

# **Perceptions of Crime Changes, Well-Being, and Personal Safety During the COVID-19 Pandemic**

by

Siobhan M. Green

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**THESIS EXAMINATION INFORMATION**

Submitted by: Siobhan Green

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Perceptions of Crime Changes, Well-Being, and Personal Safety During the COVID-19 Pandemic
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An oral defense of this thesis took place on August 4, 2021 in front of the following examining committee:

**Examining Committee:**

Chair of Examining Committee	Dr. Leigh Harkins
Research Supervisor	Dr. Karla Emeno
Examining Committee Member	Dr. Joseph Eastwood
Thesis Examiner	Dr. Tanya Karam-Zanders, Ontario Tech University

The above committee determined that the thesis is acceptable in form and content and that a satisfactory knowledge of the field covered by the thesis was demonstrated by the candidate during an oral examination. A signed copy of the Certificate of Approval is available from the School of Graduate and Postdoctoral Studies.

### **Abstract**

Ontarians have been greatly impacted by the COVID-19 pandemic in terms of their personal safety, well-being, and stress. As such, data was collected in January 2021 and surveyed 258 Ontarians to determine the effects that these factors have had on the public, and the public's perceptions of crime changes from mid-March to mid-December 2020 and whether these perceptions were influenced by being an essential worker, gender, age, and minority status. Results found that stress was higher for essential workers during the first nine months of the pandemic. Overall crime was perceived to have remained the same, while child abuse, cybercrime, domestic violence, drug-related crime, financial crime, and hate crime were perceived to have increased. Female minority respondents felt less safe during the pandemic and well-being was more negatively impacted for younger respondents. Overall, the study findings suggest that resources are needed to recover from, and be prepared for, future pandemics.

*Keywords:* Crime Trends; Mental Health; Work Stress; COVID-19 Pandemic; Safety

**AUTHOR'S DECLARATION**

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Siobhan Green

## **STATEMENT OF CONTRIBUTIONS**

I hereby certify that I am the sole author of this thesis and that no part of this thesis has been published or submitted for publication. I have used standard referencing practices to acknowledge ideas, research techniques, or other materials that belong to others. Furthermore, I hereby certify that I am the sole source of the creative works and/or inventive knowledge described in this thesis.

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## **Perceptions of Crime, Well-Being, and Personal Safety During the COVID-19 Pandemic**

While COVID-19 has been wreaking havoc across the globe throughout 2020 and into 2021, it is important to put into perspective the impact that this virus has had on people's safety and well-being. In order to assist with this goal, this thesis examined changes in public perceptions of crime and safety throughout Ontario, Canada in the first nine months of the pandemic (i.e., mid-March to mid-December 2020), as well as the public's overall well-being in terms of mental health and stress. There is potential for stress levels and mental well-being to directly impact individuals' perceptions of crime; as such, this study also examined the connection between these concepts.

### **Coronavirus Disease of 2019 (COVID-19)**

Coronavirus is a common type of virus that affects the nose and throat and although it is typically not life threatening, some strains of coronavirus are deadlier than others (including MERS and SARS; WebMD, 2020). In late 2019, another type of coronavirus was discovered – COVID-19. COVID-19 is an extremely contagious respiratory virus that was first contracted in Wuhan, China at the end of December 2019. Canadian health officials confirmed Canada's first case on January 25<sup>th</sup>, 2020 from a man in Toronto who had recently travelled to Wuhan (Bronca, 2020). This patient was deemed "patient zero." At that point in time, most of the concern was targeted to individuals who had travelled to infected areas. However, COVID-19 was declared a pandemic by the World Health Organization (WHO) on March 11<sup>th</sup>, 2020.

Initially, individuals considered most at risk of developing severe symptoms of the virus were identified as those 65 years old or older, those with compromised immune systems, and those with underlying medical conditions (Government of Canada, 2020). Despite this, everyone was ultimately deemed at risk given the unpredictable nature of this virus, with severe cases

being possible in other groups as well, and its ability to spread through people who are either symptomatic or asymptomatic (i.e., show no symptoms of COVID-19 but are carriers of the virus; Government of Canada, 2020). Between the start of the pandemic and December 2020, which is the timeframe examined in the current study, there had been over 64.7 million confirmed cases of COVID-19 and 1.51 million deaths worldwide, while in Canada alone there had been 403,000 cases and 12,496 deaths, with Ontario accounting for 125,000 of those cases and 3,727 of those deaths (WHO, 2020). By the end of June 2021, Ontario's case count had risen to 544,000 and the death rate had risen to 9,129. Governments across the globe put strict social distancing measures and stay-at-home orders in place to curb the spread of the virus. These safety measures have varied over the course of the pandemic as there have been more restrictions in "hot spot" locations and second waves and third waves of the virus put many areas back into a stricter lockdown (WHO, 2020).

In mid-March 2020 the entire country shut down as they closed all non-essential businesses and public spaces to limit contact and reduce the spread of the illness. Essential services included those deemed necessary to preserving life, health, and societal functioning. They also banned non-essential international travel and closed the borders to the United States. The government developed programs to compensate individuals and families who were no longer working as a result of the pandemic, as well as those who were deemed "essential" and continued to work the frontlines regardless of the virus, whether that be hazard pay or government funded compensation.

In Ontario specifically, residents have been required to wear masks when social distancing is not possible, as well as inside all public spaces. Within Canada, each province has had a vast range of restrictions and have been re-opening, and closing again, on an at-risk basis.

Ontario has been through three waves of the virus, with the second one beginning in November 2020 and the third beginning in April 2021, which resulted in tighter lockdown restrictions in order to not overwhelm the healthcare system. During the third wave, the COVID-19 vaccine began being distributed. As of June 2021, 67% of all Canadians had at least one shot of the vaccine and 19% of the nation were fully vaccinated against the virus. In addition to the above-mentioned protocols, the well-being of both the public and essential workers are of major importance and yet there is limited protocol in place to ensure residents are healthy in terms of their mental well-being and not just their physical health (in relation to COVID-19). Health, financial strain, and public safety have been vastly impacted during these unprecedented times. For example, some individuals who have tested positive for COVID-19 have experienced significant post-traumatic stress symptoms due to the illness and the stigma behind the diagnosis (Bo et al., 2020). As such, it is crucial for these factors to be explored to provide appropriate resources for the public during these times.

As previously mentioned, well-being is important to focus on during the pandemic as biological disasters such as COVID-19 insert an undue amount of fear and uncertainty for patients, health care workers, and the general population (Hsieh et al., 2020). The first serious infectious disease of this strain known to date was SARS in 2003 and like COVID-19, it left major economic, social, and medical impacts on the world (Hsieh et al., 2020). Consequently, every new infectious disease that appears (including MERS, H1N1 and now COVID-19) evokes severe fear and anxiety in many countries (Hsieh et al., 2020). Furthermore, strict isolation regulations put in place are often taxing on one's psychological well-being as there is a lot of negative stigma attached to these individuals (Peng et al., 2004). Mental well-being will be discussed further in the subsequent literature review.

In addition to well-being, there has been minimal research released specific to how COVID-19 has impacted crime. During the first few weeks of the pandemic, the National Post reported on crime data from multiple police regions in Canada (Fitzpatrick, 2020). At that time, York Regional Police reported that there had been a decrease in traffic violations (32%), driving under the influence (29%), and fraud (16%), but there had been a large increase in cases of domestic violence (22%), commercial break-ins (45%), and stunt driving (60%) in the York region of Toronto. Similar trends were also observed in Ottawa, Edmonton, and Vancouver for those initial few weeks of the pandemic.

Boman and Gallupe (2020) examined crime rates in the United States from January 1<sup>st</sup> to May 28<sup>th</sup>, 2019, pre-pandemic to January 1<sup>st</sup> to May 28<sup>th</sup>, 2020, post stay-at-home orders. They found a decrease in calls for service for minor crime, such as minor property crimes that are committed with peer groups. These are crime types that typically involve more group participation in the crime and the stay-at-home orders would have decreased the opportunity for group committed crime to occur. However, it seems that the stay-at-home orders provided more opportunity for some serious crime types, such as intimate partner violence (IPV) and possibly homicides to take place. Two previously known homicide hot spot cities, Chicago and Philadelphia, compared their recorded homicides from January 1<sup>st</sup> to May 28<sup>th</sup>, 2020 with the recorded homicides of the same time period in 2019, no significant differences in homicide rates were found. However, the Maumee, Ohio Police Department compared rates of IPV from January 1<sup>st</sup> to May 28<sup>th</sup>, 2020 (73 incidents) with the same time period in 2019 (55 incidents) and found a 33% increase in reported rates of IPV. While IPV often goes unreported, these specific instances were those that could explicitly be deemed as incidents of intimate partner violence and not just domestic arguments which can also be tracked on their calls for services database.

Domestic arguments were listed as incidents where there is no explicit evidence of intimate partner violence.

While both mental well-being and crime may be impacted by the COVID-19 pandemic, they also may be impacted by each other during these times. A person's mental well-being throughout a pandemic could play a role in whether they participate in various criminal activities. Specifically, someone who is not coping well with the pandemic and is experiencing more depressive symptoms may be more likely to abuse their children or spouse. They may also participate in financial crime if they are experiencing financial hardships throughout the pandemic or they may turn to alcohol or drug related criminal activities in order to cope with stress cause by the pandemic. As such, it is important to examine both well-being and crime as there is a possibility of them being interconnected in how the COVID-19 pandemic may affect them and their perceptions of these various changes.

### **Crime and COVID-19**

In addition to the above-mentioned crime types (i.e., traffic violations, fraud, domestic violence, property crime, homicides), there are a series of other crimes that will be examined in further detail throughout this literature review including: alcohol and drug-related crime, domestic abuse, child abuse, cybercrime, financial crime, hate crime, violent crime, property crime, sexual crime, and trafficking (human, sex, and drug), along with mental illness. While there is potential for various crime types to have changed during these unprecedented times, it is a challenge to understand how and why these crimes are changing. As such, I will be using the Routine Activity Theory to help explain why these trends might be emerging.

### ***Routine Activity Theory***

One major theory that suggests that crime rates have been impacted by the COVID-19 pandemic is Routine Activity Theory (RAT; Cohen & Felson, 1979). This theory is comprised of three major components that when combined, result in the occurrence of crime: (1) the presence of a motivated offender, (2) the presence of a suitable target, and (3) the absence of a capable guardian (Cohen & Felson, 1979). It seems likely that a pandemic would impact these three components differently across various crime types. Thus, this theory can be used to help explain why some types of crime might increase during a pandemic, whereas other types of crime might decrease during a pandemic. For example, pre-pandemic crime may include more street-related crimes, while crime during the pandemic may include more acts of domestic or child abuse, as people are being urged to stay home more to stop the spread of the virus. This theory also explains how victimization can happen through the change in one's regular routines to meet the conditions necessary for crime to occur (Cohen & Felson, 1979).

### ***Alcohol-Related Crime***

Ontario has deemed alcohol sales an essential service, which includes the LCBO, grocery store liquor sales, and restaurant takeout of alcoholic beverages; this was done to support businesses and those with alcohol dependence (Alcohol and Gaming Commission, 2020; Hobin & Smith, 2020). However, it may in fact encourage alcohol consumption for the rest of the population by sending a message that alcohol is essential to our lives (Hobin & Smith, 2020). Research shows that traumatic events such as a natural disaster can lead to an increase in alcohol consumption not only during the event but up to two years after the event (Cerdeira et al., 2011). Since the lockdown began in March 2020, a national survey indicated that weekly alcohol consumption has increased in Canada by 14% for those aged 15 years or older in the first phase

of the pandemic (the data collection period for this survey was from March 29<sup>th</sup> to May 3<sup>rd</sup>; Rotermann, 2020). While there is limited crime data on these incidents during the pandemic, the increase in drinking within Canada since the pandemic began could ultimately lead to an increase in the various alcohol-related crimes mentioned in Table 2.

