discomfort. As per the government of Canada (2022) to be eligible for MAID, the individual must be at least 18 years of age and mentally competent and capable of making health care decisions

for oneself, have a serious illness, disease or disability that cannot be reversed or relieved under conditions the individual sees as acceptable. Two independent practitioners that do not hold any authority over each other review the request and the individual applying submits a written request with a witness to confirm the signature. Once approved, individuals have the option for clinician-administered (clinician directly administering a substance that causes death) or self-administered (prescription of a drug that the individual can take themselves to bring about their own death).

Despite the extension of the MAID law, there seem to be controversies surrounding the update. Psychiatrist John Maher went before the Canadian Senate's Committee on Legal and Constitutional Care to argue that Canada now offers MAID, but not universal palliative care, disability support or mental health care (Karel, 2021). He also stated that clinical relationships are suffering because patients are giving up on attempting recovery because MAID will be available to them soon, and patients who are getting better but cannot see it yet are asking for MAID (Karel, 2021). This seems to encompass many of the arguments against the extension of MAID. However, Canada is not the only country to offer programs such as MAID.

Physician-assisted suicide is also legal in countries under certain circumstances such as Australia, Austria, Belgium, Netherlands, parts of the United States, Luxembourg, New Zealand, Spain and Switzerland (Roehr, 2021). However, there are some oppositions to the idea in medical ethics and certain religions such as Catholicism and Judaism, which frown upon assisting an individual in ending their own life (Roehr, 2021).

Collective Consciousness and Suicide

On a more theoretical note, part of Durkheim's (1893/1964) important work included his idea of a collective consciousness; a set of shared ideas and beliefs in a society and how individuals view themselves within that society. While suicide can be viewed as an individualistic phenomenon, suicide rates are clearly a collective phenomenon that are part of the social element of the individualistic suicides. To study this, researchers examine suicide rates that vary across societies just as Durkheim (1897/1951) did in his study. Understanding the level at which an individual experiences the collective consciousness is important as it affects their individual meanings, which can lead to suicide. As Durkheim outlined in his types of suicide (Egoistic, Altruistic, Anomic and Fatalistic), stronger and weaker collective consciousness' have differing effects on suicide for the individual and overall suicide rates (1897/1951).

Within modern society, a weaker collective consciousness means that people may not see the same meaning in their lives which can lead to dissatisfaction. One of the results of this can be suicide. In Durkheim's (1897/1951) teachings, egoistic suicide would fall into this category as it stems from the absence of social integration. However, individuals who are strongly integrated into a family structure, religious group, or some other type of integrative group are less likely to encounter suicidality (Durkheim, 1897/1951).

Another cause of weak regulation results in anomic suicide, which is weak regulation or external constraints on individuals such as during economic depressions or expansions (Durkheim, 1897/1951). Today, economic depressions are happening right

now; war has caused rises in gas prices, Covid-19 caused the loss of millions of jobs around the world, stocks have been low, and inflation has been high. When this happens, individuals do not feel rooted in society and without constrains they may become destructive, leading to possible suicidal behaviour.

On the opposite end, a high level of collective consciousness can also be detrimental as seen in Durkheim's (1897/1951) altruistic suicide category. Over-integration of an individual in society can cause the individual to feel that they must end their lives for the sake of the group or cause, such as in religious and political aspects like war. In contemporary society, altruistic can be defined by those who end their own lives because they are suffering from severe physical illness and place the needs of their family over themselves. For example, if an individual has been diagnosed with terminal cancer, they may feel it is their duty to end their lives for the sake of their family so they do not have to take care of the sick individual or make painful and traumatizing decisions on their behalf.

Lastly, when the collective consciousness is too strong, individuals may feel that their passions and desires are constrained and difficult to pursue due to constraints (Durkheim, 1897/1951). When experiencing this tight regulation, individuals see no manner in which their lives can be improved, which then can lead to suicide as an escape. This is called fatalistic suicide (Durkheim, 1897/1951). The rise of COVID-19 is also a strong example of this type of collective consciousness in modern society as the disease brought tight restrictions to individuals on where they could go, who they could interact with, what type of personal protective equipment they had to wear, what measures they had to follow when doing things they previously enjoyed without constraints. As this

pandemic is ongoing, these regulations have been in place for quite some time and are just now easing. However, as individuals feel stuck, it can lead to suicidal ideation (Dubé et al., 2021.

Understanding the level of collective consciousness as a factor influencing suicide is extremely important in current society as we are experiencing these altering situations that both weaken and strengthen the regulation individuals may feel. The methods of analyses from Durkheim are useful today, even if the examples of these types of suicide change as social causes are now better understood and recognized, which may help explain the phenomenon of suicide.

Firearm Legislation, Availability, and Suicide in Canada

Although data does not indicate firearms are the primary method used in suicides in Canada, some studies have begun examining the connection between firearm legislation, accessibility, and suicides to determine if changes in legislation affect suicide rates (Ferguson & Koziarski, 2019; Langmann, 2020; Leenaars et al. (2003). The motivation for this examination stems from critical social questions that arise from gun politics and safety. These questions call to examine factors such as gun culture, socio-legal analyses of policy, social movements, and sociological theory (Durkheim's theory of suicide, social facts and the collective consciousness) on the role of guns in social life. Sociologists are equipped to examine firearms and suicide through micro and macro-level structures. However, there has not been an abundance of research on gun control and suicide in recent years, even as legislative change continues to occur (Ferguson & Koziarski, 2019).

History of Gun Control in Canada[4]

Gun control has been prevalent in Canadian history since the beginning of European presence (Brown, 2012). Before 1892, it was not permitted to carry a handgun without reasonable cause to fear assault against one's life or property (RCMP, 2020). In 1892, the first Criminal Code, which codifies criminal offences and procedures, required individuals to have a basic permit to carry a pistol for any reason other than fear of assault or injury (RCMP, 2020). As years progressed, more laws were created and amended to form gun control within Canada as new models and methods of obtaining firearms surfaced. In 1995, the government created the Firearms Act (Bill C-68) to regulate the possession, transportation, and storage of firearms. This new act reinforced Canada's already strict firearm regime. Furthermore, since 1934, the law required handguns to be registered. Furthermore, police measures were tightened, and multiple firearms were prohibited in 1977 and 1991 (RCMP, 2020).

Canada's history of gun control has been long, everchanging, and a topic of examination and debate. Gun laws pass during periods of fear and political instability, generally after a firearm-related event occurs. An example of this fear was during the 1930s, where the Canadian government passed firearms legislation to mandate handgun registration as they were afraid of labour unrest and American "rum runners" (Mauser, 2012). World War II added stress by fueling the enactment of additional gun control laws, including registering rifles and shotguns. After the war, terrorism was prevalent in the

[4] This thesis discusses legislation that centers around legal, not illegal, firearms. Unfortunately, it is difficult to study illegal firearms as much of the numbers are estimates and the methods of obtaining illegal firearms are not easily studied.

1960s and early 1970s Quebec. Mauser (2012) stated that due to public fear, another firearm law was enacted in 1969 to categorize firearms as restricted and prohibited for the first time. Restricted weapons, such as handguns, had to be registered and were under strict conditions, including a permit to transport the weapon. However, individuals were allowed to purchase restricted weapons if the police judged them suitable. Mauser (2012) outlined that prohibited firearms, including fully automatic firearms, silencers, rifles, and shotguns shorter than 66cm, were placed under stricter conditions than restricted firearms. Therefore, the enactment of this law in 1969 made it illegal to purchase or sell a prohibited weapon and provided the government with authority to restrict or prohibit any firearm that was not a standard weapon for hunting or sporting purposes (Mauser, 2012). In 1977, firearms legislation was amended again, which included obtaining a permit for ordinary rifles and shotguns, called a Firearms Acquisition Certificate (FAC) (RCMP, 2020). Furthermore, a new crime was introduced for the unsafe storage of firearms, and property protection was not considered a reason for acquiring a restricted firearm anymore (RCMP, 2020).

After the École Polytechnique massacre in 1989, where 14 women were murdered with a legally obtained Ruger Mini-14 semi-automatic rifle in Montreal, the Conservative government enacted new legislation, Bill C-17, in 1991. This bill added certain firearms to the list of prohibited weapons to include converted full automatics and many semi-automatic military-style rifles and shotguns (Bridges, 2004). This new legislation also changed the FAC system, requiring applicants to provide a photograph and two references, a 28-day waiting period to acquire the FAC, and safety training (Bridges, 2004). Once an application was submitted, police also began screening applicants by

telephoning neighbours, spouses, or ex-spouses to understand the character of the FAC applicant. The primary focus of the enactment of Bill C-17 (1991) was expanding the prohibited weapons to include semi-automatic firearms converted from full-automatic. In 1994, the Bill C-17 requirement for applicants to show knowledge of safe handling came into force. Applicants had to pass a test or firearm safety course to prove they could handle firearms safely. Once the Liberal government was elected in 1993, they proposed new firearm laws. This included prohibiting over half of all registered handguns in Canada. Bill C-68, which covered these requests, was introduced in 1995. Changes in Bill C-68 included harsher penalties for serious crimes using firearms, the creation of the Firearms Act to regulate firearm possession, transportation and offenses, a new licensing system and the requirement to register all firearms, including shotguns and rifles.

