Czech University of Life Sciences Prague

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Bachelor Thesis

Statistical analysis of mental health during Covid-19 in Canada

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Statistical analysis of mental health during Covid-19 in Canada

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Objectives of thesis

The main objective of this thesis is to measure the impacts of the COVID-19 pandemic on the mental health of people in Canada by using the results of the two surveys provided by CAMH and research technology company Delvinia. At the same time analyzing the relationship between the mental well-being of people and the restrictions that were imposed in Canada.

Methodology

The theoretical part consists the examining and explaining the questions from the survey. Furthermore, there is an overview of restrictions during the pandemic in Canada in May 2019.

The second part of the bachelor thesis is an analysis of the survey results as well as a comparison of two survey results from different timelines. To describe the pattern across the variables descriptive statistics will be used. For better findings, the hypothesis test for the population proportion and the chi-square test will be applied. For testing IBM SPSS Statistics version will be used.

The proposed extent of the thesis
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Keywords
Covid-19, pandemic, mental health, survey, Canada, statistical analysis

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Declaration

I declare that I have worked on my bachelor thesis titled " Statistical analysis of mental health during Covid-19 in Canada" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

In Prague on 15.03.2023 _____

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Statistical analysis of mental health during Covid-19 in Canada

Abstract

This thesis examines the impact of the COVID-19 pandemic on the mental health of people in Canada. The study utilizes survey data collected by the Centre for Addiction and Mental Health (CAMH) and the research technology company Delvinia. This thesis aims to investigate the relationship between mental well-being and pandemic-related restrictions, as well as socioeconomic factors to provide a data-driven analysis of how the pandemic has affected the mental health of Canadians.

The theoretical part of the study provides an overview of mental health and mental health disorders, including their causes, as well as the restrictions imposed in Canada during the COVID-19 pandemic. The practical part of the study involves preliminary data analysis and statistical testing using the chi-square test, relative risk analysis, and investigation of proportions to compare the two survey results. This will provide a comprehensive understanding of the impact of the pandemic on mental health and highlight any changes in the relationship between mental well-being and socioeconomic factors over time. IBM SPSS Statistics version 19 is used for testing and visualization.

Keywords: COVID-19, mental health, Canada, survey, CAMH, Delvinia, restrictions, chi-square test, relative risk analysis, IBM SPSS Statistics.

Statistická analýza duševního zdraví během Covid-19 v Kanadě

Abstrakt

Tato práce zkoumá dopad pandemie COVID-19 na duševní zdraví lidí v Kanadě. Studie využívá údaje z průzkumů shromážděných Centrem pro závislost a duševní zdraví (CAMH) a výzkumnou technologickou společností Delvinia. Tato práce si klade za cíl prozkoumat vztah mezi duševní pohodou a omezeními souvisejícími s pandemií, stejně jako socioekonomickými faktory, aby poskytla analýzu založenou na datech, jak pandemie ovlivnila duševní zdraví Kanaďanů.

Teoretická část studie poskytuje přehled duševního zdraví a poruch duševního zdraví, včetně jejich příčin, a také omezení zavedených v Kanadě během pandemie COVID-19. Praktická část studie zahrnuje předběžnou analýzu dat a statistické testování pomocí chí-kvadrát testu, analýzu relativního rizika a zkoumání proporcí pro porovnání výsledků obou průzkumů. To poskytne komplexní pochopení dopadu pandemie na duševní zdraví a upozorní na jakékoli změny ve vztahu mezi duševní pohodou a socioekonomickými faktory v průběhu času. Pro testování a vizualizaci se používá IBM SPSS Statistics verze 19.

Klíčová slova: COVID-19, duševní zdraví, Kanada, průzkum, CAMH, Delvinia, omezení, chí-kvadrát test, analýza relativního rizika, IBM SPSS Statistics.

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DSM - The Diagnostic and Statistical Manual of Mental Disorders

SAD - Seasonal affective disorder

PTSD - Post-traumatic stress disorder

SUD - Substance use disorders

APA - The American Psychiatric Association

CAD - The Canadian Dollar

1. Introduction

The COVID-19 pandemic has caused unprecedented global disruption, with far-reaching impacts on people's lives and well-being. In Canada, the pandemic has led to widespread social distancing measures and economic shutdowns, causing significant disruptions to daily life. The pandemic's effects on mental health have been a particular concern, with many individuals experiencing increased stress, anxiety, and depression. Understanding the impact of the pandemic on mental health is crucial for developing effective public health policies and interventions to mitigate negative effects.

This thesis aims to examine the impact of the COVID-19 pandemic on the mental health of people in Canada. The study utilizes survey data collected by the Centre for Addiction and Mental Health (CAMH) and the research technology company Delvinia. The research questions that this thesis aims to answer include examining the impact of the pandemic on mental health, investigating how pandemic-related restrictions affect mental well-being, assessing whether significant differences in mental well-being exist among Canadians based on socioeconomic factors, as well as whether these factors have changed over time during the pandemic.

While the study aims to provide a comprehensive understanding of the impact of the pandemic on mental health in Canada, there are some limitations that may impact the findings. One limitation is that the survey data used in this study are self-reported and may be subject to social desirability bias or recall bias. Additionally, the study is limited to a specific period during the pandemic, and the findings may not reflect the impact of the pandemic on mental health over the long term.

Despite the limitations, this study provides valuable insights into the impact of the COVID-19 pandemic on mental health in Canada and highlights areas for future research and policy interventions. The findings of this study can help healthcare providers, policymakers, and the public understand the magnitude of the mental health impacts of the pandemic and the factors that influence mental well-being during times of crisis. The study's contribution to the field of mental health research lies in its comprehensive and data-driven approach to understanding the impact of the pandemic on mental health in Canada.

2. Objectives and Methodology

2.1 Objectives

The primary objective of this thesis is to assess the impact of the COVID-19 pandemic on the mental health of people in Canada. This will be achieved by analyzing the results of two surveys conducted by CAMH and Delvinia, with a focus on the relationship between mental well-being and pandemic-related restrictions imposed in Canada. The results of this study will provide important insights into the mental health impacts of the pandemic in Canada, which could inform public health policies and interventions to mitigate the negative impacts of the outbreak on mental health.

2.2 Methodology

This study will explore the relationship between mental well-being and socio-economic factors among Canadians using a quantitative research methodology. Statistical analyses such as chi-square tests, relative risk analysis, and population proportion tests will be used to analyze the collected data.

Frequency analysis

Additionally, frequency analysis will be utilized to gain insights into the distribution of specific mental health problems among the study population, including stress, anxiety, loneliness, and depression, during the current lockdown. This analysis will enable the researchers to identify the prevalence and severity of mental health issues experienced by Canadians and to determine the potential impact of socioeconomic factors on mental well-being.

The chi-square test

The chi-square test is used to compare the relationship between two variables by presenting them in a frequency table, also called a contingency table. It tests if the distributions of variables differ from each other and if there is a significant relationship between them, in other words, whether the variables are independent.

The Chi-Square is denoted by $\chi 2$. The chi-square formula is:

Equation 1 - The chi-square formula

$$\chi^2 = \sum \frac{(Oi - Ei)^2}{Ei}$$

where :

Oi = observed value (actual value)

Ei = expected value.

However, for the test to be valid, certain assumptions must be met. These assumptions include:

- The variables under investigation must be categorical in nature. This means that the data must be divided into categories or groups, rather than continuous data (Agresti, 2018).
- The observations must be independent of one another. This means that the value of one observation should not be influenced by the value of another observation (Field, 2013).
- The categories or groups being compared must be mutually exclusive. This means that observation can only belong to one category or group, and cannot belong to multiple categories or groups simultaneously (Agresti, 2018).
- The expected frequencies should be greater than 5. Although it is acceptable in larger contingency tables to have up to 20% of expected frequencies below 5, the result is a loss of statistical power . This is known as the expected cell frequency assumption, and it is necessary to ensure that the Chi-Square test is valid (Field, 2013).

Relative risk

According to Rothman and Greenland (1998), relative risk (RR) is often expressed as a ratio between the incidence of the outcome in the exposed group and the incidence of the outcome in the unexposed group. This ratio provides an estimate of the likelihood of the outcome occurring in the exposed group compared to the unexposed group.

The formula for calculating relative risk is:

Equation 2 – Relative risk

$$RR = \frac{\dfrac{a}{(a+b)}}{\dfrac{c}{(c+d)}}$$

Where:

a = number of individuals in the exposed group who experience the outcome

b = number of individuals in the exposed group who do not experience the outcome

c = number of individuals in the unexposed group who experience the outcome

d = number of individuals in the unexposed group who do not experience the outcome

The population proportion test

The population proportion is a part of the population with a certain characteristic. The test helps to find the probability of a difference either between the sample mean proportion and theoretical proportion when it is a one-sample test, or between two sample proportions in that case it is a two-sample test. It ranges between 0 and 1 and can also be denoted in percentages. Mardia provides a definition of the formula used to calculate the population proportion.

Equation 3 - Population proportion

$$P = \frac{X}{N}$$

Where :

P = The population proportion

X = The number of individuals with a certain characteristic.

N = The total number of individuals in a population. (Mardia, 1979)

According to Triola, the u-value is used for hypothesis testing of the difference between two population proportions. (Triola, 2018) The formula for calculating the u-value in this case is:

Equation 4 - The u-value

$$u = (\frac{(p1 - p2)}{\sqrt{P(1 - P)}} \times \sqrt{\frac{n1 \times n2}{n1 + n2}}$$

where:

p1, *p2* = the sample proportions for each population;

n1, *n2* = the sample sizes for each population;

P = population proportion.

This formula assumes that the two samples are independent and that each sample is a simple random sample from its respective population.

In hypothesis testing of the difference between two population proportions using the u-value, the decision to reject or fail to reject the null hypothesis (H0) is based on a comparison between the calculated u-value and the critical value of u at the chosen level of significance (alpha).

If the calculated u-value is greater than the critical value of u, we reject H0 and conclude that there is sufficient evidence to support the alternative hypothesis (H1)

If the calculated u-value is less than or equal to the critical value of u, we fail to reject Ho and conclude that there is not enough evidence to support alternative hypothesis H1. (Triola, 2018)

According to Johnson and Wichern (2007), hypothesis testing is a procedure that tests the statement of one or more populations. To perform hypothesis testing, one must go through several steps. Firstly, the null and alternative hypotheses must be defined. Secondly, the significance level, which is the probability of a null hypothesis being rejected, must be indicated (Hogg, McKean, & Craig, 2018). Thirdly, an appropriate statistical test must be performed. Finally, a decision must be made about the null hypothesis, either rejecting it or

failing to reject it, by comparing the p-value to the alpha level (Montgomery, Peck, & Vining, 2012).

If the p-value is less than alpha, the null hypothesis is rejected in favor of the alternative hypothesis, indicating that there is sufficient evidence to conclude that the alternative hypothesis is correct.

If the p-value is greater than the alpha, the null hypothesis is not rejected, and there is no sufficient evidence to conclude that the alternative hypothesis is correct.

3. Literature Review

This chapter aims to explore the distinction between mental health and mental disorders, and how they relate to emotional well-being, with a particular focus on common mental disorders. Furthermore, it delves into the various factors that can contribute to the development of mental disorders. Finally, the chapter examines the impact of the Covid-19 pandemic on Canada during the early part of 2020, including the restrictions put in place and their associated consequences. This information is presented in a formal and scientific manner suitable for academic purposes.

3.1 Mental health

Mental health is a vital aspect of an individual's overall well-being, encompassing their emotional, psychological, and social health. When we talk about positive mental health, we refer to a state of well-being characterized by a positive outlook on life, healthy self-esteem, a sense of optimism, and a feeling of control over one's life. In addition, positive mental health includes the ability to form and maintain healthy relationships, as well as resilience in the face of adversity.