### ***Drug-Related Crime***

While alcohol consumption may be problematic during the pandemic, a study by Dubey et al. (2020) has demonstrated that there may be a bi-directional relationship between COVID-19 and drug addiction as well. If individuals are unable to access substances using medical resources during the pandemic, they are more likely to get them using illegal means (i.e., committing crimes to pay for drugs) or buying more lethal/toxic drugs that are readily available, which can also lead to heightened risks of coming in contact with someone infected by COVID-19, not using clean supplies or overdosing and needing medical attention (Dubey et al., 2020; UN News, 2020). Furthermore, accessing drugs illegally may also result in arrests and prison time, which involves putting individuals in environments that are not necessarily as clean because they do not have resources to provide all inmates with proper PPE and are not able to practice proper social distancing. This has already been seen in a number of institutions throughout Ontario. Thus, the RAT might suggest an increase in these certain types of crimes.

### ***Child and Domestic Abuse***

On another note, as people worldwide have been confined to their homes, whether that be in isolation or simply working from home, families are together much more frequently. UN Women (2020) examined rates of domestic violence from various countries around the world since the lockdown began and found that France and Argentina both reported an increase in rates of domestic violence, 30% and 25%, respectively. An increase was also reported in Canada,

Germany, Spain, the United Kingdom, and the United States, although exact rates were not reported. Not only has the pandemic resulted in people being isolated with potentially violent partners, it has also resulted in a decrease in resources that can help victims of abuse (UN Women, 2020). In addition to men and women in abusive relationships being more likely to be exposed to violence during a pandemic, children in the household are also more likely to be abused as parents are coping with the stress of job loss and school closures, which will be elaborated on next (Kumar, 2020).

Working from home, job loss, and the closure of day cares and schools, or the switch to virtual learning, results in both parents and children being home and together more often during the pandemic. Due to this, risk factors for child abuse could be on the rise since the pandemic began, whether that be emotional, psychological, or physical abuse (Lawson et al., 2020; Prime et al., 2020). A recent study from the United States found that parents who had lost their jobs due to the COVID-19 pandemic reported more depressive symptoms, having previously psychologically maltreated their children, and were also more likely to maltreat their children during the pandemic while in quarantine (Lawson et al., 2020). Families have also had minimal physical contact with child welfare agencies as social distancing policies prevent active intervention and thus, the only point of communication has been through online platforms with children and families. As a result of minimal home visits by child welfare agencies, it is likely that child maltreatment is actually even higher since the pandemic began, and, opportunities to notice, report or intervene have been greatly reduced (Barboza, et al., 2020; Rapoport et al., 2020).

## ***Cybercrime***

With the majority of routine tasks being moved remotely, not only are individuals spending more time at home, they are also spending more time online, whether that be working from home, online shopping, or online learning. The RAT can be used to explain cybercrime, as it meets each of the three conditions for crime to occur. First, the unemployment rate drastically increasing leading people to potentially become motivated to meet financial needs using criminal means, such as online fraud (which can easily be done from home). Second, the increase in potential victims who may be particularly vulnerable to exploitation on various internet platforms. Third, accountability is almost non-existent, as it is easier to cover the tracks of hacking and fraud on the internet, thus the guardian component becomes less intimidating or prevalent online. However, Hawdon and colleagues (2020) used participants from a database called Dynata that recruited panel members based on US census data to create a balanced representation and found that cybervictimization did not increase dramatically from pre- to post-pandemic. This could have been because participants reported using more virus-protected software post-pandemic or companies who began working remotely thought about cybercrime possibilities and took precautions. Furthermore, they collected pre-pandemic data from November 24<sup>th</sup> to 30<sup>th</sup>, 2019 and post-pandemic data from April 14<sup>th</sup> to 17<sup>th</sup>, 2020, which means they used extremely small margins for their data analyses and more in-depth research into this crime type is warranted before coming to any concrete conclusions.

## ***Financial Crime***

The Financial Action Task Force (FATF), an inter-governmental organization that sets global standards to prevent organized crime, corruption, and terrorism, has reported changes in risk factors for financial crime (i.e., phishing, cyberstalking, online harassment, and identity

theft) since the beginning of the COVID-19 pandemic. With government-assisted funding set up for those who have lost their jobs, it has become more challenging to detect corruption as many individuals have applied for and are receiving this funding whether or not they are eligible. This will require the use of government resources to detect and correct this error and may take resources away from other occurring forms of corruption (Rosen, 2020). As well, an increased use of online banking in response to limited in-person banking services during the pandemic weakens the ability to properly and thoroughly verify customers, which increases fraud risks (Rosen, 2020). Furthermore, with more businesses going online, it provides additional opportunities for scams that include selling people goods that never arrive or counterfeit items (HSBC, 2020). This includes emerging scams surrounding COVID-19, such as services claiming to clean ducts or air filters to protect against COVID-19, illegitimate loans to help with financial burdens of COVID-19, counterfeit medical supplies, and sales of COVID-19 testing kits, among other scams (FCSC, 2020). According to the RAT, it is likely this crime type has increased.

### ***Hate Crime***

While there may be an increase in opportunities to take advantage of vulnerable populations, a specific population at risk is those of East Asian descent. Canada is known for being a diverse and multicultural country, with the 2016 Census identifying over seven million Canadian residents (22.3%) as belonging to one or more visible minority group (Statistics Canada, 2017). Nonetheless, hate crimes involving race, ethnicity, age, and gender are still prevalent in Canadian culture. Although various definitions of hate crime exist, some common ones include hate crime being defined as “behavior that involves acts of violence and intimidation, usually directed towards already stigmatized and marginalized groups” (Perry,

2001, p. 10), as well as “Prejudice based on race, gender and gender identity, religion, disability, sexual orientation, or ethnicity” (Gover et al., 2020).

As the virus first originated in Wuhan, China, it creates the opportunity for hate against those of East Asian descent with tendencies of blame (Gover et al., 2020). While official 2020 hate crime statistics will not be released in the United States until 2021, it is expected to have increased as the COVID-19 pandemic has been blamed on the East Asian culture, with President Donald Trump even referring to it as the “China Virus” (Gover et al., 2020). In Canada, individuals of Asian and East Asian descent have reported others acting “strangely” toward them or avoiding them, which has been a reminder of what it was like during the SARS outbreak in 2003 or have been experiencing other microaggressions via social media (Bowden, 2020; Gover et al., 2020; Tessler et al., 2020; Waldner et al., 2021). In a survey from Statistics Canada that was sent out in June 2020 visible minority respondents perceived that hate crime had increased at a rate 18% higher than respondents who reported that they were not a visible minority (Statistics Canada, 2020a). In line with the RAT, it seems likely that the public will perceive hate crime as having increased from pre- to post-pandemic.

### ***Property Crime***

In addition to hate crime, the RAT can be used to explain property crime during the COVID-19 pandemic as well. As businesses close due to COVID-19, they are left vacant with fewer people around to witness crime, which results in an increased opportunity for property-related crime to occur (Felson et al., 2020). Crime data from Detroit, Michigan indicates that burglaries doubled from the beginning to the end of March 2020 (seemingly as more businesses closed; Felson et al., 2020). Looking at the crime data, they found that burglaries shifted away from residential areas (as people were now home more often at the end of March compared to

the beginning) to a mix between both residential and non-residential burglary (as businesses were left vacant), which is in line with RAT. Statistics Canada (2020b) noted decreases in reported incidents of various property crimes from March to June 2020 when compared to the same time the previous year including, shoplifting (46%), residential break and enters (22%), robberies (20%), and motor vehicle thefts (15%). This is in line with research from Felson et al. and the RAT. In addition, there was a 6% decrease in reported incidents of non-residential break and enters found, however this could simply mean that business owners were unaware of these break ins as many businesses were closed during these first few months of the pandemic (Statistics Canada, 2020b). Although the current study is not able to separate residential and non-residential crime, it hopefully sheds light on overall property-related crime.

### ***Sexual Crime***

Another important crime type to examine is sexual crime. Sexual misconduct is often committed by someone the victim knows, such as a friend, family member, or intimate partner (Kaszovitz, 2020). As stay-at-home restrictions continue, the Rape, Abuse & Incest National Network (RAINN) has reported an increase in minors calling to report abuse by a family member to the National Hotline for Sexual Assault (Kamenetz, 2020). Furthermore, due to increased time spent with possibly abusive family members, the ability to reach out for help becomes more complicated as children are not able to see friends, teachers, or co-workers. Thus, the true rates of sexual abuse may be underreported during the pandemic. As well, victims may not want to go to treatment centers, hospitals, or the police in fear of contracting COVID-19 and unfortunately, some facilities may not even be open during the pandemic (Kaszovitz, 2020).

In terms of workplace harassment, the increased use of online platforms for work-related tasks could potentially increase the likelihood to experience workplace sexual harassment, as

employees might feel more anonymous and protected behind a screen, as indicated by a six percent increase in harassment complaints in Australia from 2019 to 2020 (Hilton, 2020).

Statistics Canada (2020b) on the other hand, noted a 27% decrease in the reporting of sexual assaults comparing data from March to June 2020 and March to June 2019. Ultimately, it seems likely that sexual crimes might be perceived to have increased, as cases of sexual misconduct within the home are likely still occurring at a similar rate to before the pandemic, if not more, and it just might not be reported to police. The current research seeks to explore this more thoroughly.

### ***Traffic Crime***

Traffic-related criminal incidents can include driving while intoxicated (DWI), stunt driving, and driving with a suspended license or without a license. While changes in road traffic have become apparent since the pandemic began (i.e., less traffic on the road with more people working from home and more students engaging in remote learning), it is uncertain how these changes could affect traffic-related crime. Although less traffic on the road should presumably result in fewer accidents, it is possible that a decrease in one aspect of traffic-related crime could lead to an increase in other traffic-related crime, such as stunt driving (60% increase, Fitzpatrick, 2020; 200% increase, City of Toronto, 2020). While there is also more opportunity for speeding (35% increase, City of Toronto, 2020) with less road traffic (Vingilis et al., 2020). Rotermann (2020) stated that there was a concern for impaired driving in the early days of the COVID-19 pandemic; however, when they compared data from March to June 2020 to the same time in the previous year, police services in Canada reported 14% fewer incidents of impaired driving during the first few months of the pandemic. Traffic trends are ultimately unknown, and they may be changing over the duration of the pandemic.

### ***Violent Crime***

While there has been limited research to suggest whether COVID-19 has impacted the rate of violent crime within Ontario, Hodgkinson and Andresen (2020) did look at the emerging crime rates in Vancouver, British Columbia during the first 12 weeks of the COVID-19 pandemic and used data from the Vancouver Census Metropolitan Area (CMA). From 2008-2018, there was a drastic drop in violent crime in the City of Vancouver (29%; Hodgkinson & Andresen, 2020). However, from 2017-2018 a 4% increase in violent crime was noted (Hodgkinson & Andresen, 2020). While the City of Vancouver held the majority of COVID-19 cases in British Columbia temporal crime changes were noted within city as it has been most affected. However, when violent crime from March to May of 2020 was compared to previous control years, there were no significant changes found. These findings can be explained by the RAT where opportunities for crime had changed, such that crimes that occur change as well. Ultimately, violent crime in particular may be unchanged throughout the pandemic, although further empirical research for this type time is warranted before making any conclusions.

### ***Public Perceptions of Safety and Crime***

Although not a lot of research has been done examining Canadians' perceptions of safety and crime during the pandemic, Statistics Canada did conduct a survey that was released in June 2020 where respondents were asked to indicate whether or not they were satisfied with their personal well-being from crime. The survey was conducted using a crowdsourcing method rather than the standard probability-based sampling and found that half of respondents felt overall crime in their neighbourhood had remained the same, while 11% felt crime had increased, 15% felt it had decreased, and 24% did not know whether it had increased, decreased, or remained the same (Statistics Canada, 2020a). As well, Indigenous and visible minority respondents indicated

they felt crime had increased more than non-Indigenous and non-minority respondents. Thus, it seems likely that ethnicity and race play a role in public perceptions of crime during the pandemic.