As the 21st century began, changes were made to Bill C-68 (1995) where all firearms, including rifles and shotguns, required a license and had to be registered. Since then, many changes have come into force to regulate firearms within Canada. In 2012, Bill C-19 was enacted to remove the requirement to register firearms that are neither prohibited nor restricted and ordered the destruction of existing registration records. This was a drastic change to the long-gun registry. However, non-restricted firearms still require a license and training course. In 2015, Bill C-42, the Common Sense Firearms Licensing Act, was enacted to reduce penalties and the paperwork required for gun licensing and transportation, provide the cabinet with the ability to override the RCMP on decisions about which weapons should be restricted or prohibited, and required first-time license applicants to take part in a classroom firearms safety course. Five years later, Bill C-71 (2019) was enacted to extend background checks before obtaining a firearm and

require authorization to transport restricted and prohibited firearms to locations other than a shooting range. After the Nova Scotia attacks in 2020, where Gabriel Wortman shot and killed 22 people and injured three, Prime Minister Justin Trudeau announced that military-grade assault weapons would be classified as prohibited. He provided a two-year amnesty period for owners to dispose of, export, register, or sell these firearms through a buy-back scheme without any criminal charges (Royal Canadian Mounted Police, 2020). Despite these changes in firearm ownership, legislation on the storage of firearms has remained the same. As per the Firearms Act (1995), it is required to store ammunition separately or locked. However, it can be stored in the same container as the firearm. Non-restricted firearms can either have a locking device to stop firing or be locked in a difficult container to break into (Firearms Act, 1995). Furthermore, restricted firearms must have the locking device and be locked in a container or locked in a vault, safe or in a room built specifically for firearms storage. The most recent change in firearm legislation includes Bill C-21, where the government promises to combat intimate partner violence, gender-based violence and self-harm involving firearms by creating "red flag" and "yellow flag" laws that would allow individuals, such as concerned friends and family, to apply to the court for immediate removal of an individual's firearms or suspend review of an individual's application. This is the first form of gun legislation to specifically point toward firearms for the use of self-harm and suicide.

The existence of firearm legislation in Canada has been a long and winding road. As briefly mentioned, much of the enacted legislation was in response to specific situations involving firearms, even when the choice of weapon was not the cause of the situation. After the École Polytechnique massacre in 1989, the Quebec coroner stated that

poor police response time was the reason for the high number of deaths, not the weapon used (Wilton, 2014). Despite this statement, the bill restricting firearms was put forth and enacted. In 1993 when the newly elected Liberals proposed new gun laws, the Auditor General of Canada reported no evaluation of the 1991 firearm legislation enacted after the Polytechnique shooting (Mauser, 2015). However, the Liberals continued to push Bill C-68 into law, despite no evidence of misuse among the handguns listed as prohibited. These are examples of instances when the Canadian government sought to answer to firearm deaths with stricter gun laws, despite evidence against the type of weapon as a factor. This may even be considered symbolic politics, where these changes are largely a distraction to allow individuals to pretend things are better than they are (Wolpert & Gimpel, 1998). However, in firearm suicides, the questions to ask involve firearm availability, firearm ownership and suicide. There is a fatal link between guns and suicide in Canada, and the government has argued that firearms in themselves are the issue. However, this may not always be the case as I argue an extensive number of sociological factors and the availability of firearms can both affect firearm suicide rates. Now, this is not to dismiss the theory that firearms do influence suicide rates. When the government enacts strict firearm legislation, it is implied that strict gun control will reduce the number of firearm-related deaths. Firearm availability is a factor in influencing firearm death rates, including suicide. However, several factors outside of the weapon itself influence an individual's likelihood of firearm suicide. By creating laws to combat firearm violence, there is also an effect on firearm suicide, even if not explicitly stated as the reason why the legislation is put forth.

Firearm Legislation and Suicide

Although Canada has thorough gun control laws on the safe acquisition, use and storage of firearms, there is no clear understanding of what aspects of legislation can affect firearm suicide rates. Furthermore, there is a lack of Canadian-based research on firearms in general, especially concerning firearm availability and suicide. Ferguson and Koziarski (2019) confirm this statement through a systematic scoping review of Canadian literature on firearms. They found only 34 peer-reviewed, empirical articles with the majority published before 2013 and before many legislative changes occurred (Ferguson & Koziarski, 2019). Of the articles found, many were related to public health and not sociology or criminology. Additionally, articles relating to gun ownership or suicide made up eight of the 34 articles.

Ferguson and Koziarski's systematic review of existing literature exhibits a problem with current sociological research on firearms and suicide. Firstly, there is an overall lack of research surrounding firearm availability and suicide that is required for a thorough review of Canada's gun control legislation. Without a deep understanding of the availability, use and effects of firearms, there will not be effective firearm suicide intervention/prevention strategies. Secondly, many studies are dated and do not include an examination of current legislation as there have been many changes in gun control laws over the past twenty years. In Ferguson and Koziarski's review, published firearm literature – this includes all literature on firearms, not just firearm suicides – was dispersed throughout 2000 to 2018, with four in 2004 as the highest number of publications in one year. This shows that existing firearm literature as a whole lacks

breadth and with such small numbers, the number of articles on firearm suicides is even lower.

From the articles that were examined in Ferguson and Koziarski's review, some have found that firearm legislation has had a positive impact on suicide rates involving a firearm. Leenaars et al. (2003) specifically examined Bill C-51, enacted in 1977, which prohibited automatic firearms and required permits. They found that there was a significant reduction in firearm suicides after the enactment of the bill, especially in males. However, there was also evidence for displacement among males as they were affected more greatly by the Bill than females. Due to this displacement, males were more likely to switch to other methods, although Leenaars et al. (2003) did not specify what the alternative methods would be.

Lester (2000) examined firearm availability and suicide in Canada from 1970 to 1995. He reported that firearms became less common during that period, mainly because of strict legislation in 1977 when Bill C-51 was introduced. In present society, many legislative changes have occurred that include stricter laws than those outlined in Bill C-51. At face value, it is easy to assume that because of the constant tightening of restrictions, firearms have become even less common. However, it is possible that the methods for obtaining firearms illegally have increased, although more research is needed. Bridges and Kunselman (2004) conducted a reliability check of Lester's (2000) examination by studying firearm availability and suicide rates between 1974 to 1999. They concluded that their findings aligned with Lester's in that the use of firearms for suicide became less common, while the use of other methods became more common.

In the existing literature on firearm availability and ownership, Pare and Korosec (2014) examined ownership in Canada between 1999 and 2004. They discovered that approximately one percent of Canadians own a gun for self-protection and gun ownership is most prevalent in rural areas. Furthermore, rural residency has a significant impact on gun ownership, as individuals living in rural areas are more likely to own firearms. This is mainly due to the use of firearms as a tool for hunting, pest control and target shooting. Kleck (1996) also discovered this in his research. He found higher frequencies of ownership in rural areas in Canada as most of the residents in rural Canada are in involved in farming or resource extraction, which often requires them to deal with wild animals that could endanger livestock or crops. Some individuals may also feel the need to protect an individual and/or their families from wild animals that are more common in rural communities/regions (Kleck, 1996).

In recent research, Langmann (2020) examined firearm legislation and suicide from 1981 to 2016. They found that there was no association between legislation and suicide. Furthermore, the number of firearm license holders had no effect on firearm suicide rates, and suicide by other methods. However, low income, unemployment and those of aboriginal status had an increased association with firearm suicide rates. This data shows that sociological factors have a significant impact on suicide, especially when coupled with the prevalence of firearms in a society. However, there were some limitations to Langmann's study, such as that data could not be categorized by age and province/territory due to small numbers. Furthermore, during the period of examination, Canada had implemented registration of all firearms and then removed that requirement in 2012. Therefore, it is difficult to test this change as Langmann's data examination

ended only four years after the removal of the registration requirement (Langmann, 2020). Evidently, there is a lack of research on firearm availability and suicide, especially in Canada. Although studies exist, they do not reflect the changes in legislation that have happened over time, which is why it is important to continue this research for as long as legislative changes occur.