According to Jenkins (2011), positive mental health can be understood as a combination of factors, including a positive sense of well-being, individual resources such as self-esteem, optimism, and a sense of mastery, the capacity to build and maintain meaningful personal relationships, and the ability to cope with life's challenges. Individuals with positive mental health possess a range of characteristics that contribute to their overall well-being and positive functioning in society. Adequate self-esteem is recognized as a fundamental component of mental health, whereby individuals possess a realistic understanding of their personal strengths and weaknesses. Strong self-esteem serves as a buffer against the detrimental effects of unfavorable influences and promotes better physical health and positive social behavior (Michal, 2004).

In addition to self-esteem, individuals with positive mental health exhibit a willingness and ability to not only work professionally, but also contribute to society. They can build positive and trusting relationships with others, a skill that fosters supportive social networks and enhances overall mental health. Maslow in his work Motivation and Personality, wrote "these individuals make decisions independently and are accountable for

their actions, as they realize their potential for growth and self-improvement" (Maslow, 1954).

Another trait that characterizes positive mental health is the recognition and adherence to moral standards. Individuals who prioritize moral values and ethics are more likely to experience greater life satisfaction and fulfillment. Furthermore, positive mental health involves the ability to regulate emotions effectively, allowing individuals to deal with intense emotions without letting them control their behavior. They also possess the ability to evaluate the causes of certain life situations and can comprehend the next steps required to navigate those situations successfully.

Overall, the manifestation of positive mental health is multifaceted and involves several key traits, including self-esteem, social connectedness, moral values, emotional regulation, and critical thinking skills. These traits serve as a foundation for individuals to experience greater life satisfaction, productivity, and meaningful social interactions.

The World health organization stated that mental health is "more than just the absence of mental disorders or disabilities." (WHO, 2014) Mental disorder is a component of mental health when the instability of an individual affects his cognitive functioning, emotional responses, and behavior. It is a condition in which an individual's thinking, mood, and behavior negatively impact his day-to-day functioning.

An individual's concerns about mental health should be the same as those about physical health. As mental health is an integral part of the health of the body as a whole. Mental illness can disrupt the control of immune responses and promote chronic immune system activation leading to lasting inflammatory dysregulation. For example, depression increases the risk of many types of physical health problems, particularly long-lasting conditions like diabetes, heart disease, and stroke. Similarly, the presence of chronic conditions can increase the risk of mental illness. (National Institute of Mental Health, 2015). At the same time, it can be vice versa, physical health conditions can also contribute to mental health issues. People with chronic physical illnesses can often have depression and anxiety, due to experiencing chronic pain and emotional distress.

3.2 Mental disorders.

According to the American Psychiatric Association (2013), individuals who suffer from mental health issues can exhibit various symptoms, including:

- Changes in eating patterns, excessive weight gain, or weight loss;
- Changes in sleeping habits, thus having little or no energy;
- Extreme mood changes;
- Having problems managing usual responsibilities;
- Avoiding regular activities, as well as any social interactions;
- Difficulties understanding other people;
- Inability to handle daily problems and stress;
- Overuse of substances like alcohol or drugs.

A mental health condition can never be prevented. Nevertheless, it's critical to know when to get assistance. It is best to contact a healthcare professional as soon as a person sees some of the symptoms listed above. As healthcare professionals will help to diagnose the illness and find a suitable treatment.

A mental disorder can be defined as a complex and often debilitating condition that affects an individual's emotional, cognitive, and behavioral functioning, leading to significant impairment in daily life. The Diagnostic and Statistical Manual of Mental Disorders (DSM) is the American Psychiatric Association`s standard reference for psychiatry, which includes over 450 different definitions of mental disorders. (Arlington, 2013) Here are some common mental disorders from the existing list, that is described in this manual, along with brief descriptions:

Anxiety disorders.

Anxiety disorders are characterized by the uncomfortable feeling of nervousness, worry, or fear. The symptoms are sufficiently severe and result in significant discomfort or cognitive disability. There are several types of anxiety disorders, including :

- Generalized anxiety disorder is "characterized by chronic excessive worry accompanied by three or more of the following symptoms: restlessness, fatigue, concentration problems, irritability, muscle tension, and sleep disturbance". (Schacter, 2011)
- Panic disorder has a defining feature called panic attacks. A panic attack is a sudden episode of fear although there is no real danger or cause.

- Social anxiety disorder, also known as social phobia, is described as an intense fear of social interaction and avoidance of public situations.
- Separation anxiety disorder is a feeling of anxiety because of separation from some individual, to whom the individual has an emotional attachment.

Major depressive disorder.

Major depressive disorder has been identified as the third leading cause of global disease burden by the World Health Organization (WHO) in 2008, with projections indicating that it will become the foremost cause by 2030 (Malhi, 2018). Depression significantly impacts an individual's quality of life, manifesting as episodic fluctuations in mood and affective responses. The clinical symptoms of depression include impaired concentration, pervasive feelings of guilt, diminished self-worth, and periods of significant fatigue or anergia. Various subtypes of depression have been identified, each distinguished by the specific symptomatology and associated clinical features.

- According to the DSM-5, major depression is characterized by persistent depressive symptoms for at least 2 weeks, which often interfere with an individual's ability to work, sleep, study, and eat.

- Persistent depressive disorder, formerly known as dysthymia, is another form of depression that involves less severe depressive symptoms but lasts for at least two years (American Psychiatric Association, 2013).

- Seasonal affective disorder (SAD) is a type of depression that is characterized by a seasonal pattern. This disorder typically begins in the late fall or early winter and remits in the spring or summer. The symptoms of SAD are believed to be a response to the reduction of sunlight during the winter months (Kurlansik & Ibay, 2012). According to the American Psychiatric Association, people who live in regions with lower levels of sunlight exposure, such as Norway, Ireland, the Netherlands, and Canada, are more likely to experience SAD (APA, 2013).

- Perinatal depression, which includes major depression during pregnancy or postpartum depression after delivery, is caused by a combination of stress during pregnancy and hormonal changes. (Gavin, 2005)

Bipolar Disorder.

Anderson defines bipolar disorder, which is also known as manic depression, as a psychiatric disorder marked by alternating episodes of depression and mania lasting from several days to weeks. (Anderson, 2012) During the depressive phase, individuals experience a persistent low mood and lack interest in activities that they typically enjoy. Conversely, manic episodes are characterized by elevated mood, increased energy levels, reduced need for sleep, inflated self-esteem, and impulsive behavior.

Post-Traumatic Stress Disorder.

Post-traumatic stress disorder may develop after exposure to exceptionally threatening or horrifying events. (Arlington, 2013) Anyone can have PTSD, but veterans of war, kids, and those who had experienced physical or sexual assault, natural disasters, and accidents are more likely to have PTSD. The chances could also be enhanced when a person feels a lack of family and friend support and chronic stress. It's important to keep in mind, though, that not everyone who witnesses a traumatic incident will go on to acquire PTSD, and not everyone who already has PTSD has gone through a traumatic experience.

Eating Disorders.

Eating disorders are defined by abnormal eating behaviors that negatively affect a person's physical or mental health. (Arlington, 2013) There are several types of eating disorders, such as anorexia nervosa, bulimia nervosa, binge eating, pica, and others. An individual with any eating disorder has prominent body weight and shape concerns. Cultural idealization of thinness is believed to contribute to some eating disorders. (Rikani, 2013)

The stigmatization of mental illness.

Living with a mental disorder can be challenging, and individuals may experience a range of symptoms, such as anxiety, depression, mood swings, delusions, or hallucinations. The severity and duration of these symptoms can vary widely, and they can significantly impact one's ability to function in daily life, including work, school, and relationships.

The stigmatization of mental illness is a significant issue that affects the lives of those with mental health disorders, from their employment opportunities to their ability to access healthcare and insurance. According to research, public stigma toward mental illness is a systematic problem that highlights power disparities and undermines social justice (Link & Phelan, 2001).

Moreover, the impact of mental illness stigma can lead to self-stigmatization, which reinforces biases and negatively affects individuals' lives. Despite efforts to increase public awareness and education, there remains strong discrimination towards individuals with mental health disorders, exacerbating the challenges they face.

In conclusion, the stigmatization of mental illness remains a significant challenge that requires ongoing efforts to address. It is essential to promote public awareness and education to reduce the associated discrimination and negative impacts on individuals' lives. Additionally, efforts must be made to improve access to mental healthcare services to ensure that all individuals have the support they need to manage their mental health effectively.

3.3 Causing factors for mental disorders.

In contemporary society, the prevalence of instability and uncertainty has made it difficult to conceive of the notion of absolute mental health. The current environmental conditions have undermined people's sense of security, rendering mental health a pressing concern. According to Arango, the causes of mental disorders are highly intricate and multifarious, and they vary depending on the disorder and the individual affected It is uncommon for mental illnesses to result from a singular cause, as it is usually a combination of various risk factors. (Arango, 2018) The likelihood of developing a mental illness increases with an increase in risk factors. Mental health conditions can emerge gradually over an extended period or suddenly triggered by a stressor or stimulus that affects an individual's emotional state, leading to overwhelming sadness, anxiety, or panic. Although many factors can contribute to an individual's mental health, it is increasingly apparent that these conditions are generally caused by biological and environmental factors.

3.3.1 Biological factors.

There are many different biological factors that can contribute to the development of mental disorders. Some of the most common biological factors include:

Genetics.

Mental illnesses can have a hereditary component, with children inheriting genetic coding from both parents. The outward expression of inherited traits is referred to as the phenotype, which can be observed in clinical settings through various behaviors, such as self-injury, aggression, depression, anxiety, and inattention (David, 2021). Therefore, it is

crucial to take into account any family history of mental health issues when attempting to determine the root cause of such disorders. By recognizing the potential role of genetics in the development of mental illness and obtaining a comprehensive family history, clinicians can gain a better understanding of the patient's condition and develop more effective treatment plans.

Prenatal damage.

Research has shown that the prenatal period is a critical time for brain development, and any disruption or trauma during this period can have a long-lasting impact on mental health. For instance, maternal stress during pregnancy has been linked to a higher risk of anxiety, depression, and behavioral problems in children. Dr. David J. Barker, a British epidemiologist, famously stated in 1988 that "the womb may be more important than the home." His statement highlights the importance of prenatal factors in shaping a child's development, including the risk for mental illness.

Brain injuries.

It is widely recognized that any form of brain injury has the potential to lead to the development of mental health issues. Furthermore, in some cases, an individual may have had a pre-existing mental illness before the injury, and the brain injury may exacerbate the symptoms of the pre-existing condition. Mild TBI (traumatic brain injury), once considered a largely benign phenomenon, is now known to be associated with a range of affective symptoms, with suicidality, and with worsening or new onset of several psychiatric disorders including posttraumatic stress disorder and major depressive disorder. (Howlett, 2022)

Substance abuse.

Addiction is a complex and often debilitating condition characterized by an individual's strong desire to use substances such as cigarettes, alcohol, medications, or drugs, which can result in them expending a significant amount of time and effort to obtain and use these substances. Substance abuse can affect a person's brain and behavior, leading to a person's inability to control their use of substances. If substance use is not possible, the person experiences anxiety, irritability, and all sorts of other symptoms. The addicted person continues to use a substance or activity regardless of the social or physical harm it causes. Some people may use substances as a form of self-medication because they expect them to

help with their mental problems. Although some drugs can help with some symptoms only temporarily, over time symptoms worsen.

It is important to note that substance use disorders frequently co-occur with mental disorders and vice versa. As noted by Santucci (2012), many individuals who develop SUD also have an underlying mental disorder, and those with a mental disorder are at higher risk of developing SUD. The co-occurrence of these conditions can complicate treatment efforts and necessitates a comprehensive and integrated approach to address both disorders simultaneously.

3.3.2 Environmental factors.

Environmental factors refer to any stress-inducing situations that individuals may encounter in their daily lives. These factors are primarily psychological in nature and can involve a wide range of possible "triggers" that may contribute to the development of various mental health disorders. Some of the most common disorders that may be influenced by environmental factors include:

Poor parenting.