In addition, when it comes to walking alone at night in their neighbourhood, female respondents (29%) reported feeling safe from crime less often than male respondents (49%) since the pandemic began (Statistics Canada, 2020a). While around half of respondents in the survey did not perceive overall crime to have changed significantly since the pandemic began, younger respondents did appear more likely to report an increase in crime and in particular, young women reported feeling that crime had increased, as well as race-based incidents within their neighbourhood. Given that the RAT suggests that some crime will increase during a pandemic, whereas other crime will decrease, it is important to examine public perceptions of specific crime types (rather than just overall crime) during the pandemic.

## **Mental Health**

### ***General Public***

In addition to changes in perceptions of safety during the pandemic, it is important to examine mental wellness during these unprecedented times as well. Social distancing and isolation from one's friends and family has led to less access to social supports, which results in increased loneliness and a decline in mental health (Iob et al., 2020). From May to June 2020 there was an increase in calls for service for welfare checks (12%) and mental health related calls such as a person in an emotional crisis (11%; Statistics Canada, 2020b). Additionally, three Canadian police services were able to provide data on calls for service on child welfare checks specifically and found an overall increase of 19% (Statistics Canada, 2020b). Similar to COVID-19, SARS came with a lot of unknowns, which evoked fear in the public. A study in Taiwan by

Ko et al (2006), found that individuals who were forced to quarantine or were suspected of having SARS symptoms experienced a higher degree of depression, lower levels of neighbourhood relationships, decreased self-perceived health, and were impacted by economic changes in comparison to those who were unaffected directly by the SARS virus. As well, Xiong et al. (2020) determined in a systematic review of literature in May 2020 that there were relatively high rates of anxiety, depression, PTSD, stress, and distress in the general population even when no quarantining was involved.

A further examination into the various stress-related changes, Nwachukwu et al. (2020) used the Perceived Stress Scale (PSS), Generalized Anxiety Disorder 7-item (GAD-7) Scale, and Patient Health Questionnaire-9 (PHQ-9) to measure levels of stress, anxiety, and depression in residents of Alberta. They found that reported stress was highest in individuals aged 25 years old or younger and lowest in those over 60 years of age. This indicates that students or young people in the workforce may be experiencing more stress-related anxieties due to the pandemic than middle-aged individuals and seniors. Similar findings on age were reported in the systematic review by Xiong et al. (2020) in China, Spain, Italy, Iran, the US, Turkey, Nepal, and Denmark. It is also interesting as older individuals seem to be at a greater risk of having more serious symptoms as a result of COVID-19 than younger individuals (Nwachukwu et al., 2020). This may show that it is not only important to protect seniors who are more at risk of developing serious symptoms of COVID-19 but, it is important to evaluate resources available to specific age groups (especially young adults) to help them cope with the unprecedented changes that come with a global pandemic. Further to this, students who were moved to remote learning during the pandemic also experienced higher rates of psychological symptoms and stress during the first few months of the pandemic than they had felt prior to the pandemic, as reported by

Charles et al. (2021) who compared data from Fall 2019 to Spring 2020. However, while there was a significant impact of on well-being and mental health during the first new months of the pandemic, these effects returned to pre-pandemic levels by Fall 2020.

Alternatively, a study conducted by Krendl and Perry (2021) examined well-being of older adults with a mean age of 74.68 years old from pre-pandemic (June to October 2019) to during the pandemic (April to May 2020). They used data from a study examining social relationships and well-being before the pandemic began and were able to contact the same participants to conduct a phone interview on well-being during the pandemic using the same scales. They found that mental health was adversely affected by the pandemic as greater depression and loneliness was experienced. While these findings show that older individuals may be experiencing negative impacts to the pandemic, this population was not compared to that of a younger population as such the study is unable to determine whether older adults actually experience more depressive and loneliness symptoms than younger individuals, which would be contradictory to findings mentioned above. In a five-year longitudinal study in Sweden stretching over 2020, data was collected from March 26 to April 2 and reported on four measures of well-being, Kivi et al (2021) found older adults actually reported their overall well-being as equally as high or higher than previous years. This finding follows similar trends to studies by Nwachukwu et al. (2020) and Xiong et al. (2020). However, the data collection for each of the studies is relatively early on in the pandemic, it will be interesting to examine the results from the first nine months of the pandemic in the current study.

A study by Martínez et al. (2020) examined individuals living in Colombia and compared their well-being from before the pandemic to a month and a half into the lockdown and a study by Charles et al. (2021) compared the well-being of college students in the US pre-pandemic to

the first few months of the pandemic. Martínez et al. found that many residents were concerned with how the government's protective measures were being implemented, financial consequences of COVID-19, how the lockdown would affect their academic performance, and both studies found residents were concerned with the health of their loved ones. However, the majority of respondents from both studies reported being satisfied with their life at the current moment.

**Alcohol.** As previously mentioned, trends in alcohol-related crime since the pandemic began were examined in this thesis. However, increased alcohol consumption may also negatively impact mental well-being. Specifically, the use of alcohol could become a coping mechanism for those with alcohol dependency and casual drinkers. It is important to think about how the LCBO being an “essential service” can impact the use of alcohol under these circumstances and that in turn impacts mental health. A study by Jacob et al. (2021) found that one in six young adults from the United Kingdom reported an increase in alcohol consumption from before to during the pandemic. Furthermore, that increase was associated with a decrease in overall mental health and mental well-being, including more depressive symptoms. Similar results were found regarding increased alcohol misuse for college students in the United States (Charles et al., 2021). Alternatively, Schmits and Glowacz (2021) found that in the general population an increase in alcohol consumption and decrease in mental well-being was reported for older individuals often working from home, who had children, and who were highly educated. Similarly, for those who have children, some associated behaviours to dealing with natural disasters often involves substance use as the increased demand on parental resources can vastly reduce an individual's capacity to positively cope (Prime et al., 2020).

**Drugs.** Furthermore, the stressors that come with COVID-19 might push someone who is at-risk of a substance use disorder to actively engage in drug use (Dubey et al., 2020). Not only are SUDs a major mental health concern but rehabilitation services may potentially be unavailable with the stay-at-home orders causing housing instability for these individuals, this might increase the likelihood of homelessness without proper protection (hand sanitizer, regular hand washing, or masks; Dubey et al., 2020). Along the same lines, there are various other risk factors that may link drugs and COVID-19 for not just mental health-related issues, but for physical health-related issues as well. Specifically, those who smoke or vape regularly (i.e., cigarettes, cannabis, or other substances) are more likely to have respiratory symptoms and compromised immune function, which makes these individuals more at-risk of getting severely sick from COVID-19 (López-Pelayo et al., 2020). Furthermore, individuals who use methamphetamines and other illicit substances are more likely to experience pulmonary hypertension, which can also be a risk factor for COVID-19 (López-Pelayo et al., 2020; Dubey et al., 2020). As well, the drug use can involve behavior that puts substance abusers more at risk, including the sharing of cigarettes and needles (López-Pelayo et al., 2020). During this time, it might be important to consider having more safe injection sites in order to prevent individuals from exhibiting at-risk behaviors and sharing supplies in order to get their substances.

### ***Health Care Workers***

As previously mentioned, the pandemic has resulted in the potential overwhelming of the health care system. It is also increasingly important to assess those working within the health care system. In particular, health care workers may be particularly vulnerable to decreased mental health during the pandemic in comparison to the general public due to their highly stressful job. Such that, it is important to acknowledge this group of essential workers when

explaining the impact of the COVID-19 pandemic on well-being and stress. Greenberg et al. (2020) noted guidelines that were released by a group of mental health professionals. These guidelines were developed specifically for health care workers when dealing with associated pandemic stressors while already performing stressful jobs. Greenberg et al. explained in the analysis that health care workers are at an increased chance of suffering from moral injury, which they define as a type of psychological stress that originates from actions that may breach an individual's morals. Given that a global pandemic is a crisis that is difficult to prepare yourself for, the risk of moral injury is increased as research shows those working in the health care system are more likely to experience moral injury when they are exposed to unexpected situations (i.e., a worldwide pandemic). Most importantly, managers of health care workers have been encouraged to be proactive to protect the mental well-being of their staff as well as be up front and transparent about the situations that they are likely going to face. This in turn will allow health care workers to be more prepared and lessen their risk of moral injury and in turn protect their mental health.

Stelnicki et al. (2020) developed a survey in collaboration with the Canadian Federation of Nurses Union (CFNU) and distributed it to nurses in China between February and March to determine occupational stressors experienced by working the front-lines during the pandemic. These results allowed for preliminary results to suggest trends that may occur with Canadian healthcare workers. They found clinically significant levels of anxiety (14.5%), depression (8.9%), and PTSD (7.7%; Stelnicki et al., 2020). Ultimately, it was determined that the psychological stress of health care workers must be evaluated, and resources must be implemented for these individuals in order for them to be able to successfully deliver patient

care. It has also been suggested to implement more mental health training and introduce more debriefing sessions post-response to emergent situations involving COVID-19.

Delgado et al. (2020) collected data from healthcare workers in Latin America from March 31<sup>st</sup> to April 4<sup>th</sup> to determine whether they had the proper PPE to perform their jobs safely during the pandemic. They found that while the majority of workers did have access to basic PPE, there was a large portion of respondents who did not have access to items such as N95 masks and only 32.6% had access to protective face shields. Not having access to proper PPE or having limited PPE is likely to lead to a decrease well-being or increased job stress as this makes a worker more vulnerable to contracting COVID-19.

### **Current Study**

The current thesis examined public perceptions of well-being, safety, and crime in Ontario since the COVID-19 pandemic began in mid-March 2020 to mid-December 2020 (i.e., the first nine months of the pandemic). This timeline was chosen to create consistency and I wanted to be able to control for the lockdown that was put into place as this survey was being sent out (January 2021). More specifically, this thesis examined how and if the public felt that the rates of general and specific crime types had shifted in various regions of Ontario in the first nine months of the pandemic, the perceptions of how safe they felt in their communities during that timeframe, and the impact that COVID-19 had on the stress and well-being experienced by both the public and essential workers. This study examined stress and well-being, as it could be a predicting factor in whether participants feelings of crime had changed during the pandemic. Such that, if they are highly stressed or depressed, this could impact their idea of crime in their community.

This thesis helps researchers and the public put into perspective the impact that COVID-19 has had on crime, as well as the well-being and stress of both the public and essential workers. Furthermore, this research can provide valuable insight into how social services should prioritize their resources during the pandemic and its aftermath. Similarly, it will allow services to be aware of how future pandemic outbreaks could affect the public in terms of perceptions of safety. As well, provide a better understanding of factors contributing to stress and burnout during the pandemic. This thesis is largely exploratory in nature, as there has been limited empirical research examining public perceptions of safety, well-being, and stress during the pandemic, as well as changes in crime rates, with existing research being conducted much earlier on in the pandemic.

### **Hypotheses**

With the Routine Activity Theory in mind, along with the limited research available at this time, my hypotheses can be found in Table 1. This table is a breakdown of which hypothesis is being referred to (numerically), the variable involved, and whether that crime type was predicted as being perceived by the public to have increased, decreased, remained the same, or is unknown.