Firearm Legislation, Social Change and Risk

Law is an instrument of social change, and as the previous sections outlined, Canada has made many changes in firearm legislation over the years. Therefore, researchers must examine the relationship between legislative and social change in the context of the development of legal institutions. Law can be seen as both an independent and dependent variable in society and it is embedded in social systems (Malik & Raval, 2007). Social change is defined as changes in interactions that transform social institutions (Malik & Raval, 2007). There are two ways law and social change interact: law changing society and society changing law. When law is changing society, it means the laws enacted require the members of the society to conform to it (Bhat, 2004). An example of this is the newly overturned Roe vs. Wade by the Supreme Court stating abortion is no longer a constitutional right in the United States, despite 75% of poll voters agreeing abortion should be decided by the person requiring it (Durkee, 2022). On the other hand, when society changes law, it means the law is enacted as per the society's needs (Bhat, 2004). These changes can come from movements, such as the feminist or LGBTQ2SIA+ movements that fought for legislative change allowing women to vote and the legality of gay marriage.

In terms of gun control, changes in legislation also reflect the two interactions of law and society. In Canada, notable firearm legislation changes are enacted as a response to events that have happened within and outside of the country to minimize risk. The response normally falls under law changing society unless a social movement is brought about to attempt to change law that the government has not done themselves. In the United States, the latter option seems to happen more frequently. This can be due to the complex nature of the legal and political system in the United States compared to Canada.

In the United States, the philosophy of government has three political doctrines: natural rights, republicanism, and constitutionalism (Zuckert, 1994). Canada also has a type of constitutionalism in its Charter of Rights and Freedoms. However, Canada also has a different view of liberty, democracy and government compared to the United States and in the broad scheme of things, seems to be more focused on the collective and not the individual when enacting laws. This affects how governments react to risk and enact laws. Canada enacts legislation for the good of the society's rights and freedoms, while the United States enacts legislation for society but at the individual level of rights and freedoms. Therefore, the sociological explanation for all these legislative changes in Canada comes from somewhat of an “overreaction” to the risk that affects society as a whole.

Anthony Giddens examined risk-based societies and how they organize in response to risk by stating when society is concerned with the future and its safety, it generates the idea of risk (Giddens & Pierson, 1998). Therefore, when a society is concerned with the rate of mass shootings, homicides, and other negative effects of firearm-use, they will respond to this risk by increasing tight restrictions on firearms,

including the purchasing, usage, transportation and storage. By this definition of risk and the response to it, suicide is not considered. The changes in legislation have never referenced suicidal actions as a concern for society and the driving force for the enactment of new legislation. However, as outlined in Durkheim's (1897/1951) theory of suicide, suicide rates are a collective phenomenon. This means suicide rates are a risk to the safety and future of society and should be treated as such when examining firearm legislation and its effects on firearm suicides. However, as suicide is seen as an individualistic phenomenon, governments do not consider suicide on a macro level and how it collectively contributes to the suicide rates the society faces. Suicide prevention is then placed on specific sectors when it is the government that needs to take the lead in developing and implementing collaborative multi-sectoral strategies for suicide prevention through policy and services. That is why this thesis aims to address these issues through an understanding of how legislation affects rates of suicide, which then may create risk of firearm suicides within society along with other social factors, furthering the overreaction by governments to that risk.

Chapter Three: Methods and Analytical Approach

To answer the question of how changes in firearm legislation and sociological factors influence firearm suicide rates in Canada, this thesis used Statistics Canada mortality data to examine trends in suicide rates after certain legislative changes between 2009 and 2020. These changes include Bill C-19 (2012), Bill C-42 (2015), and Bill C-71 (2019). Licensing rates from 2009 to 2020 were also examined to understand the connection and trends of firearm availability and firearm suicides in Canada. Secondary data was chosen as it included all provinces and territories, allowing for a larger and diverse sample to examine as opposed to one specific area of analysis. Furthermore, mortality data is difficult to obtain as an independent researcher. Therefore, national statistics are easier to access and utilize.

Data and Definitions

Suicide was defined based on International Classification of Diseases codes (ICD-10 1990-2020: Intentional Self Harm X60-X84, Intentional Self-Harm by Handgun Discharge, Rifle, Shotgun, and Larger Firearm Discharge, and Other and Unspecified Firearm Discharge X72-X74). Mortality data was obtained from Statistics Canada's Vital Statistics Death Database from table 13-10-0392-01 and 13-10-0156-01. Divorce rates were obtained from Statistics Canada table 39-10-0053-01, unemployment rates were obtained from Statistics Canada table 14-10-0327-01, and gender and regional breakdown are found within the tables listed above. As Langmann (2020) was the first to use licensing as a proxy for firearm availability, this thesis will also use licensing rates in Canada to examine availability as a factor. Licensing rates by region were obtained from

the Canadian Firearms Program annual reports. This is an important factor to add as studies have found that firearm licensing does affect the rate of firearm suicides and suicides rates (Bridges, 2002; Bridges & Kunselman, 2004; Gabor, 1994).

Measures

The variables used in this analysis included suicide as the dependent variable, measured by the rate of suicide in a population per 100,000 people in Canada, and a dummy variable for time representing the enactment of legislation, where 0 is coded for pre-legislation and 1 is coded for post-legislation, as part of the independent variable under examination. Years in the post-legislation category begin with the year after the legislation was enacted as the month of the change in legislation could be, for example, at the end of the year, meaning the legislative change is not reflected in the rates for that current year. Cause of death (includes all ICD classifications other than Intentional Self-Harm by Handgun Discharge, Rifle, Shotgun, and Larger Firearm Discharge, and Other and Unspecified Firearm Discharge X72-X74), is categorized into firearm death or other, and a dummy variable from the cause of death variable is used, where 0 is coded as other suicides, and 1 is coded as firearm suicides. An interaction variable is used for the cause of death dummy variable and the dummy variable for time for each legislation period range.

The control variables included in the model were sex (given as male/female in the Statistics Canada data), rates of unemployment (rate per 100,000 people), and rates of divorce (rate per 100,000 people). Other control variables included a province category and firearm ownership, which are used to analyze suicide rates and firearm licensing by

province. Firearm ownership was given as a rate per 100,000 people in Statistics Canada data. However, the variable was recoded to be a percentage based on the licensing rates and population of each province.

Statistical Analysis

This study is built on the hypothesis that firearm legislation enacted in 2012, 2015 and 2019 were not associated with a reduction in firearm suicide rates in Canada. The analysis of this data follows a similar pattern to a study by Langmann (2020) as the DiD model used in their research is a strong model that produced interesting results that can be replicated in this study. Therefore, I used a similar foundation for the methods as I felt it could be built upon and applied to more recent legislative changes that have occurred since the years examined in their study.

Langmann's (2020) methods include a DiD technique that compares a control group to a treatment group that has been exposed to the effects of firearm legislation. This is the method also used in this thesis. In Langmann's case, treatment groups were firearm suicides and homicides with a firearm. In the study of suicide, suicide by hanging was used as the control group as firearm legislation would have no effect on hangings. In the examination of homicides with a firearm, the control group was non-firearms homicide. The DiD model was constructed to observe changes in the control and treatment groups before and after the implementation of legislation. Using this model mitigates the effects of external confounding variables and selection bias when choosing independent variables (Langmann, 2020). Furthermore, many statistical designs are unable to control for crossover from one group to another through sensitivity tests. In Langmann's (2020) case,

as hanging was used as a control, it is expected that firearm legislation would not influence hanging suicides or non-firearm homicide. However, it is possible that individuals without access to firearms would choose another method, therefore causing a crossover. Constructing the DiD model can account for the crossover by including pre and post trends (Langmann, 2020). Employing a DiD model instead of a typical multiple regression model is more convenient as this framework allows to control for covariates and obtain standard errors for the treatment effect to see if it is significant. Furthermore, DiD models are more applicable to a wider array of data than standard fixed effects models. Therefore, this study employed a DiD model instead of a typical regression model.

Suicide rates were examined from 2009 to 2020. The year 2009 was chosen as a starting point for data analysis as it may take some time to see notable changes from the impact of new firearm legislation and therefore should begin before the first impact year. The three impact years were chosen because in 2012, Bill C-19 was enacted, which removed the requirement to register firearms that are neither prohibited nor restricted. Bill C-42 was enacted in 2015 to reduce penalties and the paperwork required for gun licensing and transportation, provide cabinet with the ability to override the RCMP on decisions about which weapons should be restricted or prohibited, and required first-time license applicants to take part in a firearms safety course. Lastly, the year 2019 was chosen as Bill C-71 was enacted to extend background checks before obtaining a firearm and require authorization to transport restricted and prohibited firearms to locations other than a shooting range.