The impact of parenting on mental health is a significant area of research, with studies suggesting that poor or overly strict parenting can contribute to severe psychological trauma in children. The family environment, particularly parenting style, has been identified as one of the most influential factors affecting adolescent mental health, as noted by Newman (2008). Children are much more vulnerable to traumatic events than adults. Poor parenting can have long-lasting negative consequences on the structural and functional development of the brain, leading to abnormalities that can lead to suicide attempts and frequent depressive episodes in the future. Children and adolescents with mental disabilities, who faced isolation and discrimination are deprived of the opportunity to learn.

Social interaction.

The importance of social relationships for mental and physical health has been extensively researched and documented. The Harvard Women's Health Watch reported that numerous studies have demonstrated that individuals who have satisfying relationships with family, friends, and their community experience higher levels of happiness, fewer health problems, and longer lifespans (Harvard Health, 2010). How an individual interacts with

others as well as the quality of relationships can greatly increase or decrease a person's quality of living. During the Covid-19 pandemic, people worldwide had to self-isolate, which could harm their well-being. Greek philosopher Aristotle once said that a man is a "social animal," who is unable to live isolated from others. Being disconnected from society can lead to feelings of loneliness.

Self-esteem.

According to Smith, self-esteem refers to the positive or negative evaluation that an individual holds of oneself, and is an integral aspect of an individual's sense of identity, self-worth, and abilities. (Smith, 2007) Individuals` self-esteem plays a huge role in how they determine who they are, how they value themselves, and their abilities. There is a correlation between low self-esteem and a negative outcome for young people`s behavior and mental health problems, including substance abuse, early sexual activity, and eating disorders. A low level of self-worth can result in aggression, violence, self-deprecating behavior, and anxiety.

Socioeconomic factors.

Mental health, as with any other aspect of health, can be affected by a range of socioeconomic factors. There is a direct correlation between socioeconomic status and mental illness. Individuals who live in difficult living conditions, or below the poverty line are at a higher risk of having a mental illness. They are more likely to experience low levels of self-worth, leading to high levels of psychopathology and poor self-concepts. This can also be due to their inability to provide themselves with proper help.

Stress.

The biggest influence on mental health, perhaps, is stress, or rather, a person's attitude towards it. The experience of chronic psychological stress is associated with a variety of serious physical, financial, and emotional consequences at both individual and societal levels. (Schmidt, 2008) Stress is a person's mental state that occurs in response to various extreme influences. Certainly, everyone experiences a certain amount of stress is a normal part of daily life. Stress is beneficial in small amounts because it helps people to meet deadlines, be prepared for presentations, be productive, and arrive on time for important events. However, long-term stress can become harmful. When stress becomes overwhelming

and prolonged it will have physiological, psychological, and medical symptoms. One's mental health is impacted by a variety of stress factors, including the fear of death or major injury, the death of a family member or loved one, debt, unexpected costs, and a lack of social support.

Mental illness does not discriminate and can affect individuals of any demographic, including age, gender, income, social background, ethnicity, religion, sexual orientation, family history, or other aspects of cultural identity. However, it is apparent that those who face more obstacles in life are at a higher risk for developing mental health issues. Multiple factors can impact a person's mental health throughout their lifetime, making it challenging to pinpoint the exact cause of mental illness. Despite this, obtaining an accurate diagnosis is crucial, as it can aid in determining the most effective treatment approach. Identifying and treating the underlying cause of a mental disorder can facilitate the recovery process.

3.4   Life in Canada during the Covid-19 pandemic

According to the World Health Organization (WHO), by the year 2020, COVID-19 had affected all nations, with over 50 million confirmed cases globally (WHO, 2021). To curb the spread of the virus, more than 50% of the world's population was subjected to severe lockdown and containment measures by spring 2020. The pandemic caused unprecedented disruptions to global economic and social systems, making it the largest economic catastrophe since World War II (Ghebreyesus, 2020). The pandemic's impacts have been extensive and far-reaching, with long-term effects on human capital, productivity, and mental health (Holmes et al., 2020). Thus, the COVID-19 pandemic is an unprecedented global tragedy of the twenty-first century that has affected all aspects of human life.

According to the Public Health Agency of Canada, the Emergency Operations Centre was activated on January 15, 2020, in response to the confirmation of the COVID-19 outbreak in China (Public Health Agency of Canada, 2021). The first-ever case of COVID-19 in Canada was reported on January 25, 2020 (Government of Canada, 2021). As of the time of writing, Canada has reported over 4375478 cases of COVID-19, with over 46710 deaths attributed to the disease.

The World Health Organization (WHO) also issued guidelines on preventive measures to control the spread of the virus, which include measures such as frequent handwashing, wearing masks, maintaining social distancing, and avoiding large gatherings

(WHO, 2020). These guidelines have been widely adopted and implemented by countries around the world in an effort to mitigate the spread of the virus.

- Securing the borders and implementing travel restrictions to limit the movement of individuals from high-risk areas.
- Face masks have been widely encouraged and enforced to use in public settings.
- Regular handwashing and the use of alcohol-based hand sanitizers have been highly promoted.
- A limitation on people's ability to move around Canada freely, except for transportation to and from work.
- The closure of schools and universities and online studying was announced.
- The closure of stores, businesses, and restaurants.
- All events that involved more than 30 individuals were prohibited.
- It was strongly recommended for companies and businesses let employees work from home.
- A 14-day quarantine for infected individuals.
- Putting the Covid-19 tests into practice both at work and while traveling.

Canada's aimed to minimize all serious illnesses and deaths while limiting societal disruption. To achieve this, the Canadian government took serious actions to respond to the disease outbreak, which affected all aspects of Canadians' lives. These measures included conventional public health measures, such as directing epidemiology, testing, and providing emergency supplies to the provinces, as well as border closures, and the closure of schools and private businesses. Many nations, including Canada, have used public health measures like COVID-19 quarantine from the beginning of the outbreak to stop the virus from spreading further. In Canada, COVID-19 quarantine mandates have been imposed in various ways, ranging from "recommended," (voluntary and largely self-managed) to "mandatory" (legally enforceable). (Government of Canada, 2020)

The COVID-19 pandemic had a significant impact on the economic and social well-being of Canada. During the first wave of the pandemic, the country's gross domestic product experienced a decline of 11.3% in the second quarter of 2020, which was attributed to the widespread lockdowns and business closures. This decline represented a loss of approximately $215 billion CAD from the previous quarter, making it the largest quarterly

decline on record (Statistics Canada, 2020). In addition to the decline in GDP, the pandemic also resulted in a significant increase in the unemployment rate in Canada. Statistics Canada (2020) reported that the unemployment rate rose from 5.6% in February 2020 to 13.7% in May 2020. This increase represents a loss of approximately 3 million jobs, which is the largest decline on record.

To address these economic challenges, the Canadian government has set a goal of achieving a full economic recovery by the end of 2023. This goal was announced in the 2021 federal budget, which outlines plans for significant investments in job creation, infrastructure, and other measures to support economic growth (Government of Canada, 2021).In to the financial implications, the Canadian Government was thoughtful and careful and offered financial assistance to people and businesses that concentrated on addressing the needs of those who lost jobs or had employment restrictions and companies that lost income. The monthly compensation of $2000 helped many people who lost their jobs maintain their financial stability. Students could also apply for a $1250 monthly Canada Emergency Student Benefit, but they had to show that they were actively looking for jobs to qualify for the program. These findings suggest that policies to mitigate economic stress, such as Canada's Emergency Response Benefit, may have eased mental health deterioration in the early pandemic months through a reduction in financial hardship. (Zajacova A, 2020).

3.5 The mental health of Canadians during the pandemic

The COVID-19 pandemic has had a profound impact on the psychological well-being of populations globally, and Canada has not been immune to its effects. The World Health Organization (WHO) had already reported a notable increase in the number of individuals experiencing mental illness globally prior to the pandemic. Empirical evidence supports the notion that the COVID-19 pandemic has led to a decline in mental health among Canadian adults during the early stages of the crisis. Specifically, a study by Zajacova found that mental health had deteriorated among Canadian adults from March to May 2020. (Zajacova, 2020)

However, the pandemic has further exacerbated this issue. In addition to the direct impact of the COVID-19 pandemic on mental health, there are also indirect effects, such as financial stress and job loss, that can contribute to mental health problems. Various socio-economic factors, including poverty, financial stress, social isolation, and job loss, have been identified as risk factors for mental health problems during the pandemic. For instance,

individuals who experience financial stress or job loss are more likely to suffer from anxiety and depression, while those who are socially isolated or living alone may be more vulnerable to mental health issues such as loneliness and boredom.

According to a report by Statista, Canada shares second place with England in the percentage of adults who experienced stress, anxiety, or sadness that was difficult to cope with during the pandemic. This report is consistent with other studies that have shown an increase in mental health problems among the Canadian population during the pandemic (Holmes, 2020)

Figure 1- The impact on mental health as been widespread.

Source: https://www.statista.com
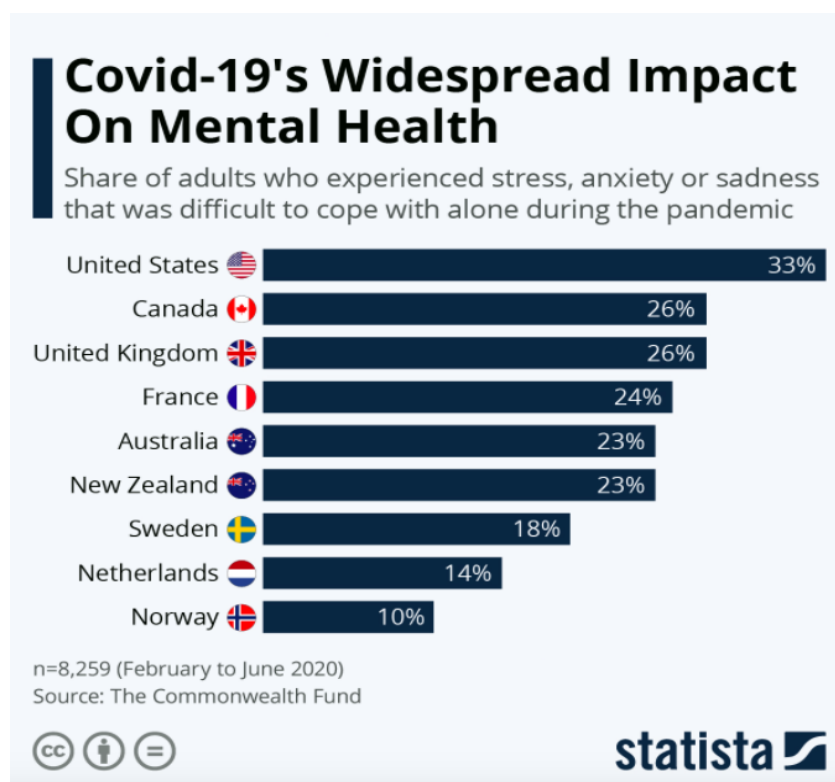
Furthermore, the pandemic has influenced various social determinants of health, including escalating rates of drug and alcohol consumption. Reports from Canada indicate that during the pandemic, there has been an increase in the use of alcohol and cannabis. Despite the fact that governments have permitted the operation of liquor and cannabis stores, the fear of a potential shortage has resulted in stockpiling by consumers (Seglins, 2020). Research has demonstrated that chronic and heavy cannabis use can lead to impairments in attention, memory, and decision-making skills, particularly in adolescents and young adults whose brains are still developing (Volkow, 2016) Thus, it is crucial to promote responsible

cannabis use and educate individuals on the potential risks associated with excessive cannabis use.

The COVID-19 pandemic has necessitated public health regulations that have had both immediate and prolonged consequences that may be beneficial or detrimental. These measures may improve familial connections or exacerbate domestic conflicts.

All facets of society have been impacted by stresses, including:

- Teenagers and university students who could not attend their classes, interact and cooperate with teachers and their classmates, and had discontinuation of extracurricular activities and part-time jobs. A national hotline for young people, for instance, saw a sharp spike in calls by April 2020, with a 48% increase in calls about social isolation, a 42% increase in calls about stress and anxiety, and a 28% increase in calls about physical abuse. (Kids help phone, 2020)

- Parents of school-aged children who had to somehow balance their job, and home tasks, and also help their children fulfill school demands as a result of the closure of the schools. Parents faced a lot of stress while taking care of their children, worrying about their physical and emotional well-being, and continuing with their work.