**Table 1***Breakdown of Hypotheses*

Hypothesis	Variable	Predicted public perceptions of change in first nine months of COVID-19 Pandemic
1	Violent crime	No change
2	Property crime	Increase
	Child Abuse, Domestic Violence, Cybercrime, Financial, Sexual crime	Increase
	Traffic-related crime	Unknown
3	Alcohol, Drug-related	Increase
4	Hate crime	Increase
5	Crime changes	Unknown
6	Personal safety from crime and well-being	Decrease
7	Personal safety from crime and minority groups	Decrease
8	Stress in general	Increase
	Stress for essential workers	

To briefly expand on hypotheses 4, 5, 6, 7, and 8 in Table 1, hypothesis 4 predicts individuals of East Asian descent specifically to perceive hate crime to increase more than non-East Asian respondents during the pandemic. Hypothesis 5 predicts that public perceptions of crime change during the pandemic will be predicted by a variety of factors including, age, gender, minority status, essential worker status, stress, and well-being. Hypothesis 6 predicts that the public will perceive satisfaction with personal safety from crime and mental well-being to decrease during the pandemic and that the decrease will be significantly higher in women and essential workers than it will be in men and non-essential workers. Hypothesis 7 predicts that female minority participants will perceive satisfaction of personal safety from crime as having decreased more during the pandemic than men and non-minority respondents. Lastly, hypothesis 8 predicts that perceived stress in general will increase from before to during the pandemic and

that during the pandemic that increase will be higher for essential workers than non-essential workers.

## Method

### Sample

The sample was recruited by Qualtrics using an online participant pool, with participants being compensated for their participation. As requested by the researcher, an attempt was made by Qualtrics to recruit a sample that approximated the breakdown for gender, age bracket, and ethnicity for adults living in Ontario based on 2016 Census data (Statistics Canada, 2019), with the final sample matching the breakdown for gender in Ontario almost exactly with other matches being approximate. A total of 747 participants either completed or partially completed the survey. However, due to eligibility criteria,<sup>1</sup> attention check questions, dropout, and insufficient answers,<sup>2</sup> the study consisted of a final sample of 258 participants. The sample included female (50.8%;  $n = 131$ ), male (47.7%;  $n = 123$ ), and non-binary (1.2%;  $n = 3$ ) participants who resided primarily in Central East Ontario (35%;  $n = 90$ ), followed by Central West Ontario (26.7%;  $n = 69$ ), Western Ontario (22.1%;  $n = 56$ ), Eastern Ontario (13.2%;  $n = 34$ ), then Northern Ontario (3.1%;  $n = 8$ ).<sup>3</sup> Ages ranged from 18 to 83 ( $M = 49.04$ ;  $SD = 16.03$ ) years old. Participants indicated they belonged to one of the following ethnic groups: Caucasian (38.5%;  $n = 100$ ), European (24.5%;  $n = 63$ ), East Asian (14%;  $n = 36$ ), South Asian (7.4%;  $n =$

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<sup>1</sup> This included being an Ontario resident, 18 years or older, and fluent in English, as well as approximating the breakdown for gender, age, and ethnicity in Ontario based on 2016 Census data.

<sup>2</sup> Qualtrics only provided data for the final sample and as such, I was unable to determine the dropout rate or how many participants failed the attention check questions.

<sup>3</sup> The survey described the various geographic regions as: Northern Ontario (i.e., Kenora, Rainy River, Thunder Bay, Cochrane, Algoma, Sudbury, Timiskaming, Manitoulin, Parry Sound, and Nipissing), Western Ontario (i.e., Essex, Chatham-Kent, Lambton, Middlesex, Elgin, Huron, Perth, Oxford, Norfolk, Haldimand, Brant, Waterloo, Bruce, Grey, Wellington, Halton, Hamilton, and Niagara), Central West Ontario (i.e., Dufferin, Simcoe, Peel, and York), Central Eastern Ontario (i.e., Durham and Toronto), Eastern Ontario (i.e., Muskoka, Kawartha Lakes, Haliburton, Peterborough, Northumberland, Hastings, Prince Edward, Lennox and Addington, Frontenac, Renfrew, Lanark, Leeds and Grenville, Ottawa, Stormont, Dundas and Glengarry, Prescott and Russell).

19), Caribbean (4.7%;  $n = 12$ ), Other (3.1%;  $n = 8$ ), Southeast Asian (2.7%;  $n = 7$ ), Arab (1.9%;  $n = 5$ ), Sub-Saharan African (1.2%;  $n = 3$ ), Central Asian (0.8%;  $n = 2$ ), Indigenous (0.4%;  $n = 1$ ), Latin American (0.4%;  $n = 1$ ), and North African (0.4%;  $n = 1$ ). Furthermore, the majority of participants had either a university degree (30.4%;  $n = 78$ ) or college diploma (20.5%;  $n = 53$ ).

The sample included 86 participants (33.3%) who identified as working essential jobs during the pandemic. Of those participants, two were first responders (2.3%), 14 were health care workers (16.3%), food or customer service workers (31.4.1%;  $n = 27$ ), public transportation workers (7.0%;  $n = 6$ ), Infrastructure workers (11.6%;  $n = 10$ ), Education (5.8%;  $n = 5$ ), Human Services (7.0%;  $n = 6$ ), and other (18.6%;  $n = 16$ ). There were also another 78 participants (30.2%) who indicated they had family members who worked as essential workers at some point throughout the first nine months of the COVID-19 pandemic. Furthermore, approximately 25.2% ( $n = 65$ ) of the sample was laid off at some point during the first nine months of the pandemic. There was an effort made to match the public sample to the general Ontario population based on certain demographics, specifically, gender, age, and ethnicity.

## **Procedure**

This study received approval from the Ontario Tech University Research Ethics Board (see Appendix A). Qualtrics was used to host the online survey and recruit participants based on specific eligibility criteria (i.e., Ontario resident, 18 years or older, and fluent in English), with individuals being paid for their participation. Upon clicking the survey link, participants were asked to read and click “I consent” on the informed consent form (Appendix B) that provided them with essential details about the study and their participation (e.g., the purpose of the study, benefits and risks of participating). Participants who consented were taken to the demographics section (Appendix C), whereas those who did not consent were excluded from completing the

survey. The demographics section included questions about the area in Ontario in which they reside, their gender, age, ethnicity, education level, political affiliation, salary, work situation during the pandemic, and a few questions regarding COVID-19. Participants were then sent to the next appropriate section of the survey based on their responses in the demographics section.

More specifically, all participants completed the perceptions of crime and community safety scale (Appendix D), Attitudes towards Police in Canada scale (Appendix E), Perceived Stress Scale (PSS; Appendix F), and General Well-being Schedule (GWS; Appendix G). Those who indicated they were working at any point during the first nine months of the pandemic (either in person or from home) completed the Brief Job Stress Questionnaire (BJSQ; Appendix H) as well. Although part 1 of the BJSQ concerning an individual's job consisted of 9 subscales, only the two subscales most relevant to this thesis were used in the analyses, Quantitative Job Overload and Poor Work Environment, which will be discussed in more detail in a subsequent section. Participants were also presented with various open-ended and attention check questions throughout the survey. Finally, participants were provided with the debriefing form once they completed the survey; this debriefing reiterated the purpose of the study and outlined who to contact if participants had further questions regarding the survey or study in general (Appendix I). Participants took on average approximately 35 minutes to complete the survey ( $SD = 46.64$ ). The various measures will be discussed in more detail in the next section.

After online data collection was completed by Qualtrics, the data was cleaned and prepared for analysis. Mixed factor ANOVAs were conducted to compare the mean differences from pre- to post-pandemic, as well as the mean differences between the general public and essential workers. Enter method Regression analyses were also conducted to identify which variables significantly predicted job stress and well-being among respondents. Given that this

study was largely exploratory in nature, additional analyses were also conducted in order to more thoroughly examine the data.

## **Measures**

### ***Perception of Crime Rates and Community Safety Scale***

Participants were asked to indicate whether they perceived overall crime to have changed during the first nine months of the COVID-19 pandemic using a 5-point Likert scale from 1 (decreased a lot) to 5 (increased a lot). As shown in Appendix D, they were then given a list of 13 specific crime types and asked to rate their perceptions of how each crime type had changed in frequency since the pandemic began using the same 5-point Likert scale that was mentioned above. Participants were also asked questions regarding their personal experience with crime since the pandemic began.

The second part of this section of the survey focused on community safety. Specifically, participants were asked questions regarding their perceptions of safety in their own communities. For example, participants were asked to rate their satisfaction with their personal safety before the pandemic began, as well as during the first nine months of the pandemic. Participants responded to these two questions on a scale from 1 (very dissatisfied) to 5 (very satisfied). Participants were also asked questions about how safe they felt walking alone at night before and during the first nine months of the pandemic, as well as perceptions of crime in their neighbourhood. The questions in this section were rated on various scales, which can be found in Appendix D.

Table 2 displays a breakdown of which specific crimes were categorized under each crime types, this categorization was given to participants in the survey so that they could

determine whether they perceived the crimes under that crime category to have changed since the pandemic began.

**Table 2**

*Breakdown of Crimes that Could Fall Under Each Crime Type Category*

Crime type	Definitions for each crime type
Alcohol-related crime	Open container violation, public intoxication, minor possession, boating and underage DUIs, selling and supplying to minors, refusing sobriety test or breathalyzer.
Drug-related crime	Taken, bought, or sold illegally for non-medical reasons, possession, manufacturing.
Child abuse	Physical, emotional, or sexual maltreatment of a child.
Domestic abuse	Controlling, coercive, or threatening behaviour, violence, and/or verbal abuse between intimate partners.
Cybercrime	Phishing, cyberstalking, harassment online, identity theft, etc.
Financial crime	Fraud, blackmail, embezzlement, money laundering, tax evasion.
Hate crime	Hate speech, violent or non-violent crime motivated by ethnicity, skin colour, sexuality, gender, language, or age.
Violence crime	Crimes committed against strangers, or non-intimate individuals such as, aggravated assault, murder, manslaughter, kidnapping, forcible confinement, etc.
Property crime	Trespassing, auto theft, burglary, robbery, larceny, shoplifting, arson.
Sexual crime	Pornography, public indecency, misconduct, rape.
Traffic-related crime	Driving While Impaired (DWIs), accidents, driving with suspended or no license.
Trafficking	Illegally transporting people or drugs from one country or area to another for the purpose of forced labour [human trafficking], sexual exploitation [sex trafficking], or to sell [drug trafficking].

***Attitudes Towards Police in Canada Scale***

This scale was recently revised by Giacomantonio et al. (2019) and included 27 statements that assessed the public's attitudes towards police in their local communities, as perceptions towards police might affect the public's feelings of community safety. Some example items are: "The police treat people fairly" and "The police respect people's rights."

Participants had to rate the extent to which they agreed with each statement on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). This scale then asked participants to indicate their satisfaction level with their local police and ended with an open-ended question about participants' experience with police in their area during the first nine months of the pandemic; this question was added by the researcher and was not a part of the original scale. The survey items and response options can be found in Appendix E.

### ***Perceived Stress Scale (PSS)***

The Perceived Stress Scale (PSS) is a classic stress assessment instrument that was originally developed in 1983 to help understand how different situations affect our feelings and perceived stress (Cohen, 1983). Questions on the PSS asked participants to indicate how often they have felt a certain way during a certain time period. For this study, the questions were altered slightly from asking "In the past month" to "Compared to before the pandemic started," with a focus on the first nine months of the pandemic specifically. This instrument included 10 questions that were assessed on a scale from 0 (a lot less often) to 4 (a lot more often), with higher scores indicating higher perceived stress. An example of a question was "Since the onset of the COVID-19 pandemic, how often have you been upset because of something that happened unexpectedly?" This section concluded by asking participants to rate their overall stress before the pandemic began and during the first nine months of the pandemic, as well as their stress about potentially being exposed to the COVID-19 virus (see Appendix F).