The primary model for this study contained dummy variables for the periods before and after legislation was enacted. The period after the 2019 legislation was enacted does not have significant data published yet to be able to form a conclusion on the influence of legislation on firearm suicides. However, the rates of suicide were still examined in 2020 data to see if there was the beginning of a change in firearm suicides. Pre-legislation follows two groups: 2009-2012 and 2009-2015, and post-legislation contains two groups: 2013-2020 and 2016-2020. The two groups were formed based on the idea that firearm legislation enacted in that same year would not influence suicide rates yet. Also, the month of the enacted legislation is unknown and could be at the end of that calendar year for example, which means the months before that did not have suicide rates influenced by that change in legislation. Therefore, that is why the year of the enacted legislation is included in the pre-legislation group and not the post-legislation group. The time periods were also chosen to overlap instead of including a pre and post group between the legislation groups as firearm legislation takes time to fully come into effect. For example, the most recent legislative change in 2020 included a two-year amnesty period for owners to dispose of, export, register, or sell the now illegal firearms through a buy-back scheme without any criminal charges. This means if there are changes in suicide rates due to this change in legislation, they will not start to be significant until 2022 when the amnesty period is over. The firearm legislation enacted in the three instances also affect different aspects of firearm ownership and use. Therefore, allowing an overlap of the pre- and post-legislation years would not create significant difficulty in examining the effects of each law.

Another model was constructed to examine percentages of the population that hold firearms licenses in each province. The rates of suicide for both firearms and other methods were included with each province to examine trends among firearm ownership and suicide to understand if higher percentages of firearm licensing, and therefore firearm ownership, increase suicide rates.

Difference in differences statistical analysis was conducted using Stata/BE version 17 (StataCorp LP, College Station, Texas). Significance levels were set at $p < 0.01$, to reduce the possibility of a Type I error and to show some significance exists, with 95 percent confidence intervals (CI).

Chapter Four: Results

The results of the secondary data analysis show interesting results in examining firearm availability, legislation, and sociological factors in influencing suicide rates. In descriptive statistics, the mean rate of suicide from 2009 to 2020 was 8.5, the mean rate of divorce was 8.4, and the mean rate of unemployment was 8.1. The firearm and other suicide rates for males in 2009 were 3.3 and 14.5 per 100 000, while in 2020 the firearm suicide rate was 2.6 and 10.8 per 100 000 individuals for other suicides. Figure 1 shows the rate of suicide for firearm suicides and other suicides per 100 000 people for males from 2009-2020.

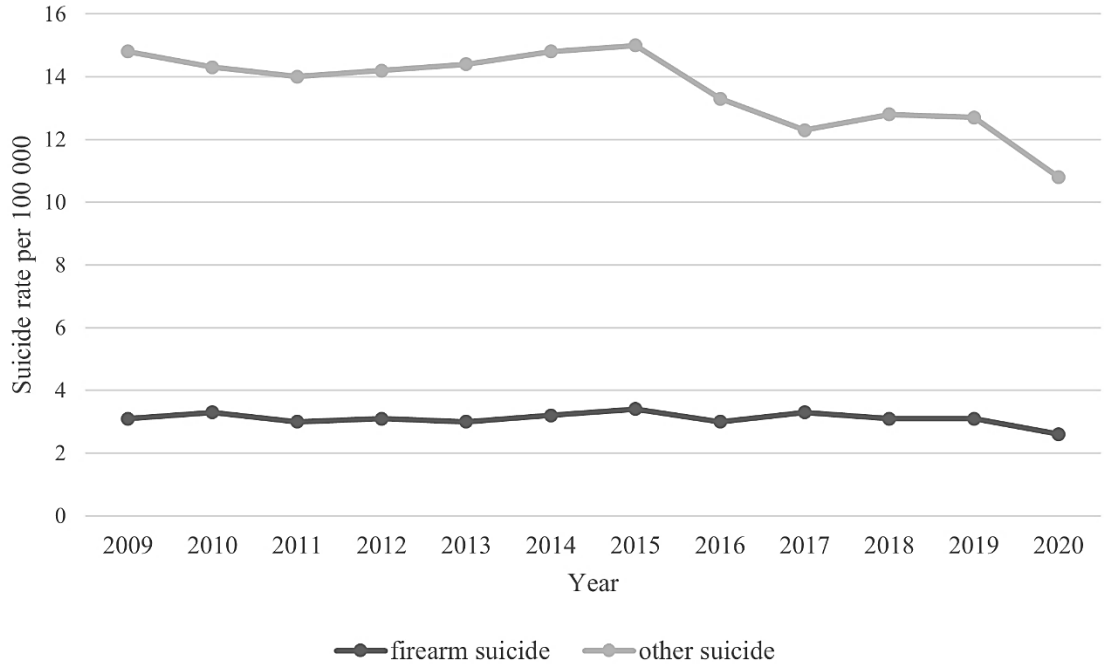

Figure 1: Male Suicide Rates per 100 000 People by Year

The rate of firearm suicides was steady from 2009 to 2020. However, there was a slight increase in firearm suicide rates in 2015 (3.4 per 100 000), before dropping again in 2016 (3 per 100 000). The rate of all other types of suicide for males peaked in 2015 with

a rate of 15 per 100 000 before gradually dropping. Although it is too early to examine the effects of the 2019 legislation, we can see from this graph that both firearm and other suicides for males has declined since 2019. Therefore, it is possible that both rates will have continued to decline since 2020. For females, firearm suicide rates were not significant enough to report as the rate stayed relatively the same from 2009 to 2020 with a slight increase in 2013, followed by a decrease from 2015 to 2016. Furthermore, research has found that males are more likely to use firearms as a method for suicide, which is why this data is centered around male groups.

The difference in differences regression model was used to examine effects of firearm legislation on suicide. Two legislation years were included: ending the long-gun registry in 2012 and the common sense firearms licensing act in 2015. As mentioned before, the 2019 legislation was not included in statistical analysis as there was not enough data published since the change. The most recent data only includes 2020 firearm suicide rates. Table 1 shows the overall estimated treatment effect after including the dummy variables for the time group (pre- and post-Bill C-19) and the treatment group (firearm and other suicides) as well as the interaction between the two.

Table 1: DiD Results for Suicide Rates Affected by Bill C-19

Post-Treatment	0.388
	(1.455)
Treatment	-8.960***
	(1.668)
Diff in Diff	0.121
	(2.057)
Constant	12.714***
	(1.180)
R-squared	0.121
No. observations	608

Standard errors are reported in parentheses.
*** p<0.01 ** p<0.05 * p<0.1

The overall regression was statistically significant (R-squared = 0.12, F = 27.66, $p < 0.01$). As seen in the table above, the post-treatment variable has a positive coefficient, meaning the rate of suicides were trending upward over time. The treatment variable has a negative coefficient, which means firearm suicides, regardless of changes in firearm legislation, decreased. Lastly, the interaction variable, Diff in Diff, has a small positive coefficient which shows that firearm suicides after the change in legislation did increase slightly. Table 2 shows the same regression model with sex, divorce rates and unemployment rates added.

Table 2: DiD Results for Suicide Rates Affected by Bill C-19 With Predictor Variables

Post-Treatment	0.139 (0.345)
Treatment	-7.591*** (0.353)
Diff in Diff	0.555 (0.435)
Unemployment	0.028 (0.412)
Divorce	0.414*** (0.999)
Males	6.373*** (0.222)
Constant	12.714** (1.180)
R-squared	0.827
No. observations	468

Standard errors are reported in parentheses.
*** p<0.01 ** p<0.05 * p<0.1

The overall regression was statistically significant (R-squared = 0.827, F = 367.5, p < 0.00). The post-treatment, treatment and Diff in Diff variables have similar coefficients to Table 1, where the rate of suicides was still trending upward over time, firearm suicides were decreasing despite changes in legislation, and firearm suicides increased slightly after legislation. In the added predictor variables, all three increased the rate of suicides. Holding all other variables constant, as unemployment rates increased by one point, suicide rates increased by 0.028 (p > 0.1). In divorces, as the rates increased by one point,

suicide rates increased by roughly 0.4 ($p < 0.01$). Lastly, sex had the biggest effect on suicide rates, as was to be expected. Male suicide rates were 6.37 points higher than that of females.

Tables 3 and 4 follow the same model as Tables 1 and 2 but have the second time variable to account for the change in legislation in 2015.

Table 3: DiD Results for Suicide Rates Affected by Bill C-42

Post-Treatment	-0.895 (1.407)
Treatment	-9.028*** (1.26)
Diff in Diff	0.369 (1.99)
Constant	13.329*** (0.891)
R-squared	0.121
No. observations	608

Standard errors are reported in parentheses.
*** p<0.01 ** p<0.05 * p<0.1

The overall regression was statistically significant (R-squared = 0.121, $F = 27.8$, $p < 0.00$). The post-treatment variable has a negative coefficient, meaning the rate of suicides were trending downward over time. The treatment variable also has a negative coefficient, which means firearm suicides, regardless of changes in firearm legislation, decreased. Lastly, the interaction variable, Diff in Diff, has a positive coefficient, which shows that firearm suicides after the change in legislation did increase slightly.