- According to Pongou, females have a higher likelihood of experiencing mental health problems than males, and this gender disparity may be partially attributed to the fact that females are more commonly exposed to violence and abuse, which can lead to significant psychological distress. (Pongou, 2022)

- People living in long-term care homes had been restricted from visiting which caused other residents to leave, all that is due to COVID-19.

- People who already had a history of physical or mental illness.

- Employees in the healthcare industry and others who had to report to work often in contaminated areas. Because of their greater risk of infection, higher workload, and the possibility of making life-or-death choices, frontline clinical staff was more likely to have mental health issues.

- People who already had lived below the poverty line. Further, mental health challenges due to the COVID-19 pandemic are disproportionally impacting those who have been systematically and structurally oppressed. (Jenkins, 2021)

- Those who believed they would lose their employment or who saw a financial impact of the epidemic on their ability to afford financial obligations had far greater levels of

both "poor" overall mental health and anxiety. On April 2020, approximately 5.5 million Canadians either lost their employment or were working substantially reduced hours. (Statistics Canada, 2020)

- Those who have experienced the loss of a relative or someone close.
- Those who had due stay alone due to isolation requirement. Several studies have investigated the impact of the pandemic on loneliness. A study published in the Journal of Clinical Psychology found that the COVID-19 pandemic was associated with increased levels of loneliness and social isolation among adults. (Jianhong, 2021)

Figure 2 - Mental Health During the First Year of the COVID-19 Pandemic: A Review and Recommendations for Moving Forward
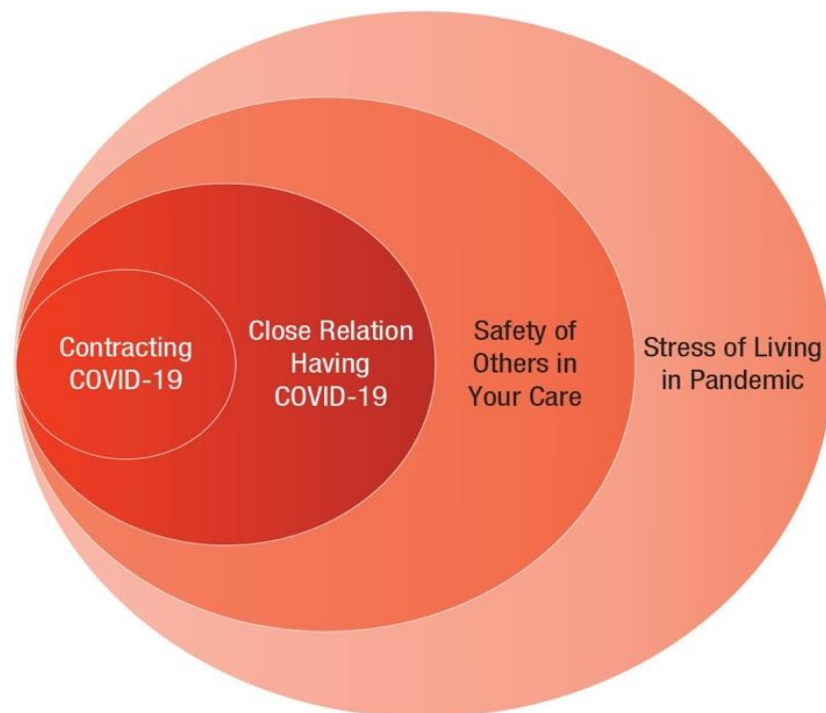
Source: Aknin, 2020

Figure 2 illustrates the various stressors that the COVID-19 pandemic imposed on individuals. Each circle in the figure represents a layer of potential stressors that individuals may have experienced during the pandemic, which could accumulate and have a negative impact on their mental health. The different layers of stressors depicted in the figure include social isolation, financial concerns, health fears, and grief resulting from the loss of loved ones. This conceptualization highlights the complexity and multifaceted nature of the stressors brought about by the pandemic. The figure is based on a study by Aknin, 2020.

Nonetheless, mental health is a multifaceted issue, and no single factor can fully determine who may be susceptible to mental health problems during the pandemic. Age, pre-existing mental health conditions, and overall health are also relevant factors that may influence an individual's vulnerability. Therefore, it is crucial to consider a range of socio-economic and individual factors when evaluating the risk of mental health issues during the pandemic and to provide appropriate support to those who are most vulnerable.

Certainly, the COVID-19 pandemic has brought attention to pre-existing challenges within Canada's mental healthcare system. As noted by The Canadian Mental Health Association (2020), many Canadians already faced barriers to accessing mental healthcare prior to the pandemic, such as long wait times, limited availability of services in certain regions, and stigma. The current crisis has only exacerbated these issues, as mental health services have been disrupted, and the demand for services has increased due to the pandemic's impact on people's mental health.

In addition, a report by the Canadian Centre for Policy Alternatives (2020) calls for improvements in working conditions, compensation, and support for essential workers, who have been disproportionately impacted by the pandemic. The report notes that essential workers are at greater risk of exposure to COVID-19 and face significant mental health challenges as a result of their work.

However, there have been efforts to address mental health concerns during the pandemic. The Canadian government has increased funding for mental health services and launched campaigns to promote mental health awareness. As reported by The Globe and Mail (2021), the federal government pledged an additional $100 million for mental health and substance use services in March 2021, in addition to the $240 million allocated in 2020. Many organizations and individuals have also stepped up to provide support and resources to those struggling with mental health problems during this challenging time.

A report by the Mental Health Commission of Canada (2020) highlights the importance of prioritizing mental health during the pandemic and ensuring that interventions are accessible and equitable for all Canadians. The report also emphasizes the need for targeted support for vulnerable populations, including those experiencing homelessness, substance use disorders, and domestic violence.

4. Practical Part

In this chapter, the main findings of the literature review will be used to conduct a range of statistical analyses to investigate the changing nature of Canadians' mental health. The prevalence and intensity of various mental health challenges, including anxiety and loneliness, will be examined using frequency analysis. Chi-square tests will be utilized to assess any observed differences or changes in mental health patterns across different demographic variables, such as age, gender, income, and education, as well as any potential moderating effects of substance use. Additionally, population proportion tests will be employed to compare survey results from different time periods. The aim of this study is to identify any shifts or changes in mental health challenges among Canadians, including improvements or declines in mental well-being due to the COVID-19 pandemic and associated public health measures.

4.1 About the survey

In 2020, in response to the ongoing COVID-19 pandemic, the Centre for Addiction and Mental Health (CAMH) and Delvinia, a technology corporation, conducted two nationwide online surveys in Canada. The first survey was conducted from May 8th to May 12th, with a sample size of 1005 participants, while the second survey was conducted from May 29th to June 1st, with 1002 participants. Both surveys contained the same 30 questions, and the results and questions are publicly available through Delvinia (Delvinia & CAMH, 2020).

The surveys aimed to assess the impact of the COVID-19 pandemic on mental health and well-being in Canada. Questions included topics such as feelings of loneliness and social isolation, changes in employment status, access to mental health resources, and coping mechanisms during the pandemic. The surveys provided valuable insights into the mental health effects of the pandemic on the Canadian population (Delvinia & CAMH, 2020).

The use of online surveys allowed for rapid data collection and analysis, particularly considering the restrictions on in-person research during the pandemic. However, it is important to note that online surveys may not be representative of the entire population, as not all individuals have equal access to the internet or may choose not to participate (Dillman et al., 2014). Despite this limitation, the Delvinia and CAMH surveys provide a valuable snapshot of the mental health impacts of the pandemic on a large sample of Canadians.

The questions can be segmented into 4 categories:

- Questions that can provide personal information, including socio-geographic factors like a province, age, gender, marital status, having children, and area of living.
- Questions regarding a financial and employment situation.
- Questions about substance use, including alcohol consumption and cannabis use.
- Questions that are aimed to learn more about mental state ad it's changing nature since the start of the pandemic.

4.2 Preliminary data analysis

In the case of the ongoing COVID-19 pandemic, frequency analysis can shed light on how the epidemic has affected mental health and well-being. For example, frequency analysis of survey data may reveal the proportion of participants who reported experiencing symptoms of depression or anxiety, or who reported changes in their employment situation or changes in substance use. Overall, frequency analysis is a powerful method to consider in the preliminary data analysis stage of mental health research studies.

Table 1 Frequency table - Feeling nervous, anxious, or on edge

Have you been recently feling nervous, anxious or on edge?

	Frequency	Percent
Nearly every day	122	12.1
Not at all	363	36.1
Over half the days	132	13.1
Several days	388	38.6
Total	1005	100.0

Source: own calculation

Table 1 presents the results of a frequency analysis of the responses to the question, "Have you been recently feeling nervous, anxious, or on edge?", it exposes the following scenario. 39% of participants reported feeling this way for several days, which suggests that they are experiencing some level of anxiety. Another 13% reported feeling this way over

half of the days, which can be a sign of more serious anxiety problems. Additionally, 12% of participants reported feeling this way nearly every day, which may indicate a need for further support and intervention. On the other hand, 36% of participants reported not feeling nervous at all, which suggests that a significant proportion of individuals are not experiencing anxiety.

Overall, the frequency analysis suggests that a significant proportion of participants are experiencing some level of anxiety, as the pandemic has brought about significant changes to daily life, including social isolation, financial stress, and uncertainty about the future, which can all contribute to increased levels of anxiety and other mental health concerns.

Furthermore, it is worth exploring the potential differences in anxiety levels between different demographic groups, such as gender, age, and socioeconomic status. Research has suggested that women may be more likely to experience anxiety than men. Understanding these potential disparities can help inform targeted interventions and support for those who may be at higher risk.

Table 2 - Frequency table - Have you been recently feeling nervous, anxious, or on edge

Have you being recently not able to stop or control worrying?	Frequency	Percent
Nearly every day	85	8.5
Not at all	492	49.0
Over half the days	123	12.2
Several days	305	30.3
Total	1005	100.0

Source: own calculation

According to the findings presented in Table 2, when asked about their ability to control or stop worrying, more than 50% of the participants reported not facing any difficulty in doing so. This suggests that a substantial proportion of individuals are adept at managing their worries effectively. At the same time, 30% of participants reported finding themselves

worrying for several days, indicating that a moderate number of individuals are experiencing some level of difficulty controlling their worries.

Despite the challenges posed by the pandemic, many individuals are still able to manage their worries and maintain good mental health. This may be due to a variety of factors, including access to mental health resources, social support, and individual coping mechanisms. However, there is still a significant need for mental health support during the pandemic. This may be especially true for individuals who have experienced significant disruption to their daily lives because of the pandemic, such as those who have lost jobs or loved ones.

Table 3 - Frequency table - Have you been recently having trouble relaxing?

Have you been having recently trouble relaxing?	Frequency	Percent
Nearly every day	265	26.4
Not at all	740	73.6
Total	1005	100.0

Source: own calculation

Difficulty relaxing is one manifestation of such stressors. However, it is noteworthy that 74% of participants in Table 3 reported not having trouble relaxing, suggesting that many individuals have been able to find coping mechanisms to maintain their mental well-being during the pandemic. The fact that 27% of participants reported experiencing trouble relaxing nearly every day highlights the need for mental health support during the pandemic. This may be especially true for individuals who are experiencing significant stressors, such as frontline healthcare workers, individuals who have lost loved ones to COVID-19, or those who are facing financial or employment challenges because of the pandemic (Xiong, 2020). Thus, healthcare providers and policymakers must recognize the mental health impact of the COVID-19 pandemic and take steps to address it, such as increasing access to mental health services and resources (Torales, 2020).

Overall, the findings suggest that while many individuals are coping well with the stressors of the pandemic, a significant proportion may require additional mental health support during this challenging time.

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Table 4 - Frequency table - Have you been recently feeling afraid as if something awful might happen?