### ***General Well-Being Schedule (GWB)***

The General Well-Being Schedule (GWB) is a brief assessment of psychological well-being, including mental health and overall quality of life. It is predominantly used in population studies and was developed by Dupuy (1977). More specifically, the GWB consists of 18 items

that assess anxiety, depression, positive well-being, self-control, vitality, and general health. This section of the survey asked participants how they felt and how things were going with them during the first nine months of the COVID-19 pandemic. The first 14 questions were rated on six-point Likert scales, while the last four questions were rated on a scale from 0 to 10 with various adjectives (see Appendix G). Some examples of questions from the GWB are: “Have you been bothered by nervousness or your ‘nerves’?”, “Have you been waking up fresh and rested?”, and “How concerned or worried about your health have you been?” This section concluded by asking two questions regarding participants’ overall well-being. Low total scores on the GWB represent greater distress, with three cut-off points determining general well-being. Those who score 60 or under are defined as being severely distressed, those who score between 61 and 72 are defined as being moderately distressed, and those scoring between 73 and 110 have an overall positive well-being.

### ***The Brief Job Stress Questionnaire (BJSQ)***

The Short Version of the Brief Job Stress Questionnaire (BJSQ) is an assessment concerning one’s job and the impact it may have on their overall stress levels (Inque, 2014). Considering a lot of Canadians have been working from home or in essential jobs at some point since the pandemic began, job stress could be at an increased level. Participants who indicated in the demographics section of the survey that they were working at some point during the first nine months of the pandemic, whether that be part-time, full-time, from home, etc., were the only ones presented with this scale. The BJSQ asked respondents to select the response option that best fit their situation concerning their job during the first nine months of the pandemic. The questionnaire originally included 57 items, but I reduced it to 46 items and 6 additional questions of my own were added to focus on items more relevant to COVID-19.

The first 17 questions of the BJSQ were rated on a scale ranging from 1 (not at all) to 4 (very much so) and focused specifically on the respondent's job (e.g., "I can't complete work in the required time."). Questions 18-46 were rated on a 4-point Likert scale from 1 (almost never) to 4 (almost always) and focused on the health of the respondent (e.g., "I have been very active."). Questions 47-52 were created by the researcher, where 47 and 48 asked about changes to physical and mental well-being of the participant during the first nine months of the pandemic and were rated on a 5-point scale from 1 (decreased a lot) to 4 (increased a lot). Questions 49 and 50 concerned job and family life satisfaction and were rated on a 4-point scale from 1 (dissatisfied) to 4 (satisfied). Finally, the last two questions (51 and 52) asked participants about personal protective equipment (PPE) and were rated on a scale from 1 (strongly disagree) to 5 (strongly agree), with an option to select 0 (not applicable).

As previously mentioned, the BJSQ consists of 9 subscales in total concerning an individual's job. However, the current study focused specifically on two subscales – quantitative job overload (questions 1-3) and poor work environment (question 15). These subscales were chosen as they are the most relevant to the topic of COVID-19 and working from home or being an essential worker. Specifically quantitative job overload has to do with having too much work to do in the allotted time which can be problematic with demanding occupations and this issue could be exacerbated during COVID-related work conditions and poor work environment has to do with the condition of the physical work space (e.g., noise, lighting, temperature, ventilation, etc.) which are greatly impacted when it comes to COVID-19 due to working from home or in crowded office spaces with poor ventilation and greater risk of contracting the airborne virus. The full list of questions, response option scales, and subscales for the BJSQ can be found in Appendix H.

### *Attention Check Questions*

There were six attention check questions embedded throughout the survey (see Appendix J) in order to screen out participants who may have been experiencing fatigue effects, may not have been reading through the questions thoroughly, just answering randomly, and to ensure the quality of the data. Each attention check question had an obvious answer, where participants were asked to select a specific response from the response options. Participants who answered more than two of the attention check questions incorrectly were excluded from the study, which means their data was not used in any of the analyses. The sample reported for this study ( $N = 258$ ) excludes participants who failed the attention check questions (i.e., answered two or more questions incorrectly out of six). Qualtrics only provided the final sample of participants who answered at least four attention check questions correctly, which means that the number of participants who failed them is unknown.

## **Results**

### **Crime Changes by Crime Type**

Table 4 demonstrates a visual display of each of the frequencies reported for each specific crime type of whether respondents perceived that crime type as having decreased a lot, decreased slightly, remained the same, increased slightly, or increased a lot. Further to this, it demonstrates whether each hypothesis was met based on the perceptions of the crime change.

**Table 3**

*Summary of Frequencies for Perceptions of Crime Changes by Specific Crime Types*

Crime type	Decreased a lot		Decreased slightly		Remained the same		Increased slightly		Increased a lot		Hypothesis
	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	
Alcohol-related	5.8	15	12.8	33	45	116	29.5	73	7	18	Not supported
Child abuse	2.7	7	7.4	19	41.9	107	35.3	89	12.8	32	Supported

Cybercrime	2	5	5.9	15	42.1	87	36.2	92	21.7	55	Supported
Domestic abuse	2.8	7	4.7	12	28.7	73	44.6	113	19	48	Supported
Drug-related	2.4	6	5.1	13	35.3	90	40.4	102	16.3	42	Supported
Financial crime	1.9	5	4.7	12	44.6	114	32.9	84	15.9	39	Supported
Hate crime	1.9	5	5.8	15	39.1	100	38.8	98	14.3	36	Supported
Property crime	3.5	9	18.6	46	43.4	111	25.2	64	9.3	24	Not supported
Sexual crime	3.9	10	10.6	27	54.7	139	23.2	59	7.1	18	Not supported
Traffic-related	8.3	21	19.7	50	45	114	20.5	52	6.7	17	N/A
Trafficking	6.3	16	9.8	25	57.4	146	19.7	50	6.7	17	N/A
Violent crime	3.9	10	14.3	36	46.9	119	26.4	67	8.7	22	Supported
Overall crime	5	13	21.7	56	45	116	19.8	51	8.5	22	Not supported

### ***Hate Crime***

Given that past literature had suggested that there has been an increase in the occurrence of hate crime against individuals of East Asian descent due to the COVID-19 pandemic originating in Wuhan, China, I felt it was important to look into this possibility within this study. As such, an independent-samples *t*-test was run to determine if there was a significant difference in public perceptions of change in hate crime during the pandemic when comparing East Asian ( $n = 35$ ) and non-East Asian participants ( $n = 219$ ). Perceptions of hate crime for the two groups were not normally distributed, as assessed by both the Kolmogorov-Smirnov (for the East Asian group) and the Shapiro-Wilk (for the non-East Asian group) tests of normality. However, *t*-tests are fairly robust to violations of normality and as such, it was decided this would likely not be overly problematic for the current analysis. The analysis revealed that perceived change in hate crime during the first nine months of the pandemic was not significantly higher for East Asian ( $M = 3.80$ ,  $SD = .868$ ) than for non-East Asian participants ( $M = 3.59$ ,  $SD = .810$ ),  $t(252) =$

1.417,  $p = .158$ , with a mean difference of .211 ( $d = .25$ ), 95% CI [-.082, .504], being found.<sup>4</sup> It was hypothesized that individuals of East Asian descent would indicate hate crime as having increased since the pandemic began, to a higher degree than participants who did not indicate they were of East Asian descent, the above findings did not support this hypothesis.

### **Perceptions of Crime Changes**

A standard multiple regression was run to predict public perceptions of crime change in general during the first nine months of the pandemic from the following predictor variables, age, gender, minority status, essential worker status, perceived stress, and general well-being.<sup>5</sup> The data was assessed to ensure all assumptions were met prior to running the analysis and no violations were detected. The multiple regression model was not significant,  $F(6, 243) = .207$ ,  $p = .975$ , with none of the six predictor variables significantly predicting public perceptions of overall change in crime, all  $ps > .05$ . The hypothesis that public perceptions of overall crime change from before the pandemic to nine months into the pandemic would be predicted by age, gender, minority status, essential worker status, stress, and well-being was not supported.

### **Public Perceptions of Personal Safety**

A three-way mixed ANOVA was run to examine the effects of gender and being an essential worker on perceptions of satisfaction with personal safety from crime prior to and during the first nine months of the COVID-19 pandemic. In terms of assumptions, satisfaction with personal safety was not normally distributed, as assessed by Kolmogorov-Smirnov ( $p > .05$ ). However, due to the equal sample sizes and robustness of the ANOVA to violations of

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<sup>4</sup> An independent-samples  $t$ -test was also run comparing East Asian ( $n = 36$ ) to white participants ( $n = 112$ ) in order to determine whether the inclusion of other minority groups in the non-East Asian group may have factored into the non-significant findings. No significance was found between the East Asian ( $M = 3.72$ ,  $SD = .974$ ) and white groups ( $M = 3.57$ ,  $SD = .744$ ),  $t(146) = .978$ ,  $p = .07$ .

<sup>5</sup> As a reminder, all regression analyses in this thesis were run using the enter method.

normality, this violation was not considered to be overly problematic. Homogeneity of variance for satisfaction with personal safety prior to and during the pandemic was also found to be violated, as assessed by Levene's test for equality of variance ( $p < .05$ ). However, the mixed ANOVA is somewhat robust to violations of homogeneity of variance when sample sizes are somewhat equal.

The three-way interaction between time (i.e., from before to during the first nine months of the pandemic), gender, and essential worker status was not statistically significant,  $F(1, 250) = .609, p = .44$ , partial  $\eta^2 = .002$ . In addition, all two-way interactions were not statistically significant ( $ps > .05$ ). It was hypothesized that public perceptions of satisfaction with personal safety from crime would decrease after the beginning of the pandemic. Specifically, it was hypothesized that this decrease would be greater for women and essential workers than it would be for men and non-essential workers. This hypothesis was not supported.

A second mixed ANOVA was run to examine the effects of gender and minority status on satisfaction with personal safety prior to and during the first nine months of the COVID-19 pandemic. Satisfaction with personal safety was not normally distributed, as assessed by Kolmogorov-Smirnov ( $p > .05$ ). However, due to the relatively equal sample sizes and ANOVAs being relatively robust to violations of normality, it was decided that the analysis could proceed as planned.

A statistically significant three-way interaction was found between time (i.e., before to during the first nine months of the pandemic), gender, and minority status,  $F(1, 250) = 4.784, p = .030$ , partial  $\eta^2 = .019$ . However, there were no statistically significant two-way interactions between time and gender ( $p = .67$ ) or minority status ( $p = .36$ ). In relation to the follow-up analyses for the significant three-way interaction, statistical significance was accepted at a

Bonferroni-adjusted alpha level of .025. A statistically significant simple two-way interaction was found between gender and minority status during the first nine months of the pandemic,  $F(1, 250) = 8.103, p = .005$ , but not prior to the pandemic,  $F(1, 250) = 2.503, p = .115$ . There was also a statistically significant simple main effect of minority status for females during the pandemic,  $F(1, 250) = 10.452, p = .001$ , but not for males,  $F(1, 250) = .711, p = .400$ .

All pairwise comparisons were performed for statistically significant simple main effects. Adjusted  $p$ -values are reported. Ultimately, satisfaction with personal safety was lower in female minorities during the first nine months of the pandemic ( $M = 3.33, SD = 1.007$ ) than male minorities during the same timeframe ( $M = 3.71, SD = .777$ ), with a mean difference of .514 ( $d = .42$ ), 95% CI [.201, .827],  $p = .001$ . It was hypothesized that satisfaction with personal safety from crime would decrease more for female and ethnic minority participants than it would for male and non-minority participants. This hypothesis was supported. Means and standard deviations are presented in Table 3 for all groups.