Table 4: DiD Results for Suicide Rates Affected by Bill C-42 With Predictor Variables

Post-Treatment	-0.871***
	(0.325)
Treatment	-7.788***
	(0.265)
Diff in Diff	1.399***
	(0.418)
Unemployment	0.002
	(0.041)
Divorce	0.288***
	(0.096)
Males	6.417***
	(0.220)
Constant	4.129***
	(1.038)
R-squared	0.83
No. observations	468

Standard errors are reported in parentheses.
*** p<0.01 ** p<0.05 * p<0.1

This fourth model was also statistically significant (R-squared = 0.83, F = 374.8, p < 0.00). This was the most statistically significant table. Post-Treatment and Treatment variable did not change significantly from Table 3. However, the treatment variable is decreasing less than it was in Table 3. However, it is still negative. The Diff in Diff variable is larger this time, meaning firearm suicides after the legislation came into effect increased more at 1.399 points (p < 0.01). For the unemployment variable, as unemployment rates increased by one point, the rate of suicides only increased by 0.002

points. Divorce also did not increase suicide rates by much compared to Table 2 (0.288, $p < 0.01$). As expected, males had suicide rates 6.417 points higher than females ($p < 0.01$).

Examining the legislative effects on firearm and other suicides more closely, I conducted another Difference in Differences model that specifically examine the before and after of the control (other suicide) and treated (firearm suicide) variables. The results can be seen in Tables 5 and 6.

Table 5: Difference in Differences Estimation Results for Bill C-19

Bill C-19 (2012) Ending the Long-gun Registry	Rate of Suicides	Rate of Suicides with Controls
Before		
Control (Other Suicides)	12.714	2.433
Treated (Firearm Suicides)	3.755	-5.158
Diff (T-C)	-8.960*** (1.668)	-7.591*** (0.353)
After		
Control (Other Suicides)	13.102	2.572
Treated (Firearm Suicides)	4.264	-4.464
Diff (T-C)	-8.838*** (1.203)	-7.036*** (0.435)
Diff-in-Diff	0.121 (2.057)	0.556 (0.435)

Standard errors are reported in parentheses.
*** p<0.01 ** p<0.05 * p<0.1

The rate of firearm suicides after 2012 when the legislation came into effect increased by 0.121 compared to other suicides. When adding controls, the rate increased by 0.556 compared to other suicides.

Table 6 saw the same trends in firearm suicide rates after the legislation came into effect. After Bill C-42 was enacted in 2015, the rate of firearm suicides increased by 0.369. When adding controls, the rate of firearm suicides after the legislation also increased by 1.4 ($p < 0.01$).

Table 6: Difference in Differences Estimation Results for Bill C-42

Bill C-42 (2015) Common Sense Firearms Licensing	Rate of Suicides	Rate of Suicides with Controls
Before		
Control (Other Suicides)	13.329	4.129
Treated (Firearm Suicides)	4.301	-3.659
Diff (T-C)	-9.028*** (1.261)	-7.788*** (0.265)
After		
Control (Other Suicides)	12.434	3.258
Treated (Firearm Suicides)	3.775	-3.130
Diff (T-C)	-8.659*** (1.540)	-6.388*** (0.323)
Diff-in-Diff	0.369 (1.99)	1.4*** (0.418)

Standard errors are reported in parentheses.
*** p<0.01 ** p<0.05 * p<0.1

The final model was an examination of firearm and other suicide by percentage of the population with firearm licenses, grouped by province. In Figure 2 below, much of the cluster of provinces sits between 5 and 20 percent of the population with firearm licenses, 0 to 5 rates of firearm suicide per 100 000 and 0 to 10 rates of other suicide by 100 000. The outliers in this figure are Nunavut, Northwest Territories and Yukon. This is to be expected as the territories have higher rates of suicide, as examined in previous sections.

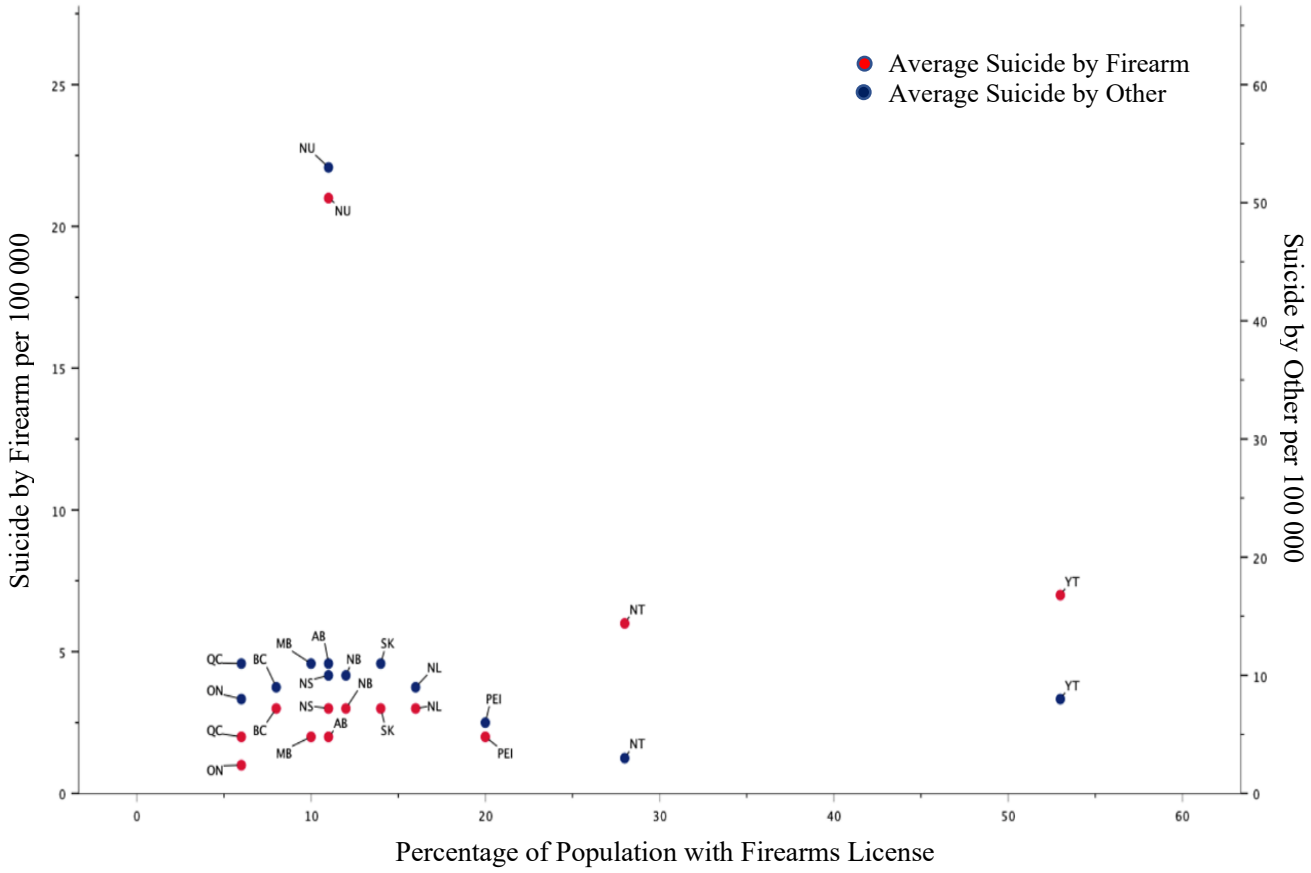

Figure 2: Firearm and Other Suicides by Percentage of Population with Firearm Licenses

Interestingly, Nunavut has a lower percentage of the population with firearm licenses, but higher percentages of suicide in both firearm and other categories. Yukon has higher percentages of the population with firearm licenses, but lower suicide rates in other suicides, and slighter higher in firearm suicides. Lastly, Northwest Territories sits in the middle, but still outside of the cluster, with roughly 28 percent of the population with a firearms license, but a low rate of other suicides and slightly higher rate of firearm suicides. In regression analysis, there was a slightly increasing association between

percentage of firearm license holders and firearm suicide rates (firearm suicides increasing by roughly 7 percent as licensing increases). However, there was no statistical significance between the association to confirm that higher rates of license ownership increase firearm suicides.

Chapter Five: Discussion

This study examined the impact of firearm legislation, firearm availability, sex, unemployment, and divorce on firearm suicide rates in Canada. As Langmann (2020) found, there does not appear to be a reduction in suicide after the enactment of new Canadian firearm legislation. In fact, some rates of death by suicide increased slightly after the enactment, and then dropped back down again. This can likely be explained based on previous findings, being male, experiencing divorce/higher divorce rates, and higher rates of unemployment, which have increased the rates of death by suicide in both firearm and other forms of suicides (Hasselback et al., 1991; Leenaars & Lester, 1989; Varnik et al., 2008; Yur'yev et al., 2012). As these sociological factors are outside the scope of firearm legislation, it cannot make the changes required to reduce firearm suicides. Other studies have also found that firearm legislation may have no effect on reducing firearm suicides (Alpers & Wilson, 2013; Bandeira, 2013; Langmann, 2020). However, studies that have found some reduction in firearm suicides state that individuals possibly turned to other methods. Therefore, more research on the topic of firearm legislation and its effects on firearm suicide rates is required.