Have you been recently feeling afraid as if something awful might happen	Frequency	Percent
Nearly every day	95	9.5
Not at all	484	48.2
Over half the days	127	12.6
Several days	299	29.8
Total	1005	100.0

Source: own calculation

Table 4's frequency analysis of the question " Have you recently been afraid that something awful might happen?" demonstrates that a sizable majority of people are experiencing fear to varied degrees, with 30% of participants expressing feeling scared on at least some days of the week, 17% reporting feeling afraid on most days of the week. It provides insightful information on the level of fear and anxiety that Canadians experienced during the COVID-19 epidemic and associated with lockdown measures. The findings reveal that a considerable proportion of individuals are experiencing varying degrees of fear, with 30% of participants reporting feeling afraid several days of the week, 17% experiencing this feeling over half of the days, and 9.5% reporting feeling fearful almost every day.

In the past 7 days, how often have you felt depressed?

	Frequency	Percent
Most or all the time	205	20.4
Very rarely	800	79.6
Total	1005	100.0

Table 5 - Frequency table - In the past 7 days, how often have you felt depressed?

Source: own calculation

The results of the frequency analysis of the responses to the question "Have you been recently feeling afraid as if something awful might happen?" in Table 5 reveals that a considerable proportion of individuals are experiencing varying degrees of fear, with 30% of participants reporting feeling afraid several days of the week, 17% experiencing this feeling over half of the days, and 9.5% reporting feeling fearful almost every day.

It is worth noting that experiencing fear is a common emotional response to stressors, such as the COVID-19 pandemic, and is considered a natural defense mechanism. However, persistent, and excessive fear can have detrimental effects on an individual's well-being, including increased stress levels, impaired decision-making abilities, and negative impacts on physical and mental health (Kozlowska, 2015).

Table 6 - Frequency table - In the past 7 days, how often have you felt lonely?

In the past 7 days, how often have you felt lonely?

	Frequency	Percent
Most or all the time	233	23.2
Very rarely	772	76.8
Total	1005	100.0

Source: own calculation

As the pandemic has forced people to stay at home and limit their social interactions, which can lead to feelings of loneliness and isolation. Moreover, the uncertainty and fear surrounding the pandemic can also contribute to mental health issues, including feelings of loneliness.

The analysis of the responses to the question "In the past 7 days, how often have you felt lonely?" in Table 6 sheds light on how common loneliness was among Canadians at the time of the epidemic. The results indicate that a notable proportion of individuals, 23%, experienced frequent episodes of loneliness within the past week. This finding underscores the negative impact of pandemic-related restrictions on social connection and highlights the need for mental health support and resources to mitigate the effects of loneliness.

Table 7 - Frequency table - In the past 7 days, how often have you felt hopeful about the future?

In the past 7 days, how often have you felt hopeful about the future?	Frequency	Percent
Most or all the time	468	46.6
Very rarely	537	53.4
Total	1005	100.0

Source: own calculation.

The frequency analysis of the answers to the question "In the past 7 days, how often have you felt hopeful about the future?" in Table 7 gives insight into Canadians' emotional experiences throughout the COVID-19 epidemic. The data shows that 53% of participants reported feeling hopeful about the future, while the remaining 47% felt this way most of the time. This finding is consistent with previous research on the psychological impacts of pandemics and lockdowns, which have highlighted an increase in stress, anxiety, and depression among individuals (Kang, 2020).

Additionally, it would be beneficial to explore the underlying reasons for the high prevalence of negative emotions and uncertainty about the future among participants. For instance, concerns about personal health, financial stability, or the broader societal impact of the pandemic could be contributing factors.

Table 8 - Frequency table – In the past 7 days, did you drink more alcohol, about the same, or less alcohol overall than you did before the COVID-19 pandemic started?

In the past 7 days, did you drink more alcohol, about the same, or less alcohol overall than you did before the COVID–19 pandemic started?		Frequency	Percent	Valid Percent
Valid	Drink less	78	7.8	14.0
	Drink more	253	25.2	45.3
	No change	227	22.6	40.7
	Total	558	55.5	100.0
Missing	0	447	44.5	
Total		1005	100.0	

Source: own calculation

The analysis of the responses to the question regarding alcohol consumption during the COVID-19 pandemic in Table 8 reveals that a substantial proportion of individuals reported drinking more alcohol in the past week compared to before the pandemic began. Specifically, 45% of respondents reported increased alcohol consumption, while only 14% reported drinking less at the same rate, and 40% did not report any change in their alcohol consumption patterns.

These findings suggest that pandemic-related restrictions have had a negative impact on substance use patterns. This is consistent with other research by Clay and Parker (2020) reported that individuals with high levels of COVID-19-related anxiety were more likely to increase their alcohol and drug use during the pandemic. Other factors that may have contributed to the increase in substance use during the pandemic include social isolation, financial stress, and uncertainty about the future, pre-existing mental health issues.

Table 9 - Frequency table - In the past 7 days, did you use cannabis more often, about the same, or less often overall than you did before the COVID-19 pandemic started?

In the past 7 days, did you use cannabis more often, about the same, or less often overall than you did before the COVID-19 pandemic started?		Frequency	Percent	Valid Percent
	Much less	13	1.3	11.2
	Much more	62	6.2	53.4
	No change	41	4.1	35.3
	Total	116	11.5	100.0
Missing	0	889	88.5	
Total		1005	100.0	

Source: own calculation

The findings from the analysis of responses to the question on cannabis use during the COVID-19 pandemic, as presented in Table 9, indicate that a significant proportion of individuals have reported an increase in their cannabis use compared to before the pandemic. In particular, 53% of the respondents reported an escalation in cannabis use, while only 11% reported a decrease, and 35% indicated no change in their usage patterns.

These results suggest that the pandemic may have had a substantial impact on people's cannabis consumption habits. The COVID-19 pandemic has created a stressful and uncertain environment that may have led some individuals to resort to cannabis use as a coping mechanism. However, as it was mentioned in the literature part of the thesis, it is crucial to acknowledge that excessive cannabis use can have detrimental effects on individuals' cognitive function, respiratory health, and potential addiction.

Table 10 - Frequency table - How worried are you about the impact of COVID-19 on your personal financial situation?

How worried are you about the impact of COVID−19 on your personal financial situation?	Frequency	Percent
Not worried	310	30.8
Worried	695	69.2
Total	1005	100.0

Source: own calculation

The frequency analysis of the responses to the question "How worried are you about the impact of COVID-19 on your personal financial situation?" in Table 10 reveals that a considerable proportion of Canadians expressed concern about the potential impact of the pandemic on their financial situation. Specifically, 69% of participants reported worrying about this issue, while 30% did not express concern. These findings are consistent with previous research that has highlighted the economic repercussions of the pandemic on individuals and households (Adams-Prassl, 2020). Further research could explore whether specific demographic factors, such as income level or occupation, are associated with a greater likelihood of financial worries during the pandemic. Additionally, interventions and policies aimed at addressing the economic impact of the pandemic could be implemented to support those who are experiencing financial strain.

Table 11 - Frequency table – How have physical distancing measures due to the COVID-19 pandemic affected your employment situation?

How have physical distancing measures due to the COVID-19 pandemic affected your employment situation?	Frequency	Percent
I have been laid off, due to the pandemic	172	17.1
I have continued working from home	59	5.9
I have continued working outside my home	167	16.6
I was not employed prior to the pandemic (e.g., retired, student, paid leave, recently graduated) and I am still unemployed	283	28.2
I work from home now	324	32.2
Total	1005	100.0

Source: own calculation

The results of the frequency analysis in Table 11 highlight the significant impact of the COVID-19 pandemic on employment in Canada. The largest group of respondents, comprising 32%, reported transitioning to working from home due to Covid restrictions. This shift reflects a fundamental change in work dynamics and has implications for individuals, organizations, and the broader economy. For individuals, working from home may have resulted in a change in their work-life balance, leading to increased flexibility or the challenge of maintaining boundaries between work and personal life.

In contrast, 28% of respondents reported being unemployed and remaining so. This finding highlights the devastating impact of the pandemic on the labor market and the livelihoods of many Canadians. The high unemployment rate also has broader economic and social implications, including increased inequality and reduced consumer spending, which can negatively impact the economy's recovery.

Furthermore, 17% of respondents were laid off from work, indicating the pandemic's impact on specific industries such as hospitality, tourism, and retail, which have been disproportionately affected by physical distancing measures. The uncertainty surrounding the pandemic's trajectory has led many businesses to adopt a cautious approach, resulting in reduced demand and job losses.

The fact that 17% of respondents continued to work outside of the home highlights the importance of essential services and the critical role played by frontline workers during the pandemic. These individuals faced significant health risks and worked under challenging conditions, highlighting the need for improved working conditions, compensation, and support for essential workers. The importance of essential services and the critical role played by frontline workers during the pandemic has been emphasized by many researchers and policymakers. For instance, a report by the Canadian Centre for Policy Alternatives highlights the critical role of frontline workers in maintaining essential services and ensuring public safety during the pandemic (Bakvis et al., 2020).

In conclusion, the findings of the frequency analysis underscore the complex and multifaceted impact of the COVID-19 pandemic on employment in Canada. While some individuals transitioned to working from home, others faced unemployment, layoffs, or continued to work outside of the home under challenging conditions. These findings have significant implications for individuals, organizations, and the broader economy, highlighting the need for comprehensive policy responses to support workers and businesses during and after the pandemic.

4.3 Chi-square test of the relationship.

The information from the previous chapter provided a baseline for comparison and can also help to determine if there are any factors that can impact the experience of anxiety, depression, and overall worsen well-being during this time. As a next step in my analysis, I would like to use the chi-square test to assess the relationship between socioeconomic factors and mental health. It may also be helpful to consider another useful complementary method - relative risk analysis. This analysis may let me further assess any potential confounding factors that may impact the results and identify the magnitude of the association between the exposure and the outcome.

The following table presents the null hypothesis, the outcomes of the chi-square test, the corresponding p-values, and the final decision regarding the rejection or acceptance of the hypothesis.

Table 12- Hypothesis testing for the Chi-square test

Number	Hypothesis testing	Chi-square	p-value	Conclusion
1	H0: *there is no* relation between whether the person lives alone or not and how often they have felt depressed after the pandemic started.	χ2 is 0,02.	p-value is 0,64.	The relationship *is not* statistically significant. *Fail to reject H0*
2	Ho: *there is no* relation between whether the person lives alone or not and how often they have felt lonely.	χ2 is 14,7.	p-value is less than 0,001.	The relationship *is* statistically significant. *Reject H0*
3	H0: *there is no* relation between the person's age and often they felt depressed after the pandemic started.	χ2 is 14,6.	p-value is less than 0,001.	The relationship *is* statistically significant. *Reject H0*
4	H0: *there is no* relation between the person's gender and how worried the person that he or someone close will get ill from COVID-19.	χ2 is 14,6. .	the p-value is 0,003.	The relationship is statistically significant. *Reject H0*
5	H0: *there is no* relation between the person's gender and the change in alcohol consumption.	χ2 is 17,1	p-value is less than 0,001.	The relationship *is* statistically significant. *Reject H0*
6	H0: *there is no* relation between the person's age and the change in alcohol consumption.	χ2 is 4,13.	p-value is less than 0,13.	The relationship *is not* statistically significant. *Fail to reject H0*
7	H0: *there is no* relation between the person's gender and the change in cannabis use.	χ2 is 0,22.	p-value is less than 0,89.	The relationship *is not* statistically significant.

				Fail to reject H0
8	H0: *there is no* relation between whether the person has kids or not and how much he worries about the impact of COVID-19 on his personal financial situation.	χ2 is 11,3	p-value is less than 0,001.	The relationship *is* statistically significant. *Reject H0*
9	H0: *there is no* relation between the person's yearly income and how much he worries about the impact of COVID-19 on his personal financial situation.	χ2 is 7,01	p-value is 0,14	The relationship *is not* statistically significant. *Fail to reject H0*
10	H0: *there is no* relation between a person's worries about the impact of COVID-19 on his personal financial situation or not and how often he felt hopeful about the future.	χ2 is 14,3	p-value is less than 0,001.	The relationship *is* statistically significant. *Reject H0*

Source: own calculation.