**Table 4**

*Display of Means and Standard Deviation Scores for Gender and Minority Status*

Dependent	Minority status	Gender	$M$	$SD$	$d$
Satisfaction with personal safety <b>prior</b> to the pandemic	Non-minority	Male	3.69	.787	.10
		Female	3.78	1.00	
	Minority	Male	3.74	.731	.30
		Female	3.49	.888	
Satisfaction with personal safety <b>during</b> the first nine months of the pandemic	Non-minority	Male	3.57	.878	.30
		Female	3.85	.943	
	Minority	Male	3.71*	.777	.42
		Female	3.33*	1.00	

*\*Indicates significance of  $p < .05$ .*

## Well-Being

A mixed ANOVA was run to examine the effects of gender and essential worker status on self-reported satisfaction of overall well-being from before to during the first nine months of the COVID-19 pandemic. Well-being scores were found to violate the assumption of normality, as assessed by Kolmogorov-Smirnov test ( $p > .05$ ). As previously mentioned, ANOVAs are considered to be fairly robust to deviations from normality and given the large sample size ( $N = 253$ ), this violation was not considered to be overly problematic. There was homogeneity of variance for overall satisfaction of well-being during the first nine months of the pandemic ( $p = .450$ ), but not prior to the pandemic ( $p = .008$ ), as assessed by Levene's test for equality of variances. Nonetheless, because the sample sizes for before and during the pandemic were equal, the mixed ANOVA should be fairly robust to this violation.

The three-way interaction between time (i.e., before to during the first nine months of the pandemic), gender, and essential worker status was not statistically significant,  $F(1, 249) = .389$ ,  $p = .534$ , partial  $\eta^2 = .002$ . In addition, all two-way interactions were not statistically significant ( $ps > .05$ ). It was hypothesized that well-being scores would be higher for women and essential workers than men and non-essential workers during the first nine months of the pandemic, but this hypothesis was not supported. The General Well-Being Schedule also had a moderate to high level of internal consistency in the current sample, as determined by a Cronbach's alpha of 0.605.

To further examine general well-being in the current study, a multiple regression was run to predict general well-being from age, gender, ethnicity, perceived stress, and essential worker status. Examination of the assumptions for a multiple linear regression analysis revealed one studentized deleted residual greater than  $\pm 3$  standard deviations, but no leverage values greater

than 0.2 and no values for Cook's distance above 1. All other assumptions were met. The multiple regression model predicting general well-being from age, gender, ethnicity, perceived stress, and essential worker status was found to be statistically significant,  $F(5, 244) = 4.853, p < .001$ , adj.  $R^2 = .072$ . Perceived stress and age were both significant predictors in the model,  $p = .007$  and  $.000$ , respectively. Furthermore, age ( $\beta = -.24$ ) was a stronger predictor than perceived stress ( $\beta = .17$ ), as indicated by the standardized coefficients. All other predictors in the model were non-significant ( $ps > .05$ ).

In terms of age as a predictor of general well-being, it was found that an increase in age of one year was associated with a decrease in general well-being score of .079 points. This indicates that being older is associated with a more positive overall well-being during the first nine months of the pandemic.<sup>6</sup> On the other hand, a one-point increase in perceived stress score was associated with an increase in general well-being score of .156 points. This indicates that individuals who were more stressed during the first nine months of the COVID-19 pandemic, as assessed by the Perceived Stress Scale, were also more likely to be distressed in terms of their well-being, as assessed by the General Well-Being Schedule.

### **Perceived Stress**

A paired samples  $t$ -test was conducted to determine whether there was a statistically significant difference in overall perceived stress scores from before to during the first nine months of the COVID-19 pandemic. The data was not normally distributed at each time point, as assessed by the Kolmogorov-Smirnov test of normality ( $p < .05$ ). Paired samples  $t$ -tests are robust to violations of normality with respect to Type 1 error, such that this is not problematic. The COVID-19 pandemic did elicit statistically significant mean increase in overall perceived

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<sup>6</sup> Note that high scores on the General Well-being Schedule indicate more severe distress, while lower scores indicate more positive overall well-being.

stress over time of .354, CI 95% [.249, .459],  $t(256) = 6.646$ ,  $p < .001$ ,  $d = .854$  with stress increasing from before the pandemic ( $M = 2.77$ ,  $SD = .97$ ) to during the first nine months into the pandemic ( $M = 3.12$ ,  $SD = 1.03$ ). The Perceived Stress Scale also had a high level of internal consistency in the current sample, as determined by a Cronbach's alpha of 0.831.

As previously mentioned, the sample consisted of 85 essential workers and 166 non-essential workers. An independent samples  $t$ -test was run to determine if there were differences in perceived stress scores between essential workers and non-essential workers during the first nine months of the pandemic. There were found to be a number of outliers, both non-extreme and extreme, as assessed by inspection of a boxplot. While the non-extreme outliers did not seem particularly problematic, the five extreme outliers were more concerning. After closer inspection of the extreme outlier values, I decided that it was important to remove them for this particular analysis, as it was genuinely unusual for an essential worker to report a score of 2 for perceived stress when every other essential worker scored at least a 10 or more. Similarly, perceived stress scores of 37, 39, 39, and 40 were also considered unusual for non-essential workers, as the next highest score (that was also considered an outlier but was not extreme in nature) was a 33. As such, it was determined that it would be appropriate to remove the five extreme outliers for this particular analysis. Normality was assessed after the removal of the five extreme outliers using the Kolmogorov-Smirnov test of normality. It was determined that normality was violated ( $p < .05$ ). However, both sample sizes were rather large ( $n$ s of 85 and 166), and the independent samples  $t$ -test is fairly robust to violations of normality. All other assumptions were met.

The independent samples  $t$ -test revealed that there was a statistically significant difference in perceived stress scores between essential workers and non-essential workers,  $t(249) = 1.974$ ,  $p = .050$ ,  $d = 0.26$ , with essential workers scoring higher ( $M = 22.81$ ,  $SD = 5.72$ ) than

non-essential workers ( $M = 21.46$ ,  $SD = 4.8$ ) during the first nine months of the pandemic, with a mean difference of 1.35, 95% CI [0.003, 2.705]. This finding is in line with the hypothesis that stress would be higher during the first nine months of the pandemic for essential workers compared to non-essential workers.

While it was determined that perceived stress during the first nine months of the pandemic was higher for essential workers than non-essential workers, I wanted to follow up on this by examining whether there were differences in perceived stress across particular essential job categories. The current study included three broad categorizations of essential jobs: (1) healthcare/first responders, (2) food/customer service/public transportation workers, and (3) an ‘other’ category that included occupations such as education, human and personal services, etc. A two-way repeated measures ANOVA was run to examine whether stress from before the pandemic to during the pandemic was higher for a specific essential job occupation, all assumptions were met except normality. It was determined that there was no statistically significant interaction between time and essential occupations before and during the pandemic,  $F(2, 82) = .934$ ,  $p = .397$ . Meaning that no category of essential job perceived themselves as having experienced more stress during the first nine months of the pandemic than another. Nonetheless, the main effect of stress before to during the pandemic as mentioned in above sections, remained significant.

### **Exploratory Analyses**

In order to more thoroughly examine the data, additional analyses were run. These analyses were run either as a follow up to the previously presented findings or were solely exploratory in nature. While the survey included a wide array of data that was not necessarily specific to the initial hypotheses, I felt it was important to expand on this data to determine any

further links to stress, crime, and public safety during the COVID-19 pandemic. As well, it was of interest to explore aspects surrounding COVID-19 vaccines, including what factors might predict plans to get, or not get, a vaccine.

## **Stress**

### ***Exposure to COVID-19***

While perceived stress was examined in the main findings, there were a number of other factors that have a potential to influence respondent stress ratings. In particular, I wanted to examine whether concern with being exposed to COVID-19 and concern with friends or family being exposed to COVID-19 were contributing factors to perceived stress levels during the first nine months of the pandemic. A multiple linear regression was run to determine whether these variables predicted perceived stress in respondents. There were four outliers as determined by the studentized deleted residual that indicated they were each  $\pm 3$  standard deviations. These cases had undue influence on significance and were left in. The multiple regression model significantly predicted perceived stress in respondents,  $F(2, 252) = 15.158, p = .015, \text{adj. } R^2 = .10$ . Specifically, concern for friends and family being exposed to the virus significantly predicted perceived stress,  $p = .01 (\beta = .23)$ , but concern with themselves being exposed did not significantly predict perceived stress,  $p = .274 (\beta = .10)$ . The findings indicate that respondents' perceived stress was influenced by concern with their family or friends being exposed to COVID-19, but not by concern for themselves being exposed to the virus.

### ***COVID-19 Hotspots***

I was also interested in determining whether perceived stress was impacted by geographic region within Ontario. More specifically, I was interested in determining if perceived stress increased more from before to during the first nine months of the pandemic in regions of Ontario

designated as “hotspots” than in other regions.<sup>7</sup> This was important as certain hotspots in Ontario were in lockdown much longer than other regions of Ontario and the lockdowns often had more intense restrictions. As such, it is possible that stress levels may have increased more in regions where lockdowns were stricter and where COVID-19 was considered to be more prevalent. A two-way repeated measures ANOVA was run in order to examine this. Although normality was violated, this was not considered overly problematic, as ANOVAs are fairly robust to this violation. There was no significant interaction between change in perceived stress and geographic region (i.e., hotspot or not),  $F(1, 255) = 2.288, p = .132$ . Although, stress did increase from before the pandemic for hotspot regions ( $M = 2.85, SD = .946$ ) and non-hot spots ( $M = 2.65, SD = 1.00$ ) to during the pandemic for hotspots ( $M = 3.27, SD = 1.03$ ) and non-hot spots ( $M = 2.90, SD = .995$ ), as previously mentioned that increase from pre to post pandemic was not significant. The main effect of stress remained significant, as reported in above sections regarding stress (i.e., perceived stress was significantly higher during the first nine months of the pandemic than before). Furthermore, there was also a main effect of geographic region,  $F(1, 255) = 6.113, p < .05$ , Partial  $\eta^2 = .023$ . More specifically, stress was higher in hotspot regions of Ontario than it was in other regions of Ontario with a mean difference of .284 ( $p = .014; d = .36$ ), regardless of the pandemic.

### **Job Stress**

Two subscales of the Brief Job Stress Questionnaire were used in the following analyses, quantitative job overload and poor work environment. These two subscales were chosen based on relevance to job stressors that may be impacted by the COVID-19 pandemic. Two multiple linear regressions were run to determine predictors for quantitative job overload and poor work

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<sup>7</sup> Hotspot regions for the pandemic were considered to be Central East and Central West Ontario, which includes Dufferin, Simcoe, Peel, York, Durham, and Toronto.

environment. The following 16 predictor variables were used in both regression analyses: testing positive for COVID-19, knowing someone who has tested positive for COVID-19, having at least one child, having at least one child doing remote learning, having regular contact with elder or immune compromised individuals, how often respondents have been watching or reading COVID-related news, perceptions of crime change during the pandemic, which region of Ontario respondents reside in (i.e., hotspot or not), gender, essential worker status, score on the General Wellbeing Schedule, score on the Perceived Stress Scale, overall stress with being exposed to COVID-19, overall stress with having friends or family exposed to COVID-19, having proper training of COVID-19 protocol to do their job safely, and having adequate Personal Protective Equipment (PPE) to do their job safely. These predictor variables were selected for inclusion in the multiple regression analyses because it was thought that they each may play a role in impacting changes of job stress during the pandemic. Specifically, having additional distractions at home or health issues related to COVID-19 might predict whether someone experiences an increase of job stress. As well, many of the predictors were used in previous regressions so for both consistency and exploration it was of interest to determine if they would also predict this outcome.

### ***Quantitative Job Overload***

Quantitative job overload involved three items from the BJSQ: having an extremely large amount of work to do, not being able to complete work in the required time and having to work as hard as you can. Total mean scores for these questions could range from 1.3 to 4. All assumptions were met and the regression model significantly predicted quantitative job overload,  $F(16, 110) = 2.479, p = .003, \text{adj. } R^2 = .15$ . However, only two variables in the model were found to be significant predictors of quantitative job overload – having at least one child doing

remote learning ( $p = .011$ ;  $\beta = .30$ ) and essential worker status ( $p = .036$ ;  $\beta = .19$ ). To explain further, having children doing remote learning resulted in a .001 decrease in quantitative job overload score compared to having no children doing remote learning. This indicates that quantitative job overload was actually higher for those with children doing remote learning (as indicated by a lower total quantitative job overload score). In addition, being an essential worker resulted in a .323 increase in quantitative job overload score compared to non-essential workers. This indicates that being an essential worker resulted in more quantitative job overload. Ultimately, having a child doing remote learning from home was a stronger predictor of job overload than being an essential worker, as indicated by standardized coefficients.