The Bills examined in this thesis (Bill C-19, Bill C-42 and Bill C-71) were changed following the law changing society idea that was outlined previously. As law is an instrument of social change, it is important to consider the needs of society on multiple fronts such as public health, economy, education, and other supports. As Anthony Giddens (1998) outlined, risk-based societies respond to risk by increasing and tightening measures to ensure its safety. Bill C-19, C-42 and C-71 were all enacted for this reason; to reduce risk by increasing tight restrictions on firearms, including the purchasing, usage,

transportation, and storage. However, suicide is not considered in these legislative enactments despite 75% of firearm deaths consisting of firearm suicides. Legislative changes have not referenced suicidal actions as a concern for society until Bill C-71 and Bill C-21 in 2020 and 2022. Despite this step in legislative changes that reflect the risk of firearm suicide, removing firearms from the hands of an individual struggling mentally will not significantly change the outcome, especially if other studies are finding substitution methods, where individuals use other methods for suicide, or perhaps find access to a firearm whether they own one or not (Biddle et al., 2018; Langmann, 2021; Leenaars et al., 2003). Therefore, if that is the case, firearm legislation by itself will not drastically reduce the 75% of firearm deaths that happen in Canada each year.

One obstacle in reducing firearm suicide rates is that there is a lack of awareness and conversation on the issue, especially in Canada. To be aware of the issue is to understand the collective consciousness as outlined by Durkheim (1897/1951). An individual views themselves a certain way in a society that shares a certain set of ideas and beliefs. When there is a low level of collective consciousness, individuals may not see the same meaning in their lives and decide to end it, while a high collective consciousness can make an individual feel that they must do everything they can for the group, including ending their own lives (Durkheim, 1897/1951). There can also be culture conflicts within communities due to the lack of willingness to understand each other's cultures. This creates conflicting behaviours and philosophies that break the collective consciousness. Therefore, understanding levels of collective consciousness and any conflicts within society is important in understanding the social problems that surround firearm suicides.

The current understanding of suicide is also impacted by the psychological frame in which suicide is placed. Although there are psychological aspects that affect an individual's propensity for suicide, that is not the only factor influencing suicide rates around the world as I have examined in this thesis. It is possible that suicide is considered a psychological phenomenon because mental illness is a major risk factor. However, the social factors and environments that bring an individual to suicide, coupled with mental health issues, are what must be studied in their entirety to understand the complexity of suicide. This is not the case today in many instances as studies and articles cite personality traits, emotions and body dysregulation as the key factors influencing suicide (Bachmann, 2018; Levi-Belz et al., 2019; Nugent et al., 2019; Too et al., 2019). Therefore, multidisciplinary research and action is important in firearm suicide studies to understand the effects from sociological, psychological, and legislative perspectives to create laws that can aim to reduce the rate of firearm suicides.

Another issue today surrounding suicide and mental health is the stigma that is attached. The language alone creates stigma, as terms commonly used today indicate a criminal overtone to it such as "committed suicide", or frame suicide as a goal to obtain by stating "failed suicide attempts" (Olsen, 2011). These words alone are detrimental to discourse surrounding suicide, especially when working through methods to reduce the risk of suicide. On the individual and their family, this terminology can be discouraging as it frames the act in a negative light and creates a sense of shame (Sommer-Rottenburg, 1998). Misunderstanding, ignorance, and fear are at the root of suicide stigma. The criminal overtones of the language itself can increase stigma, while the notions that individuals who end their lives, or attempt to, are attention-seeking or cowardly. These

accusations label individuals who then internalize it, which then affects their mental health. Gendered stigma is also prevalent in society. Females tend to internalize the negative language and labels, while men are concerned with social disapproval if they were to talk about their mental health problems (Fox et al., 2018; Stillion et al., 1989). Therefore, men who experience this stigma are less likely to seek support, which can lead to a more lethal choice for their suicide method (Canetto and Sakinofsky, 1998). Stigma can also create a significant barrier to prevention and is individual and social, both which lower the willingness to seek help. It is considered a social stressor that creates negative emotional reactions, withdrawal and hopelessness and can increase social isolation and reduce the feeling of belonging (Keller et al., 2019).

As examined in the cultural section of this thesis, unique cultures apply unique meanings to suicide. Some view it as a sin while others view it as acceptable for grief or pain. Cultural differences in the causes of stigma are not the same across populations. Some areas, such as rural populations, which have higher firearm ownership rates, see more suicidality as the lack of economic or social resources can increase self and social stigma, further increasing social isolation and reducing feelings of belonging (Keller et al., 2019). Religion has also played a significant role in adding to suicide stigma. Due to misinformation dated back to biblical teachings on the suicide of Judas, some Christians today still consider suicide a sin (Moksony & Hegedus, 2021). However, demonizing suicide is outdated and ignores the important factors that are the real cause of suicide. Therefore, it is important to change attitudes and break down the stigma that has been built up for so long among faith leaders. Having those open discussions on suicide stigma can allow individuals to practice their faith and seek help from their congregation and

peers without feeling as though their thoughts and feelings are sinful. This way, individuals can address the factors that are influencing their suicidality and work towards a positive outcome.

Examining control factors in this study, divorce is a factor that negatively affects an individual's life, even if the divorce is initiated by the individual experiencing negative feelings (Kposowa, 2003). It creates an intense amount of stress and strain on their life and relationships. This outcome can fall under Durkheim's (1897/1951) definition of anomic suicide, which involves sudden changes in an individual's life. Moral guidance is weak, and the individual is left with no clear norms or how to adjust. The same can be said for unemployment, losing one's job can cause a rapid downfall that may lead to homelessness or other negative factors such as substance abuse (Hasselback et al., 1991). This sudden change can again cause an individual to feel less secure in society and lack guidance.

The research in this thesis shows that males have a higher rate of suicide than females, despite the rate of attempts being relatively equal between the two sexes. Therefore, seeing that these factors increased suicide rates was not a surprise. The rate of suicide for males is much higher than females due to the more lethal and violent methods they choose (Jaworski, 2014). Furthermore, much of the mental health initiatives and supports that exist are geared towards women, which is just as important. However, those same support and initiatives may not work for men. As the research shows, men are less likely to reach out for help with depression and suicidal thoughts (Jaworski, 2014). They internalize their negative feelings because they are worried about what society will think of their suicidality. Therefore, they attempt suicide without any "warning". As men are

far more likely to die by suicide because they choose more lethal methods, there is no doubt that firearm access should be examined for this exact reason.

Provincial effects, such as geographical location and history of firearm suicide rates were interesting to examine. As seen in Figure 2, the territories had the outlier rates of ownership and suicide. There are many factors that can contribute to these numbers. In Nunavut, the percentage of the population with firearm licenses was in the middle of the cluster of the other provinces. However, the rate of firearm and other suicides was the highest. This could be attributed to the prevalence of firearms in Nunavut. In Inuit communities, such as Nunatsiavut in Labrador, the rate of suicide is 25 times higher than the rest of Canada (Pollock et al., 2021). The high rates of suicidal ideation and negative feelings derive from intergenerational trauma, substance use, familial issues, relocation, and depression (Kirmayer, 1994). Therefore, they are at a higher risk of suicidal ideation and fatal/non-fatal suicide attempts (Ward and Fox, 1977). One hypothesis for the lower rates of firearm ownership but higher rates of suicide could be attributed to firearms as a norm in society. If the rates of ownership are lower, firearms are not as prevalent in their community. Therefore, it is possible that when they have access to a lethal method that is not a norm in their society, they are more likely to choose that method. For example, kitchen knives are prevalent in society, but individuals do not see it as a tool for suicide, especially not fatal attempts. However, if we lived in a society where kitchen knives were not prevalent and we only had our hands as a method for suicide, we would choose the kitchen knife if it ever became available to us. That is because it is not something we use or have grown accustomed to in our society. We will look at that object as a lethal method for suicide, rather than a tool for cutting food.

In the Yukon, firearm licensing rates were highest, but the rates of suicide were not significantly higher than the cluster of provinces. As mentioned previously, this could be due to the prevalence of firearms in their community, and therefore they are accustomed to having them around and using them for hunting and such. They do not see it as a tool for lethal suicide, but rather a tool crucial for survival. In Northwest Territories, firearm ownership rates fell in the middle, with rates of firearm suicides higher than the provincial cluster, and other suicides lower than the cluster. These again could be attributed to firearms as a norm in their communities. However, to understand all these data, more research would have to be conducted to understand firearm ownership in the territories, how firearms are viewed and how that is affecting suicide rates.