Based on the results of the chi-square test in Table 12, it was determined that the null hypotheses for several tests were rejected, indicating the presence of significant relationships between the variables being studied. Specifically, the relationship between living alone and feelings of loneliness, age and depression, gender and concern regarding close contact contracting COVID-19, depression, and alcohol consumption, and having children and concerns about the impact of COVID-19 on personal financial situations. As these variables have exhibited significant relationships and thus have the potential to provide valuable information for further investigation.

The Relationship between Living Alone and Feelings of Loneliness.

As the COVID-19 pandemic has led to social isolation and physical distancing measures, which may have further exacerbated the feelings of loneliness among individuals

who live alone. Upon a more detailed examination of Graph 1, it becomes apparent that among the entire population of individuals who live alone, 33% reported feeling lonely most of the time. In contrast, among those who live with others, 26% reported feeling lonely most of the time. This suggests that people who live alone tend to experience feelings of loneliness more frequently than their counterparts who live with others. According to the relative risk test in Table 13, people who live alone are 1,6 times more likely to feel lonely than those who live with someone.

Graph 1– Do you live alone or with others? X In the past 7 days, how often have you felt lonely?
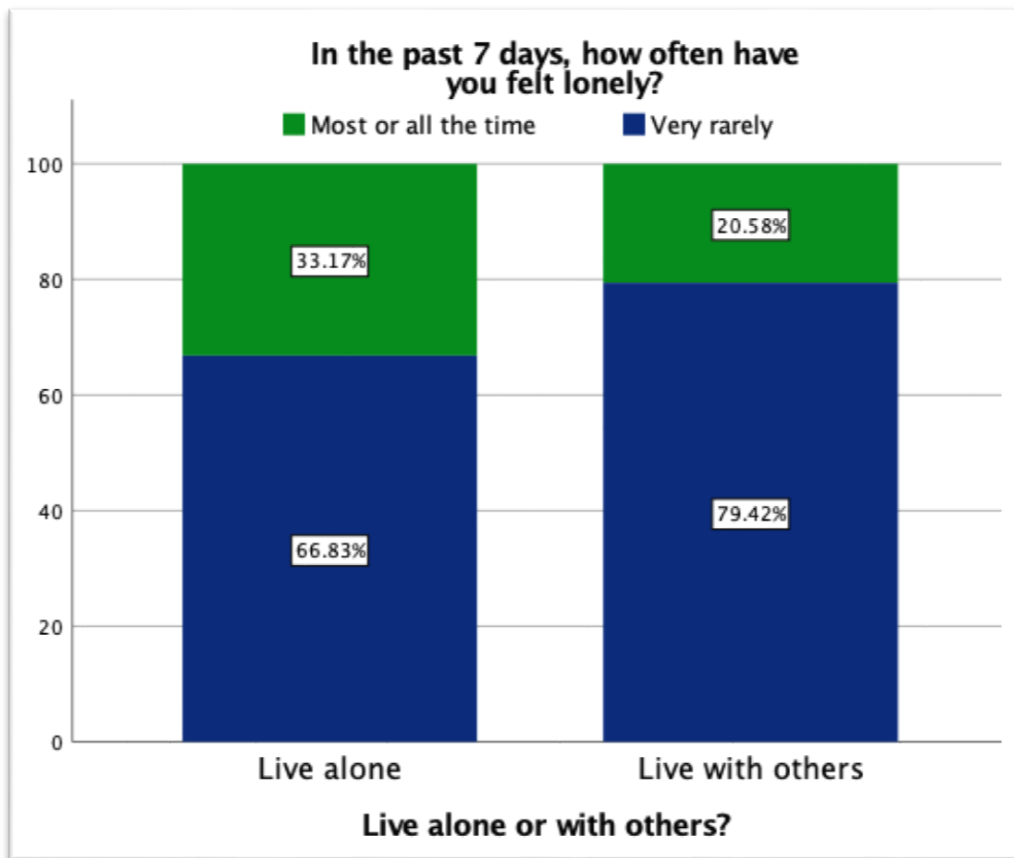
Source: own calculation.

Table 13 - Relative risk analysis - Do you live alone or with others? X In the past 7 days, how often have you felt alone?

Risk Estimate			
		95% Confidence Interval	
	Value	Lower	Upper
Odds Ratio for: Live alone or with others? (Live alone / Live with others)	1.916	1.369	2.681
For cohort How often have you felt lonely? = Most or all the time	1.612	1.273	2.042
For cohort How often have you felt lonely? = Very rarely	.841	.760	.932
N of Valid Cases	1005		

Source: own calculation.

The Relationship between Age and Feelings of Depression.

People of all ages, including children, adolescents, adults, and elderly individuals, can suffer from depression Based on the data presented in Graph 2, it appears that younger adults aged 18 to 39 and middle-aged adults aged 40 to 59 have similar rates of depression, with 24% and 23% respectively reporting feeling depressed most of the time. In contrast, older adults aged 60 and over have a lower prevalence of depression, with only 13% reporting feeling depressed most of the time.

Graph 2 – Age group X In the past 7 days, how often have you felt depressed?

In the past 7 days, how often have you felt depressed?

■ Most or all the time   ■ Very rarely

Age group	Most or all the time	Very rarely
18–39	24.37%	75.63%
40–59	22.55%	77.45%
60.0	13.11%	86.89%
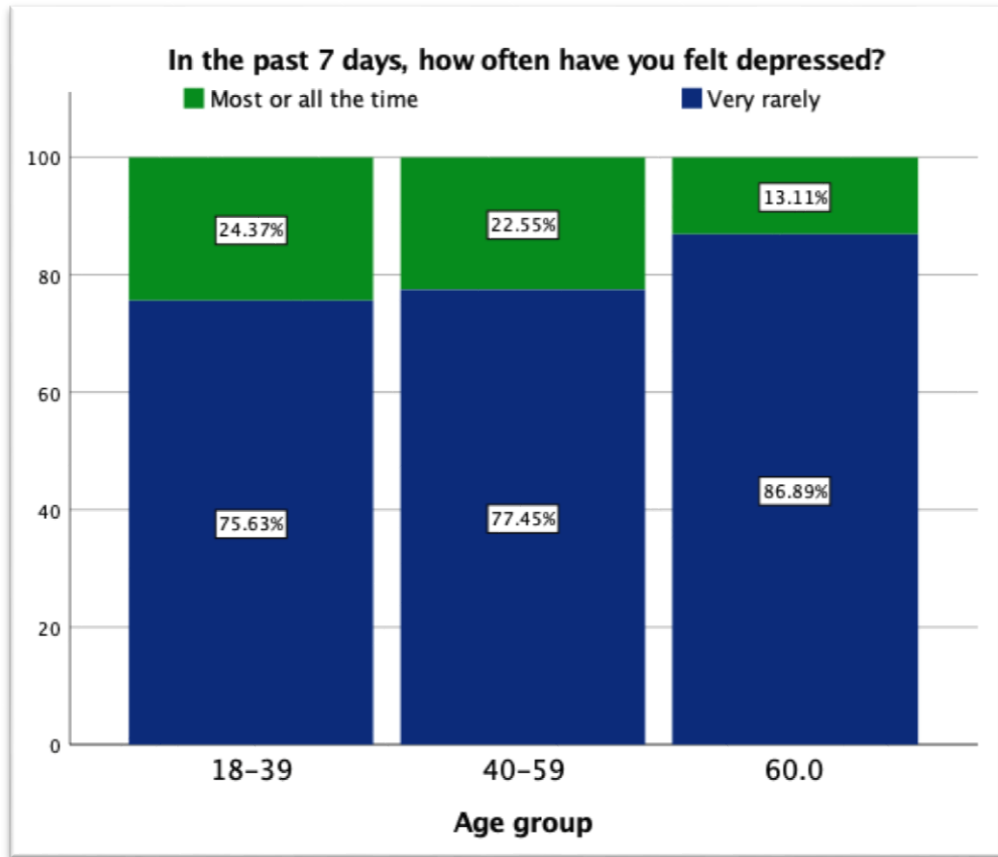
Source: own calculation

The Relationship between Gender and Concern regarding someone close to them contracting COVID-19.

The results of the chi-square hypothesis testing suggest that there is a significant relationship between gender and the level of concern individuals hold regarding someone close to them contracting COVID-19. These findings are supported by the data presented in Graph 3, which displays the proportions of worried and unworried individuals by gender. The graph shows that a higher percentage of females (81%) reported feeling worried.

Table 14, which presents the results of the relative risk analysis, reveals that females are 1.11 times more likely to express concern regarding close contact contracting COVID-19 than males.

*Graph 3 - Gender x how worried are you that someone close to you will get ill from
COVID-19?*
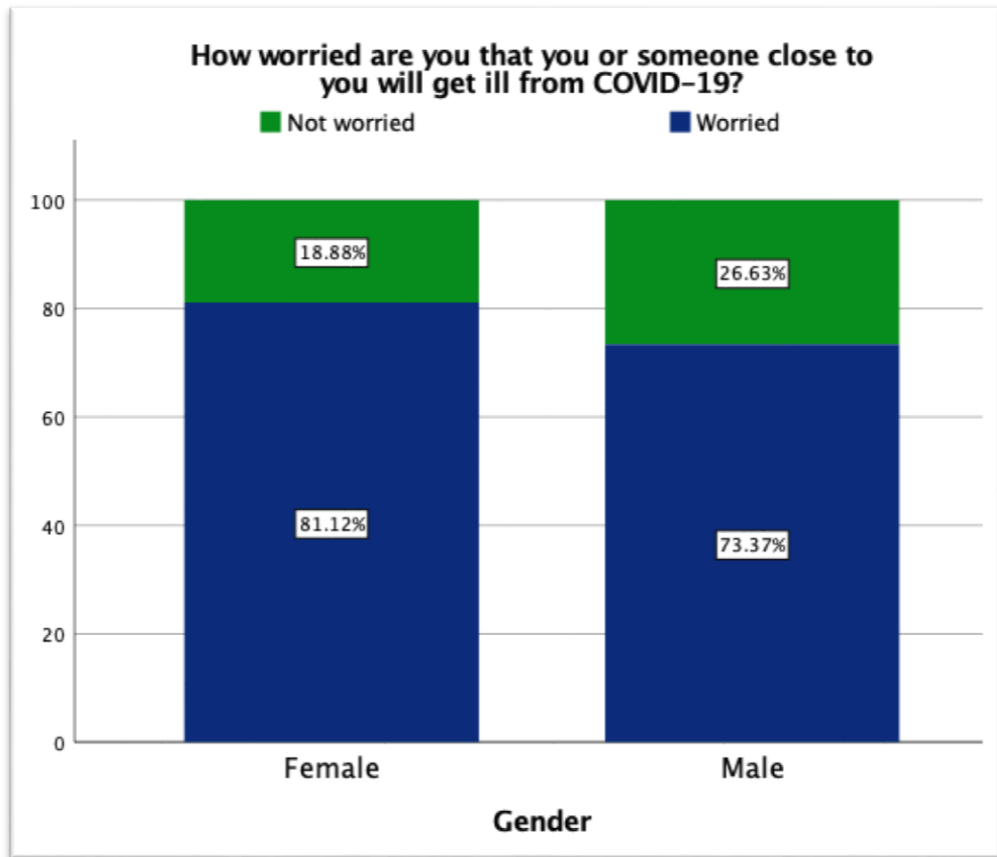
Source: own calculation

Table 14 - Relative risk analysis - Gender x how worried are you that someone close to you will get ill from COVID-19?

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Gender identity (Female / Male)	.641	.476	.864
For cohort: How worried are you that you or someone close to you will get ill from COVID-19? = Not worried	.709	.562	.894
For cohort : How worried are you that you or someone close to you will get ill from COVID-19? = Worried	1.106	1.034	1.183
N of Valid Cases	1005		

Source: own calculation

The Relationship between Feelings of Depression and Alcohol Consumption.