### ***Poor Work Environment***

The poor work environment subscale involved one item from the BJSQ, where respondents were asked to indicate on a 4-point Likert scale whether their physical work environment was poor (e.g., noise, lighting, temperature, ventilation). All assumptions were met and the multiple regression model significantly predicted poor work environment,  $F(16, 109) = 3.008$ ,  $p < .001$ , adj.  $R^2 = .20$ . Four variables were significant predictors of poor work environment, including how often respondents read or watch COVID-related news ( $p = .026$ ;  $\beta = .19$ ), perception of crime change during the pandemic ( $p = .022$ ;  $\beta = -.19$ ), essential worker status ( $p = .016$ ;  $\beta = .21$ ), and total scores on the General Wellbeing Schedule ( $p = .041$ ;  $\beta = -.18$ ). Furthermore, one predictor, overall stress with being exposed to COVID-19, approached significance ( $p = .055$ ;  $\beta = -.25$ ). Stress with being exposed to COVID-19 was the strongest predictor of job stress relating to poor work environment, as indicated by standardized coefficients.

These findings indicate that for every one unit increase in how often respondents watch or read COVID-related news resulted in a .167 increase in poor work environment score. Given that higher scores indicate better work environment conditions, this means that the more often respondents reported tuning into COVID-related news, the better they rated their work environment. As well, for every one unit increase in perceptions of crime change during the pandemic, there was a .181 decrease in poor work environment score. This indicates that those who perceived crime to have increased more during the first nine months of the pandemic were more likely to experience poor work environment conditions. Additionally, compared to non-essential workers, we would expect essential workers to experience a .390 decrease in poor work environment, indicating that essential workers are often working in poor work environments. Lastly, for every one unit increase in general wellbeing scores (which indicates more severe distress), there was a .035 decrease in poor work environment scores. This means that those that reported being more distressed during the pandemic were more likely to experience a poor work environment. Finally, Overall stress with being exposed to COVID was approaching significance, indicating that with every one unit increase of stress of being exposed to COVID, there was a .221 decrease in poor work environment. Such that, the more stressed an individual is about being exposed to COVID-19, the poorer work environment they are likely experiencing.

## **Public Safety**

### ***Crime and Gender***

Given that woman are victims of crime more often than men, or feel less safe than men (Statistics Canada, June 2020a), I also wanted to examine gender differences in the perceptions of crime change from before to during the first nine months of the pandemic, as women may perceive shifts in crime differently. There were 123 male and 131 female respondents in the

sample. Multiple independent Samples *t*-test were run on each of the crime types and overall perceptions in crime change during the first nine months of the pandemic to determine if there were differences in perceptions of these specific crime types between males and females. The findings for these analyses are reported in the table below for better visual representation of these trends.

**Table 5**

*Breakdown of t-Tests for Crime Types and Gender*

Crime Type	Male		Female		<i>df</i>	<i>t</i> -value	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Overall Crime	3.06	.881	3.04	.093	252	.153	.879	.03
Alcohol-related	3.21	.880	3.15	1.019	252	.490	.625	.06
Child abuse	3.37	.823	3.57	.969	252	-1.827	.069	.22
Cybercrime	3.62	.873	3.77	.997	252	-1.299	.195	.16
Domestic abuse	3.53	.881	3.91	.919	251	-3.348	<b>.001*</b>	<b>.42</b>
Drug-related	3.51	.833	3.75	.949	251	-2.148	<b>.003*</b>	<b>.26</b>
Financial crime	3.49	.813	3.61	.933	252	-1.116	.266	.13
Hate crime	3.42	.840	3.71	.890	252	-2.641	<b>.009*</b>	<b>.33</b>
Property crime	3.20	.893	3.18	1.021	252	.099	.921	.02
Sexual crime	3.13	.760	3.24	.953	251	-1.039	.300	.12
Traffic-related	2.95	.867	3.00	1.116	252	-.387	.699	.05
Trafficking	3.07	.837	3.15	.954	252	-.709	.479	.01
Violent crime	3.16	.881	3.27	.975	252	-.895	.372	.11

*\*Indicates significance of  $p < .05$ .*

The following crime types were perceived to have increased by the majority of respondents, child abuse, cybercrime, domestic abuse, drug-related crime, financial crime, and hate crime. The rest of the crime types were perceived to have remained the same by the majority of respondents during the first nine months of the pandemic. It seems as though female respondents felt that domestic abuse, drug-related crime, and hate crime increased significantly more than their male counterparts. Overall, females perceived each crime (with the exception of

alcohol-related crime and property crime) to have increased more than males even though most were not statistically significant. Perhaps, this is due to woman often being primary targets of crime as previously mention.

### ***Walking Alone at Night***

A two-way repeated measures ANOVA was run to determine whether perceptions of how safe people felt walking alone at night had changed from before to during the first nine months of the pandemic and whether that change was influenced by gender. All assumptions were met, except normality ( $p < .005$ ). As previously mentioned, ANOVAs are fairly robust to violations of normality. Statistics Canada (June 2020a) reported in a survey from June 2020 that female respondents felt less safe when walking alone at night than their male counterparts since the pandemic began. The current study found that there was no significant two-way interaction between feelings of safety while walking alone at night before versus during the first nine months of the pandemic and gender,  $F(1, 251) = 3.064, p = 0.081$ . However, there was a main effect of gender. Thus, regardless of the pandemic, female respondents ( $M = 3.19; SD = .094$ ) felt less safe walking alone at night than male respondents ( $M = 2.35; SD = .096$ ), with a mean difference of .842.

### **COVID-19 Vaccine**

Participants were asked questions about the COVID-19 vaccine, given that it was newly developed and just being rolled out at the time of the survey. Furthermore, since receiving the COVID vaccine is essential to the reopening of Ontario and a major factor in the return to normalcy for the province, it was important to inquire how the public felt about the vaccine and factors relating to the decision in actually getting the vaccine. As such, this was a main reason for it including vaccine-related questions at the conclusion of the survey. The majority of

participants felt that the federally-approved vaccines were moderately effective ( $n = 103$ , 40.1%;  $M = 4.35$ ,  $SD = 1.333$ ), and felt it was moderately to extremely safe ( $n = 145$ , 56.4%;  $M = 3.40$ ,  $SD = 1.226$ ). Furthermore, 74.1% of respondents ( $n = 191$ ) reported that they were planning to get the vaccine when it became available to them (73.3%,  $n = 189$ ) or have already gotten at least one dose of the vaccine (0.8%,  $n = 2$ ). The majority of participants also felt that the vaccine should be mandatory for all Canadians unless an exception has to be made for health reasons ( $n = 161$ , 62.6%).

A binomial logistic regression was performed to ascertain the effects of age, gender, perceptions of effectiveness of the vaccine, perceptions of safeness of the vaccine, testing positive or know someone who has tested positive for COVID-19, knowing someone who died from COVID-19, having children, or having regular contact with the elderly or immune compromised on whether or not participants planned on getting a COVID-19 vaccine when one became available to them, or had already received at least one dose of a vaccine.<sup>8</sup> There were 10 standardized residuals with values ranging from 2.672 to 4.810, which were kept in the analyses and all other assumptions were met. The logistic regression model was statistically significant,  $\chi^2(9) = 104.527$ ,  $p < .001$ . The model explained 49.6% (Nagelkerke  $R^2$ ) of the variance in plans to get the vaccine and correctly classified 73.9% of cases. Sensitivity was 92%, specificity was 63.6%, the positive predictive value was 87.7% and the negative predictive value was 73.6%. Of the nine predictor variables only one was statistically significant: “How safe do you feel federally-approved COVID-19 vaccines are?”. Respondents who indicated they felt the vaccine was safe were more likely to report that they were planning to receive the vaccine when eligible.

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<sup>8</sup> More specifically, this analysis was run on a dichotomous outcome variable where individuals who responded “yes” or “already got at least one dose of the vaccine” were combined and compared against those who responded “no” to the following question: “Are you planning to get a COVID-19 vaccine when it becomes available to you?”

The area under the ROC curve was .882, 95% CI [.836, .927], which is an excellent level of discrimination according to Hosmer et al. (2013).

## **Discussion**

This study examined whether public perceptions of crime had changed from before the COVID-19 pandemic began to during the first nine months of the pandemic (i.e., mid-March to mid-December 2020). Furthermore, this study also set out to determine whether stress and well-being of the public had changed during this timeframe and whether that change influenced perceptions of crime rates. Overall, support for the various hypotheses was mixed; each hypothesis, and the associated findings, will now be discussed in more detail.

### **Primary Analyses**

#### ***Public Perceptions of Crime Change***

To briefly summarize the findings, “remained the same” was the response option chosen for half of the crime types and “increased slightly” was the response option chosen for the other half of the crime types. However, for the crime types that “remained the same” was the most frequent response option chosen, the next most frequent response option chosen was “increased slightly”. To specify further, the most frequent response for alcohol-related crimes, property crime, sexual crime, traffic-related crime, trafficking, and violent crime was “remained the same” during the first nine months of the pandemic and the most common response option for child abuse, cybercrime, drug-related crimes, domestic violence, financial crime, and hate crime was “increased” either “slightly” or “a lot” during the first nine months of the pandemic. Interestingly, “decreased slightly” or “decreased a lot” was not the most popular response option for any crime type.

Recall that Hypothesis 1 stated that the public would perceive violent crime as remaining the same in the first nine months of the pandemic. This hypothesis was supported, as “remained the same” was the most common response option found in the data. Hypothesis 2 stated that the public would perceive child abuse, domestic violence, cybercrime, financial crime, property crime, and sexual crime to have increased in the first nine months of the pandemic. The findings partially support this hypothesis. More specifically, “increase slightly” or “increase a lot” were the most common response options for four of the six crime types – child abuse, cybercrime, domestic violence and financial crime. However, for the remaining two crime types, property crime and sexual crime, the most common response option was “remained the same” by respondents. Hypothesis 2 also stated that it was unknown whether the public would perceive traffic-related crime to change. This exploratory result found that the majority of respondents chose “remained the same” as their response, during the first nine months of the pandemic. It is logical that individuals would perceive both cybercrime and domestic violence to increase, as people would be spending more time online, as suggested by Hawdon et al. (2020), and more time with potentially abusive partners, as suggested by UN Women (2020).

In line with research from Prime et al. (2020), the perception that child abuse has increased during the pandemic can be explained by the family stress model. Specifically, situational factors such as consequences of COVID-19 (medically and socially), minimal social supports outside of the home, increased demand to meet social and educational needs of children with school and daycare closures can lead to the use of more negative parenting styles that may result in neglect or abuse of a child (Prime et al., 2020). Studies also found that parental job loss coupled with positive reframing decreased the risk of physical abuse to children (Lawson et al., 2020). However, oftentimes this mechanism needs to be prompted by a therapist, as parents are

often too drained with the high demand of their parental resources to access this coping style on their own, and a therapist may not be as accessible (physically or financially) during these times (Prime et al., 2020). Such that, resources should be delegated to these matters in order to combat increase risk of child abuse occurring during the pandemic.

Inadequate financial aid from the government during these hardships add another stressor to this model and may force parents to participate in activities deemed necessary to survive financially and get back to normal, perhaps leading to the perception that financial crimes have increased during the pandemic (Prime et al., 2020). Along with the fact that online activities including shopping and banking have vastly increased during this time that could have also led respondents to perceive financial crime as having increased (Rosen, 2020; HSBC, 2020).