In examining firearm suicide before and after legislation, there were slight increases in rates after legislation. The 2012 Bill C-19 ended the long gun registry that was put in place to require the registration of non-restricted firearms. As there were flaws with the program, many gun owners were happy to see it go. Some police studies (Alpers & Wilson, 2013; Bandeira, 2013) have found that registering guns does not reduce crime or suicide in the first place. Therefore, what is the answer to this issue? Men are still using firearms, registered or not, to attempt and ultimately die by suicide. If they do not have a firearm, they will attempt another lethal method such as hanging. This is explained as a substitution effect, where individuals will seek other methods when one is not available to them (Langmann, 2021). However, if 75% of firearm deaths in Canada are suicides, men are still choosing that as the method of choice. Therefore, the government should evaluate the legislation they wish to put forth that creates “red flag” and “yellow flag” laws that would allow individuals to apply to the court for immediate removal of an

individual's firearms or suspend review of an individual's application. Limitation of access to lethal methods are called means restriction and is an important strategy for suicide prevention (Yip et al., 2012). This proposal is a step in the right direction. However, as men are statistically known to not seek help for their suicidal thoughts and negative feelings, the individuals who could apply for the removal of firearms, such as concerned friends and family, may not even know to do so. Therefore, it is imperative that resources and mental health initiatives understand the facts that influence a man's suicidal ideation and unwillingness to seek help.

Limitations and Future Directions

There are numerous limitations in this analysis. Firstly, there is a lack of research on the topic of firearm availability and suicide. This means that there was not a large amount of previous research to aid in formulating the analysis for this thesis. However, because the very reason for studying firearm availability and suicide in this thesis is because of the lack of attention it has received in research, it makes the situation dual-edged. Furthermore, due to the lack of research on the topic of firearms and suicide, there was limited access to data, and it was difficult to include all aspects of analysis demonstrated to be of significance based on the existing theoretical and empirical research. I would have liked to include, for example, additional sociological measures/variables, including age, mental and physical health, previous attempts and suicidal ideation as found significant in the extant research (Bechtold, 1988; Bertolote & Fleischmann, 2002; Haw et al., 2013; Renemane, Kivite-Urtane & Rancans, 2021; Wissow et al., 2001), and explore further nuances within suicide-related phenomenon,

such as studying the effects of legislation on suicidal attempts as well. It would be interesting for future research to include suicide attempts and possibly suicidal ideation in studying the effects of firearm legislation as we have seen that women have higher rates of attempts than men (Varin et al., 2021). Therefore, this may be the reason why the data in this analysis showed higher rates of suicide in males, without much to show for females.

Another limitation involving the foundation of the analysis is in the legislation chosen. Since the creation of this analysis and thesis, there have been two laws that have been proposed or enacted that involve firearms. The first one was in 2020 after the mass shooting in Nova Scotia, and the most recent one was this year in 2022. The legislative change in 2020, as described in the literature review, involved banning assault-style weapons. Prime Minister Trudeau allowed a one-year amnesty period for individuals to get rid of those firearms[5]. In one of the many 2022 firearm legislation changes, Bill C-21 introduced the red and yellow flag law which removes firearms from those deemed a danger to themselves and others. These two laws are too recent to study the effects of in this analysis. However, they are important milestones to include in future research as both are notable legislative changes that can have huge impacts on firearm suicides, especially with the new Bill C-21 law, which will be the first to specifically target suicide and firearms.

Regarding the data, a smaller time period for the enactment of legislation was used, which can make it difficult to see the trends in-between the dates of the new

[5] In March 2022, the amnesty period was extended to October 30th, 2023 to allow time for the Government to implement the buyback program.

legislation. Choosing longer periods in between legislative changes can in understanding trends as it allows for more time for the legislation to have (or not have) an effect on the groups studied. Based on the types of tables used, specific types of suicide such as hanging, and firearm suicides could not be broken into age and provincial categories because of low numbers. Since the Langmann (2020) study, there have not been any notable table creations by Statistics Canada that include the data required for this secondary analysis, and one of the tables has also been archived. Therefore, to use age and provincial categories in their data, future researchers will have to obtain data themselves, or use new tables that Statistics Canada will hopefully have released that includes the required information for analyses.

Another limitation with data, as also discussed in Langmann's (2020) study is that reports of suicide could be incorrectly reported by both the coroner and other individuals such as family members. As mentioned in previous sections, some families prefer other explanations for a family member's suicide as they do not accept suicide as a case of death. Bias in these cases can create suicides to be classified as accidental deaths and vice versa, and where accidental deaths were not included in this analysis, actual suicides classified as accidental deaths would not have been included. Therefore, future research must attempt to acknowledge this bias and adjust data methods accordingly to easier validate the data as true suicides and accidental deaths, although it may prove difficult. Future research should also consider the examination of other variables outlined in this thesis but not examined as there are numerous sociological factors that can contribute to suicidality. Again, as there is a lack of literature on this subject, it is difficult to examine the factors that may be associated with firearm legislation and suicide. However, future

research should be able to examine trends within the current social sphere to determine what factors to analyze, aside from what literature does exist on the topic.

Another limitation in the data is that in secondary analysis, the data is collected by another party for some other purpose. This means there is not as much control over characteristics of the data such as collection methods, questionnaire development and sample as it would be if the data was collected by the researcher themselves. It also may not answer the specific research questions or contain specific information that the researcher would like to have in the study. Therefore, this analysis would have produced better results if my own data was obtained, giving control over all aspects of the data. However, in mortality data, this can be relatively difficult to obtain rather than using federal data as samples are deriving from individuals who are deceased.

Another issue with secondary data method of analysis is that variables may have been defined or categorized differently than the researcher wanted. In the data used for this study, the variables for gender were variables for sex, which means there was only the option to input male or female in the data. First, gender identity (instead of the potentially harsh/offensive "assigned sex at birth"-type measures) should be measured explicitly asking individuals to identify as for example, man, woman, gender diverse, transgender, non-binary two-spirited, gender fluid, gender queer, agender, among others. The use of biological sex terms is very narrow and limited in meaning and interpretation. Also, sexual identity and orientation are unique sociological constructs and factors and thus should be incorporated in the study of death by suicide in Canada. However, as seen in the literature review, members of the LGBTQ2SIA+ community face many challenges that may lead to poor mental health and suicide (Johns et al., 2020). Therefore, examining

the data in these groups is important, especially in current research. However, the data collected by Statistics Canada did not have an inclusive list of gender identities to choose from, which means individuals who have died by suicide may be placed into a male or female category and not into the gender they identified with, therefore altering the true meanings of the data. The terminology was also used interchangeably in many of the research referenced in this thesis, which causes confusion when referencing findings in the literature review. Due to this, I recommend that all future research, on this topic or others, be more gender inclusive when collecting data and become familiar with the differences between sex and gender terminology.

In data analysis limitations, the multiple regressions conducted in this analysis can cause Type I errors. Data analysis in this thesis used significant levels of less than 0.01 to account for the possibility of a Type I error. Future research must also be careful in using confidence intervals of less than 0.01 however, as lowering the significance level may lead to a situation where the hypothesis test may not capture the true difference of the test. Therefore, other tests may be required to account for Type I errors and the effects of small significance levels. It is also important to examine data from different ways, as well as similar ways, to understand patterns and validate the results of other studies. Therefore, I suggest that future research use different models for analysis to attempt to show that the results are similar across methods and further validating the study.

Future research should study the impact of COVID-19 on firearm suicides as there have been studies examining COVID-19 and suicides generally. The impact of the virus has affected mental health, the economy, stress, suicide, and social and political spheres. As countries were shut down, individuals were forced to stay inside, which can severely

affect mental health. Furthermore, as the virus worsened, jobs were cut and workers were left with no employment, which affected the economy. These factors then contribute to stress which is found to lead to suicide. Some studies on COVID-19 and suicide risk have surprisingly found that there was not an increase in suicide after the pandemic began as many researchers predicted (Brookman, John & Nasir, 2022; Faust et al., 2021; Pirkis et al., 2021). The lack of change in suicide rates could be because governments were aware the pandemic can affect mental health, therefore they were introducing more suicide preventative measures such as strengthening mental health services or developing telemedicine services (Efstathiou et al., 2022). However, some studies did find an increase in suicidal ideation and attempts (Dubé et al., 2021; Efstathiou et al., 2022). Therefore, future research should take this into consideration when examining trends from when the pandemic started and onward.

Social and Policy Implications

The necessity of a study such as this centers around the need for effective suicide prevention methods from multiple areas including social welfare, education, and health. The results of this analysis show that firearm legislation alone may not reduce firearm suicide rates, based on the little change in data discovered, which means quick solutions from the government in response to specific instances of suicides and clusters of suicides will not successfully reduce the rates. This is even more relevant to firearm suicides, where quick solutions for gun control in response to gun violence do not highlight the need for effective legislation that tackles the use of firearms for suicides. Therefore, the findings of this thesis can be used to facilitate conversation surrounding firearm suicides

and the factors that contribute to the phenomenon, which then aids in deciding what sectors are required to create suicide-reduction strategies. Bill C-21, the newest legislation that is aimed at tackling suicides, is a great start. However, there should also be a consideration of the sociological factors that influence suicide, such as social, environmental and health factors, which can facilitate effective suicide prevention strategies that consider the future of society and risks associated with modernity and social change.