This relationship between depression and alcohol consumption is evident in Graph 4, which displays the proportions of participants who feel depressed by their level of alcohol consumption. Specifically, among those who drink less alcohol, 12% rarely feel depressed, while only 2% report feeling depressed all the time. Conversely, among those who drink more alcohol, 32% rarely feel depressed, while 13% feel depressed most of the time. Among those whose alcohol consumption did not change, 34% rarely feel depressed, while 6% feel depressed all the time.

Graph 4 – In the past 7 days, how often have you felt depressed? X Did you drink more alcohol, about the same, or less alcohol overall than you did before the COVID-19 pandemic started?
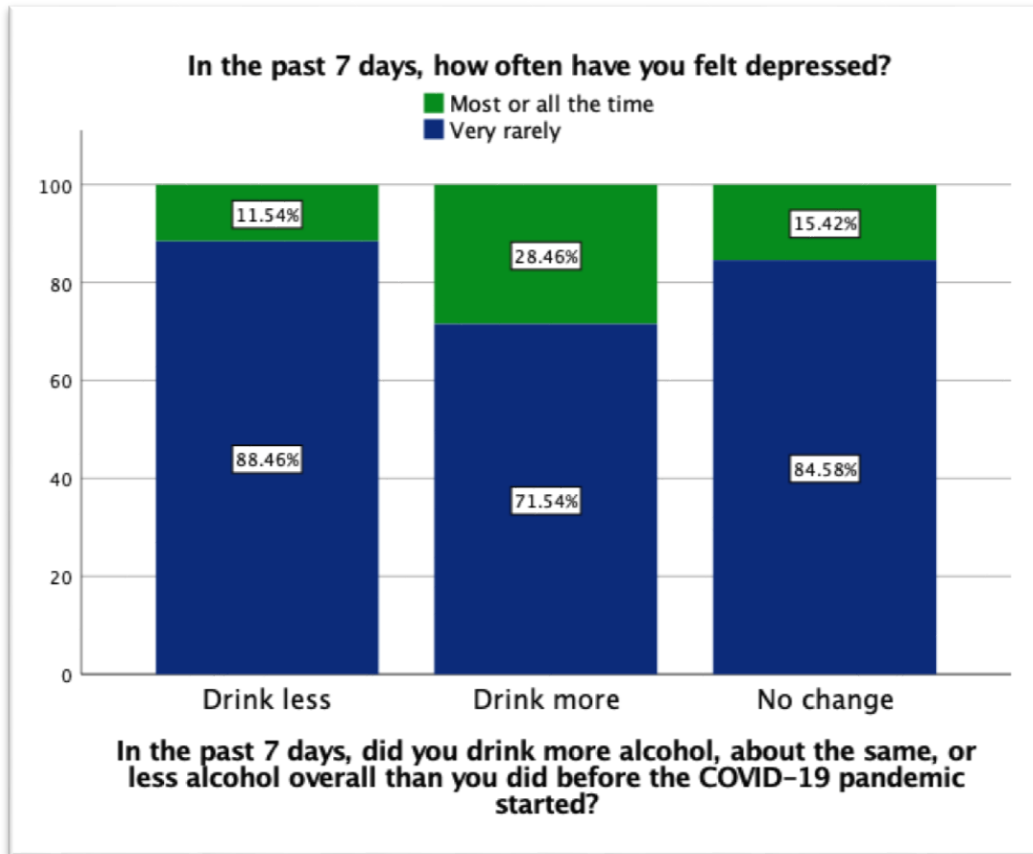

Source: own calculation.

The Relationship between Having Children and the Impact of COVID-19 on Personal Financial Situation.

Graph 6 displays a relationship between having children and worries regarding the impact of COVID-19 on personal financial situations. The data presented in the Graph 5 shows that among those who have children 78% reported being concerned about the impact of COVID-19 on their personal financial situation, compared to those who do not have children, where 66% reported being worried about the same.

Table 15 furnishes the results of the relative risk analysis, which reveal that individuals with children in their households are 1.18 times more likely to be worried about their financial situation than those without.

Graph 5 – Do you have children living in your household? X How worried are you about the impact of COVID-19 on your personal financial situation?
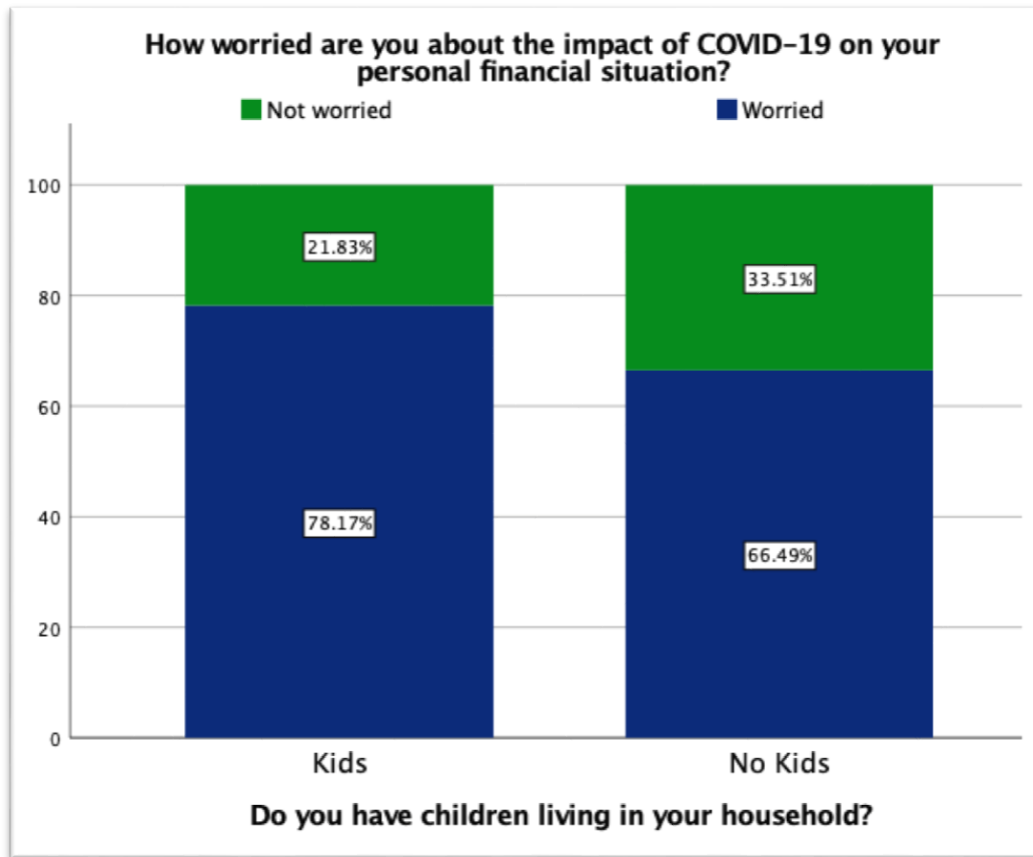
Source: own calculation

Table 15 - Relative risk analysis - Do you have children living in your household? X How worried are you about the impact of COVID-19 on your personal financial situation?

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for hChildren : Do you have children living in your household? (Kids / No Kids)	.554	.392	.784
For cohort : How worried are you about the impact of COVID–19 on your personal financial situation? = Not worried	.652	.500	.849
For cohort : How worried are you about the impact of COVID–19 on your personal financial situation? = Worried	1.176	1.080	1.279
N of Valid Cases	1005		

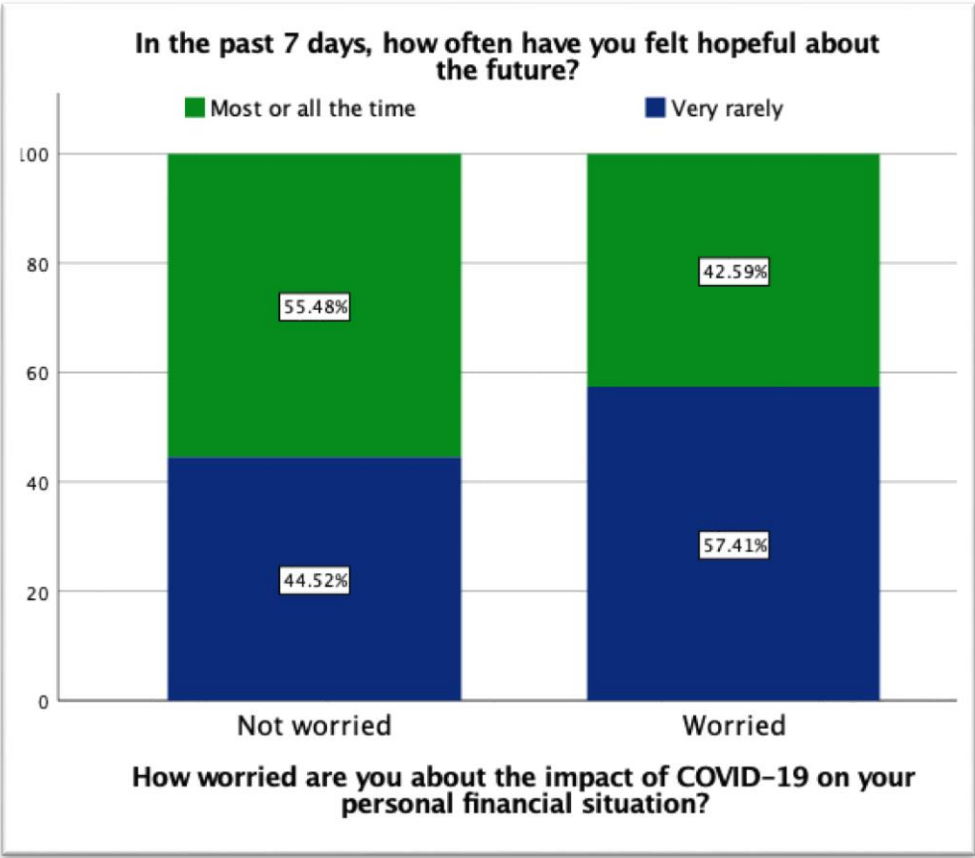*Source: own calculation*

The Relationship between Worries about the Impact of COVID-19 on Personal Financial Situation and Hope for the Future.

The findings presented in Graph 7 suggest that there is a notable percentage of individuals who experience reduced hopefulness about their future, with the proportion being higher among those who worry about their financial situation. Specifically, among individuals who worry about their financial situation, 43% reported rarely feeling hopeful about their future, whereas among those who do not worry, the proportion was 45%. The results from the relative risk analysis presented in Table 16 further support this observation, indicating that individuals who worry about their financial situation are 1.3 times more likely to feel hopeful about their future than those who do not worry. This finding is consistent with previous research that has shown a link between financial stress and negative psychological outcomes, such as anxiety and depression (Kim & Garman, 2019).

Graph 6 – How worried are you about the impact of COVID-19 on your personal financial situation? X In the past 7 days, how often have you felt hopeful about the future?

Source: own calculation.

Table 16 - Relative risk analysis - How worried are you about the impact of COVID-19 on your personal financial situation? X In the past 7 days, how often have you felt hopeful about the future?

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for : How worried are you about the impact of COVID-19 on your personal financial situation? (Not worried / Worried)	1.680	1.283	2.200
For cohort : How often have you felt hopeful about the future? = Most or all the time	1.303	1.142	1.486
For cohort : How often have you felt hopeful about the future? = Very rarely	.775	.674	.892
N of Valid Cases	1005		

Source: own calculation.

Here are the key findings obtained after conducting a thorough analysis of the contingency table and performing a relative risk analysis:

- Individuals who live alone are more likely to feel lonely most or all the time compared to those who live with others, highlighting the need to pay attention to the mental health outcomes of individuals who live alone, particularly during the COVID-19 pandemic.

- Age is an important factor to consider when assessing the risk of depression, with younger individuals aged 18 to 39 being less likely to experience frequent episodes of depression compared to those aged 40 to 59.