Social Welfare

Social welfare systems are designed to provide support to individuals and families during times of socioeconomic insecurity. As Durkheim (1897/1951) theorized, abrupt changes in an individual's life can cause them to feel detached and experience less social regulation, and a higher level of anomie can then increase the possibility for suicidality. In times of economic crisis, social and family bonds are also weakened due to unemployment and poverty, which increases rates of suicide (Yur'yev et al., 2012). This study focused on areas such as unemployment, divorce, and sex as factors that may influence firearm suicide rates. Based on the findings, these factors, along with changes in legislation, have increased the rate of suicide in Canada. Therefore, these findings show that focused social services and benefits could play a crucial role in preventing firearm suicides, especially during times of economic insecurity. Examples of these social services can include unemployment assistance, housing assistance, cash benefits and tax breaks with a social purpose (Yur'yev et al., 2012). Using these social services as a

supporting in aiding individuals with their work and family roles in times of crisis will be extremely beneficial in reducing the rate of firearm suicides.

Education

Educational interventions are one of the most important suicide prevention tactics. Each sector responsible for collaborating on prevention strategies should having a strong set of skills and knowledge to make informed decisions on policy and programs in response to increasing rates of firearm suicide. It is important to understand why firearm suicide rates are high in Canada and how education plays a factor in social and policy implication. Education and training also play a central role in social welfare as welfare recipients require the proper skills and training to obtain employment that is stable, pays enough to take care of themselves and their family, and protects them from economic downturn (Hamilton & Gueron, 2002). As seen in the results of this thesis and other research, unemployment and experiencing economic downturns can significantly increase suicide rates (Bille-Brahe, 1987; Ferrada-Noli & Asberg, 1997; Hasselback et al., 1991; Kennedy et al., 1999). Therefore, reforming education programs and providing proper training to individuals on social welfare can provide stability and reduce the risk of suicides.

In access to firearms, there should be education on the current firearm policies and legislation that are currently in place. This will allow governments to assess gaps that are missing in the legislation and create a stronger focus on legislation that specifically targets firearm suicides. As mentioned previously, the newest legislation put forth in 2022 is a great start. However, the unemployment, divorce and sex factors examined in this

thesis are not factors mentioned in the new legislation yet were found to increase suicide rates. Therefore, the results from this analysis provide a great foundation for future research and how to inform policy changes on firearms based on sociological factors that, in conjunction with access to firearms, increase suicide rates in Canada.

Another important understanding is why individuals choose firearms as a method for suicide. As discussed previously, men are more likely to choose firearms as a method for suicide compared to women, which is confirmed through the findings in this thesis as rates of firearm suicides were among men. This can be due to many factors such as a man's need to not fail in their attempt, women preferring to protect their face, and how non-fatal suicides can be seen as "feminine" and less acceptable for men than women (Tsirigotis, Gruszczynski & Tsirigotis, 2011). The gender differences in suicide are complex and somewhat difficult to decipher. However, education on gender differences can also aid in suicide prevention tactics from health and social welfare sectors. Furthermore, these findings and discussion in this thesis can aid in reducing gender stigma around suicide, especially for men.

Overall, education on the environmental and social factors that can influence suicidality is extremely important. School personnel can use this knowledge to look for warning signs in students, families will be able to successfully use the red flag law to remove the right to firearm possession for an individual who is a danger to themselves, and governments can inform policy that addresses the firearm suicide risk within society.

Health

In the health sector, mental and physical health is an important factor that influences suicidality and suicide rates everywhere. A large part of suicides in a population are related to mental disorders such as depression, substance use, schizophrenia, and anxiety among others (Bachmann, 2018). Physical health is also just as important as individuals with multiple illnesses are at a higher risk of suicidality, as well as individuals living with certain illnesses such as seizures, liver disorders and other disorders (Sanna et. al., 2014; Stickley, 2020). The findings in this study, although not specifically focused on physical and mental health *per se*, can create an understanding of the effects of social factors on mental and physical health. Health practitioners can then learn to recognize patterns of poor mental and physical well-being based on conversations with patients and not just from a general health assessment. Psychiatrists and psychologists already practice these methods. However, many individuals in distress do not seek help on their own. Therefore, practitioners such as family doctors and nurses should be well-versed in what to look for when assessing patients by understanding the factors that contributed to the patient's current medical situation, how the patients' environment affects their physical and well-being, if they have had any major changes in their life recently (such as a divorce, loss of employment, recent diagnoses, etc.), and how their current mental and/or physical illness is affecting them. Therefore, proper education is important in understanding how social factors contribute to an individual's well-being. Even if that education is at the most basic level, knowing that an individual is struggling with their well-being, based on the social factors influencing them, can be the knowledge that saves a life.

Social, Educational and Public Health Policy

Policy implications should go together with social implications as the government and social sectors must work together to reduce the rate of firearm suicides. The ideas presented in this thesis can aid in informing policy that is effective, protects society from risk, and addresses the social, environmental, psychological and health aspects of mental health and suicide. As this thesis found, higher divorce and unemployment rates increase firearm suicide rates. This is because, based on Durkheim's (1897/1951) typology of suicide, sudden changes to an individual's place in society, sudden changes to society itself (such as the COVID-19 pandemic reducing jobs and causing inflation), high levels of stress and loneliness can increase poor mental health which can be a catalyst for suicide. Based on the analysis of this study, some policy options that could promote well-being and prevent suicide rates include ensuring there is enough funding and training for professionals from social, educational and health sectors to recognize signs of depression and suicidal ideation and direct individuals toward the appropriate channels (Stone & Crosby, 2014). Other policy options should also include structuring public health systems to provide proper support to those experiencing low or high integration, as factors such as unemployment and divorce can severely increase the possibility for suicide (Pistone et al., 2019).

The findings and discussions in this thesis can foster important discussions among policy makers and other groups as firearm suicides are not discussed enough in Canada. Furthermore, this thesis will aid in filling the existing gap in research literature on firearm suicides are there is more focus on the phenomenon in American literature or on firearm homicides within Canada. This thesis also provides a foundation for future research to

examine other sociological factors that influence firearm suicides, which further contributes to bettering prevention efforts in health, social welfare and education.

Chapter Six: Conclusion

Firearm suicides are a complex phenomenon that do not receive enough attention in research literature. Discussion that does exist is centered around a public health perspective, which is seen in governmental reports that outline increasing mental health supports but no mention of environmental or social factors. There are many sociological factors that can contribute to suicidality such as religion, gender, race and ethnicity, marital status, and many others. These factors contribute to the rate of suicides in Canada and around the world, which is why it is important to understand the effects of these factors as they are not exclusive to one area; suicide exists in every country.

In Canada, there have been several legislative changes over the years that stem from an overreaction to the risks society faces, including Bill C-19 (2012), Bill C-42 (2015), and Bill C-71 (2019). When gun violence occurs, governments are quick to enact laws to further tighten gun control without considering other factors and reasoning for rates of gun violence. Regarding firearm suicides, governments do not even acknowledge the firearm suicide rates they are facing. The issue is that suicide is seen as an individual act, which means it is viewed as psychological and can be solved with individualistic prevention methods. However, as Durkheim (1897/1951) argued, these individual acts make up the collective suicide rates that affect society, making it a collective issue. Therefore, collective issues call for collective collaboration in prevention recommendations and strategies.

The current study explored how changes in firearm legislation, sociological factors such as divorce, unemployment and sex influenced firearm suicide rates. This study fills a part of the gap in literature that exists on the subject in Canada. The goal of

this analysis was to provide an understanding of various factors that influence firearm suicides, and how it extends beyond a public health issue. Through secondary analysis, results did not show a decrease in firearm suicide rates after the enactment of firearm legislation, but rather some sort of an increase, especially when the sociological variables were added to the model. The finding of an association between divorce, unemployment and sex suggests that sociological factors are important to examine when informing policy and practice on reducing suicide rates in a society. This also suggests that firearm legislation aimed at reducing firearm suicides may be beneficial but does require the collaboration of other important sectors such as education and social welfare to acknowledge sociological influences as well.

There are many implications of this study as firearm suicides are not thoroughly examined. These findings can help shift the focus from firearm homicides to firearm suicides, and how policy can change to reflect that risk in society. There are also implications in the health, social welfare and education sectors, which need to work together to create effective suicide prevention efforts.

It is important to consider these factors and take real and promising action towards reducing firearm suicide deaths in Canada. It is also important that we do not make suicide a man or woman's issue; it is a people issue. However, as seen in social factors that affect suicide, different groups require different supports. There is not a one-size-fits-all to aiding someone's mental health and wellbeing. If the factors negatively affecting the individual can be combatted, then the rate of firearm suicides that collectively affect society can be reduced.

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