- Gender plays a role in shaping individuals' levels of concern and attitudes toward the COVID-19 pandemic, with women exhibiting higher levels of concern compared to men.

- Alcohol consumption may be associated with higher levels of depression, although further research is needed to establish a causal relationship.

- Finally, having children is associated with higher levels of worry about the impact of COVID-19 on personal financial situations. Overall, these findings highlight the

significant impact that the COVID-19 pandemic has had on individuals' financial and emotional well-being.

It is important to keep in mind that these are not necessarily causal relationships. However, these findings can help us better understand the potential risk factors for negative mental health outcomes and inform interventions and support for individuals who may be particularly vulnerable, such as those who live alone or have young children. Further research can help to establish causal relationships and provide more specific guidance for the prevention and treatment of mental health issues related to COVID-19.

4.4 Population proportion test

This part aims to examine whether there has been a change in proportions following the second survey conducted after 17 days. To achieve this, I have computed the u-value and intend to employ the population proportion test. Specifically, I will compare the calculated u-value with the critical value of 1.96, corresponding to a 95% significance level. The contingency tables that were created and used for calculation are in the appendix part of the thesis. The following Table 17 presents pertinent information pertaining to the null hypothesis, the computed u-value, and the conclusion drawn from the statistical analysis, which will inform whether to reject or accept the null hypothesis.

Table 17 – Hypothesis testing for the population proportion.

Number	Hypothesis	u-value	Conclusion
1	H0: the proportion of people who live alone and feel lonely all the time is the same in both surveys.	u – value is equal to -0,2	*Fail to reject H0.* The proportion is the same.
2	H0: the proportion of people aged 18 to 39 who feel depressed all the time is the same in both surveys.	u – value is equal to -0,2	*Fail to reject H0.* The proportion is the same.
3	H0: the proportion of people aged 40 to 59 who feel	u – value is equal to -0,7	*Fail to reject H0.* The proportion is the same.

	depressed all the time is the same in both surveys.		
4	H0: the proportion of females who are worried for their close ones is the same in both surveys.	u – value is equal to 3,3	*Reject H0.* The proportion is different.
5	H0: the proportion of people who feel depressed all the time and started drinking more is the same in both surveys.	u – value is equal to -0,9	*Fail to reject H0.* The proportion is the same.
6	H0: the proportion of people who have kids and are worried about the impact of Covid-19 on their financial situation all the time is the same in both surveys.	u – value is equal to 2	*Reject H0.* The proportion is different.
7	H0: the proportion of people who worry about the impact of Covid-19 on their financial situation all the time rarely feel hopeful about the future is the same in both surveys.	u – value is equal to -0,2	*Fail to reject H0.* The proportion is the same.
8	H0: the proportion of people who do not worry about the impact of Covid-19 on their financial situation ans most of their time feel hopeful about the future is the same in both surveys.	u – value is equal to 1,09	*Fail to reject H0.* The proportion is the same.

Source: own calculation

Based on the results of the population proportion tests, it was found that for hypotheses 1, 2, 3, 5,7, and 8, there was no significant difference between the proportions in the two surveys, indicating that the proportions are the same. However, for hypotheses 4 and 6, a

significant difference was found between the proportions in the two surveys. Therefore, it can be concluded that the proportions for these hypotheses have changed.

Based on the results of the two surveys, it was found that for females who are worried about their close ones, the proportion in the first survey was 82%. However, for the second survey, the proportion decreased to 73%, which is still a considerable proportion, but it is indeed changed.

Similarly, for people who have kids and are worried about the impact of Covid-19 on their financial situation, the proportion decreased slightly from 80% in the first survey to 77% in the second survey. Although the decrease is small, the proportion remains significant.

It is important to note that these changes in proportions were the only statistically significant findings in the surveys. However, given the short duration of the survey period, it is possible that more significant changes may occur over a more extended period.

5. Results and Discussion

The frequency analysis presented in the article highlights the psychological and emotional impact of the COVID-19 pandemic on Canadians. The results indicate that a significant proportion of individuals are experiencing anxiety, worry, fear, and loneliness. Moreover, a considerable proportion of respondents reported feeling worried about the potential financial consequences of the pandemic. The analysis also highlights the impact of the pandemic on employment, with the largest group of respondents transitioning to working from home due to Covid restrictions. Overall, the frequency analysis provides valuable insights into the experiences of Canadians during the COVID-19 pandemic and highlights the need for continued support and resources to address the mental health and economic impacts of the pandemic. Otherwise, further research is necessary to draw more meaningful conclusions about the mental health of Canadians during the lockdown.

Moreover, the study underscores the need to pay attention to the mental health outcomes of individuals who live alone, as Cacioppo found out that loneliness is associated with negative mental health outcomes such as depression and anxiety (Cacioppo & Cacioppo, 2018). Thus, addressing loneliness among individuals who live alone is crucial not only for their subjective well-being but also for their mental health. Thus, the need to address loneliness among individuals who live alone has become even more crucial during this pandemic.

Overall, the findings suggest that age is an important factor to consider when assessing the risk of depression. Younger individuals and middle-aged individuals may be at a higher risk. Young adults may experience depression due to a variety of stressors and changes in their lives, such as academic pressures, social and relationship problems, and changes in family dynamics. These findings are consistent with previous research that has shown that depression rates tend to peak in middle age and decline in older age. For example, a large-scale study by Kessler and colleagues (2005) found that the prevalence of major depression peaked in middle age, with rates highest among adults aged 30-44 years. There are several possible explanations for the observed age-related variation in depression prevalence. One possible explanation is that older adults may have developed better coping mechanisms and resilience over time, which helps them to better manage stress and negative emotions. Additionally, older adults may have a more positive outlook on life and a greater sense of purpose, which can contribute to better mental health outcomes.

The study also suggests that gender plays a role in shaping individuals' levels of concern and attitudes toward the COVID-19 pandemic, and it corresponds with the research that claims that women may exhibit higher levels of health consciousness and engage in more protective health behaviors compared to men (Alpalhao, 2020). These differences could be due to various reasons, including that women are more likely to hold caregiving responsibilities and may, therefore, be more concerned about the health of their loved ones, including the potential risk of COVID-19.

It is reasonable to deduce that having children engenders additional financial obligations that may contribute to an augmented level of worry regarding how COVID-19 will affect one's financial state. (Smith, 2022). Furthermore, the COVID-19 pandemic has disrupted the employment and financial stability of many families. For example, many parents have had to take time off work to care for their children due to school and daycare closures, which may have reduced their income (CARES Act, 2020). The insights gained from this analysis can inform policy and interventions aimed at supporting families during times of economic uncertainty, such as the COVID-19 pandemic.

It is important to note that the COVID-19 pandemic has caused significant financial stress for many individuals and families, which may be contributing to the negative relationship between financial worries and feelings of hopefulness for the future. Therefore, these findings suggest the importance of addressing financial stress as a means of improving psychological well-being and overall quality of life, especially during times of economic uncertainty such as the COVID-19 pandemic.

It appears that people who consume more alcohol may be more likely to experience depression. This is suggested by the higher percentages of individuals who report feeling depressed most of the time or all the time in the group that drinks more compared to the group that drinks less or the group whose consumption did not change. However, it is important to note that correlation does not necessarily imply causation, and further research would be needed to establish a causal relationship between alcohol consumption and depression.

6. Conclusion

This thesis examined the impact of the COVID-19 pandemic on the mental health of people in Canada. The study utilized survey data collected by the Centre for Addiction and Mental Health (CAMH) and the research technology company Delvinia. The research questions that this thesis aimed to answer included examining the impact of the pandemic on mental health, investigating how pandemic-related restrictions affect mental well-being, assessing whether significant differences in mental well-being exist among Canadians based on socioeconomic factors, as well as whether these factors have changed over time during the pandemic.

The frequency analysis highlights the psychological and emotional impact of the COVID-19 pandemic on Canadians, indicating a significant proportion of individuals experiencing anxiety, worry, fear, and loneliness.

The chi-square tests demonstrate that several factors, such as living alone, age, gender, alcohol consumption, and having children, are associated with negative mental health outcomes. These findings emphasize the need for continued support and resources to address the pandemic's effects on the economy and mental health.

The population proportion tests indicate that some variables remained constant, while others showed significant changes over time, emphasizing the need for continued research and policy interventions to mitigate the negative impact of the pandemic on mental health. Overall, the article provides valuable insights into the impact of the COVID-19 pandemic on mental health in Canada, highlighting the factors that influence mental well-being during times of crisis.

The findings of this study provide valuable insights into the impact of the COVID-19 pandemic on mental health in Canada, highlighting the need for continued support and resources to address the mental health and economic impacts of the pandemic.

In conclusion, this study calls for continued efforts to address the mental health impacts of the COVID-19 pandemic, with a particular focus on vulnerable groups such as those who live alone, those with young children, and those experiencing financial strain. Future research should continue to explore the long-term impact of the pandemic on mental health, as well as the effectiveness of various interventions and support strategies for those impacted by the pandemic.

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8. Appendix

Q5: How worried are you about the impact of COVID-19 on your personal financial situation?

Q6: How have physical distancing measures due to the COVID-19 pandemic affected your employment situation?

Q7: How worried are you that you or someone close to you (close relative or friend) will get ill from COVID-19?

Q8: Have you been recently …

Q8x1: Feeling nervous, anxious or on edge?

Q8x2: Not being able to stop or control worrying?

Q8x3: Worrying too much about different things

Q8x4: Trouble relaxing

Q8x5: Being so restless that it is hard to sit still

Q8x6: Becoming easily annoyed or irritable

Q8x7: Feeling afraid as if something awful might happen

Q9: During the past 7 days on how many days did you drink alcohol?

Q10: In the past 7 days, did you drink more alcohol, about the same, or less alcohol overall than you did before the COVID-19 pandemic started?

Q11: During the past 7 days on how many days did you use cannabis?

Q12: In the past 7 days, did you use cannabis more often, about the same, or less often overall than you did before the COVID-19 pandemic started?

Q13_1: In the past 7 days, how often have you felt depressed?

Q13x2: In the past 7 days, how often have you felt lonely?

Q13x3: In the past 7 days, how often have you felt hopeful about the future?

Q14: Live alone or with others?

Q15: Do you have children living in your household?

Q16: What is your current marital status?

Q17: Total household income received in the 2019 year before taxes?

Q18: What area you consider to be living in?

Survey status		In the past 7 days, how often have you felt lonely?		
		Most or all the time	Very rarely	Total
1	Live alone	69	139	208
2	Live alone	73	141	214

Survey status			In the past 7 days, how often have you felt depressed?		
			Most or all the time	Very rarely	Total
1	Age group	18–39	96	298	394
		40–59	69	236	305
2	Age group	18–39	97	292	389
		40–59	78	234	312

Survey status			How worried are you that you or someone close to you will get ill from COVID–19?		
			Not worried	Worried	Total
1	Gender	Female	94	404	498
		Male	135	372	507
2	Gender	Female	138	359	497
		Male	148	357	505

Survey status			In the past 7 days, did you drink more alcohol, about the same, or less alcohol overall than you did before the COVID–19 pandemic started?		
			Drink less	Drink more	Total
1	In the past 7 days, how often have you felt depressed?	Most or all the time	9	72	205
		Very rarely	69	181	800
2	In the past 7 days, how often have you felt depressed?	Most or all the time	18	83	212
		Very rarely	100	170	790

	Survey status	How worried are you about the impact of COVID–19 on your personal financial situation?		
		Not worried	Worried	Total
1	Kids	50	179	229
	No Kids	260	516	776
2	Kids	71	165	236
	No Kids	288	478	766

	Survey status		In the past 7 days, how often have you felt hopeful about the future?		
			Most or all the time	Very rarely	Total
1	How worried are you about the impact of COVID–19 on your personal financial situation?	Not worried	172	138	310
		Worried	296	399	695
2	How worried are you about the impact of COVID–19 on your personal financial situation?	Not worried	184	175	359
		Worried	270	373	643