According to Hypothesis 3, the public was predicted to perceive crime rates involving drugs and alcohol as having increased during the first nine months of the pandemic. This hypothesis was partially supported, as drug-related crimes were perceived to have increased, which is consistent with this hypothesis. However, alcohol-related crime was perceived by the majority of the public to have remained the same, which is inconsistent with this hypothesis. Rotermann (2020) indicated that weekly alcohol consumption had increased by 14% in Canada from March 29<sup>th</sup> to April 3<sup>rd</sup>, 2020. While alcohol consumption could have certainly increased as a result of the pandemic, it does not directly indicate that alcohol-related crimes would increase as well given that people have been at home more, where perhaps alcohol-related crime is less likely to occur, or at least this could have been the perception of survey respondents in the current study. Furthermore, increased alcohol consumption may have been a factor in the perceived increase in domestic abuse, but this cannot be examined in the current study.

In terms of drug-related crime, although the RAT would support the idea that selling and buying substance may be more difficult with increased travel and border restrictions (United Nations, 2020). Respondents perceived drug-related crimes to have increased even with the limited ability to manufacture these drugs. The perceived increase could be due to many of these substances still being illegal in Ontario. Thus, any indication that drugs were involved, even if for personal consumption, could have been considered a crime by respondents. In addition, drug-related crimes might have been perceived as increasing due to supply limitations. While this sounds counterintuitive, a Canadian study showed that individuals with previous substance use problems are more likely to relapse during the pandemic (Ali et al., 2021). However, due to the supply shortage, they are turning to more toxic and readily available substitutions for their usual drugs. As well, the pandemic has limited programs such as needle exchange, withdrawal management, and counselling services for people who use drugs (Waldner et al., 2021). Given this information, these individuals are at a higher risk for overdosing and are increasing their usage, which could explain why the public have perceived this crime type to have increased (whether or not it actually has is unknown).

Hypothesis 4 predicted that the public would perceive hate crime in general to increase during the first nine months of the pandemic and that those of East Asian descent would perceive hate crime to increase to a higher degree than those who indicated they were not of East Asian descent during the first nine months of the pandemic, as suggested by both Gover et al. (2020) and Tessler et al. (2020). Based on the findings, it was determined that part one of the hypothesis was supported given that the majority of participants chose that hate crime had either “increased slightly” or “increased a lot.” However, the second part of the hypothesis was not supported as those of East Asian descent did not perceive hate crime as having changed at a different rate than

respondents who were not of East Asian descent. However, a comparison between East Asian and white participants did approach significance ( $p = .07$ ).

Although the findings did indicate that the public perceived hate crime to increase during the first nine months of the pandemic, the second part of Hypothesis 4 may have lacked significance due to the small sample size of East Asian participants. Specifically, there could be some type of relationship that the study may not be capturing due to power challenges and a non-representative sample. Given that news reports do indicate that anti-Asian hate crimes have increased during the pandemic (BBC News, 2021; CTV News, 2021; NBC News, 2021), it is crucial to protect this population and other visible minority populations, as well as Indigenous peoples, during times where hate crime, racism, and discrimination have the opportunity to become more apparent. This can be done by providing a 24/7 help line, counselling services, and resources where they can report any acts of aggression. Furthermore, it is not only important to implement reactive measures, it is imperative to implement proactive measures in order to stop hateful acts before they occur considering the vulnerability of this population.

Hypothesis 5 suggested that variables including age (in years), gender (male or female), minority status (yes or no), essential worker status (yes or no), perceived stress (as assessed by the Perceived Stress Scale), and general well-being (as assessed by the General Wellbeing Schedule) would predict changes in crime from before to during the first nine months of the COVID-19 pandemic. To assess this, a multiple linear regression was run and determined that a regression model consisting of the variables listed above did not significantly predict public perceptions of change in crime. Thus, it seems that factors not examined in the current thesis better predict public perceptions of changes in crime. This suggests that while stress and well-being have changed from before to during the first nine months of the pandemic among these

survey respondents, they likely did not lead to a change in perceptions of crime. Given that perception of crime change was measured on a Likert scale, rather than on a truly continuous scale, this could have negatively impacted the accuracy of the regression analysis.

The finding that general well-being did not significantly predict perceptions of crime change is consistent with research by Martinez et al. (2020) who found that changes in well-being did not have to do with crime, but instead had more to do with concern for the welfare and health of their loved ones and financial impacts of COVID-19. Furthermore, the majority of participants indicated that they had perceived overall crime in general to have remained the same from before to during the pandemic, as such this could have been an indicator as to why the mentioned variables did not predict perceptions of crime change. The perception of crime overall remaining the same during the pandemic is consistent with a study conducted by Statistics Canada (2020a) in June 2020 as well. Given these results, Hypothesis 5 was not supported.

### ***Personal Safety***

Hypothesis 6 stated that public perceptions of satisfaction with personal safety from crime would decrease after the beginning of the COVID-19 pandemic, along with well-being, which will be discussed in more detail in the following section. Furthermore, Hypothesis 6 predicted that this decrease would be more significant for women and essential workers than it would be for men and non-essential workers. A three-way mixed ANOVA was run to examine this, and no significant differences were found in the analyses, such that satisfaction with personal safety from crime did not change from before the pandemic to during the pandemic and was not influenced by gender or whether the participant was an essential worker or not. In other words, those who were considered essential workers were not less satisfied with their personal

safety during the first nine months of the pandemic and women did not feel that their personal safety had decreased more than men did.

Research from Statistics Canada (2020a) showed that individuals felt crime in their neighbourhood had mostly remained the same in a June 2020 survey, which could explain why no change in satisfaction with personal safety from crime was found. The June 2020 survey also found that female participants felt safe less often than men when walking home alone at night; however, while they did feel less safe than men both prior to and during the pandemic, this feeling likely held steady regardless of the pandemic. Ultimately, it could be that while gender might in fact play a role in feelings of personal safety from crime, this may not have been impacted by the COVID-19 pandemic. The findings indicate that the part of Hypothesis 6 relating to personal safety was not supported.

Hypothesis 7 stated that those who are both female and an ethnic minority would perceive satisfaction with personal safety as having decreased more during the pandemic than men and non-minority participants would have. Specifically, I was interested in determining whether being a female and a minority would lead to a greater decrease in satisfaction with personal safety from crime than for other groups. A three-way mixed factor ANOVA was run and found a significant simple two-way interaction between gender and minority status. Satisfaction with personal safety was found to decrease from before to during the pandemic and female minority participants were less satisfied with their personal safety from crime than male minorities during the pandemic, which falls in line with the hypothesis.

In general, women tend to feel less safe than their male counterparts (e.g., Statistics Canada, 2020a). Thus, it is not surprising that female minority respondents were less satisfied with their personal safety during the pandemic; however, the exact reasons for this finding are

still unknown. Given this finding, it is important that resources are not only in place but are accessible for female minority groups to ensure their sense of safety is satisfied, particularly during a pandemic. Examples of resources could be having more lighting put on paths to increase visibility at night when walking alone or emergency stations connecting the user directly to 9-1-1 in the event of an emergency, virtual support groups, 24/7 help lines, and encouragement to report violations of safety to the police or a third-party organization equipped to respond effectively to ensure at-risk populations are being taken seriously and any threats are addressed promptly.

### ***Well-Being***

In addition to personal safety, Hypothesis 6 predicted that self-reported well-being would also decrease after the beginning of the COVID-19 pandemic. Furthermore, it also suggested that well-being would decrease more for women and essential workers than for men and non-essential workers. A three-way mixed ANOVA found that well-being did not change from before to during the pandemic when examining gender and essential worker status. Specifically, gender and essential worker status did not influence whether participants experienced a decrease in well-being, as assessed by the General Wellbeing Schedule, during the first nine months of the pandemic. As such, the second part of Hypothesis 6 was also not supported.

This lack of support for the well-being part of Hypothesis 6 could be explained by research indicating that while the pandemic is taxing, people are still satisfied with their overall lives at the moment (Martinez et al., 2020). Importantly, gender did not influence whether or not self-reported well-being had changed from before to during the pandemic in the current study. Furthermore, being an essential worker did not lead to decreased well-being from before to during the pandemic as hypothesized. Perhaps this could be due to working on the frontlines and

dealing with the public on a regular basis, that their base rate of well-being might be lower to begin with. They may have also adapted to deal with the repercussions of such events due to their daily interactions with the public and to potential emergent and stressful situations. On the other hand, there may not have been enough essential workers that were health care workers or first responders to produce a significance change in well-being from before to during the pandemic.

While changes in well-being did not seem to differ significantly based on gender and essential worker status, a regression was run to determine if there were specific variables that might have predicted well-being scores. Age, gender, minority status, perceived stress, and essential worker status were included as predictor variables, and it was determined that perceived stress and age significantly predicted well-being scores. Specifically, increased age was associated with more positive well-being during the pandemic and the more stressed an individual, the higher their score on the General Well-Being Schedule, indicating more severe distress. These findings make sense given that, logically, stress is a primary indicator of well-being, with high levels of stress being likely to decrease an individual's overall well-being at least to some degree (Weinstein et al., 2009). As well, existing research has examined age in relation to well-being and stress during the COVID-19 pandemic and found that younger individuals have been affected more seriously due to social isolation and negative relationship quality (Birditt et al., 2020). Specifically, Birditt and colleagues determined that age has impacted stress and psychological well-being as they are more vulnerable to the reduction of social interaction and targeting ways to improve or increase social ties during a lockdown is important for the younger generation.

### *Perceived Stress*

Hypothesis 8 stated that essential workers would be more likely to have experienced increased stress during the pandemic than someone working a non-essential job. In other words, stress for both essential and non-essential workers was predicted to have increased since the pandemic began, but stress would have increased more for essential workers in particular. A Paired Samples *t*-test was conducted to examine this and revealed that stress did change over time for all survey respondents, with stress scores increasing significantly within the first nine months of the pandemic. As such, an Independent Samples *t*-Test was run to determine if this change in stress was influenced by being an essential worker or not. Overall, support was found for Hypothesis 8, with stress in general increasing from before to during the first nine months of the pandemic, and stress for essential workers being significantly higher than the perceived stress of non-essential workers.

Ultimately, while stress was found to increase among survey respondents in general, it is logical that stress would increase more for individuals working the frontlines, where they are at an increased risk of being exposed to COVID-19 every day and some already have careers that are generally more stressful than the average job. Given all of the unknowns of the COVID-19 pandemic, it is possible that essential workers, including health care workers (although not well represented in this sample), could in fact be suffering from moral injury, as suggested by Greenberg et al. (2020). It is possible that essential workers outside of health care workers may also be suffering from moral injury given the vast unknown and inability to prepare for a global pandemic. It was also determined that none of the categories of essential jobs (healthcare/first responders, food/customer service/public transportation, or human services/education/infrastructure) reported being more stressed during the pandemic than another occupation.

However, this finding should be taken with caution given that this could be due to how the essential occupations were categorized or just not having enough participants per category to determine effects. Nonetheless, nine months into the pandemic, there were still signs of increased stress in essential workers, which shows that resources are not being established effectively and efficiently enough to combat stress for this group of individuals. As previously mentioned, mental health training, debriefing sessions, and paid sick leave for essential workers is necessary to protect their levels of stress, burnout, exhaustion, and moral injury.

## **Exploratory Analyses**

### ***Exposure and Hotspots***

In line with past research, respondents were less concerned with themselves being exposed and more concerned with their friends and family being exposed to COVID-19, such that their perceived stress levels increased in regard to their concern for their loved one's potentially contracting the COVID-19 virus, rather than being personally exposed (Martínez et al., 2020). When it comes to stress and COVID-19 hotspots, it was determined that stress did not change from before to during the pandemic in hotspots versus other regions in Ontario. This may be because there were certain cities within non-hotspot areas, as defined in this study, that at times throughout the first nine months of the pandemic were also considered hotspots. For example, Ottawa is located in Eastern Ontario and was at times considered a hotspot. This could have cancelled out any increased stress from the designated hotspots. Nonetheless, the hotspots that were included involved the majority of the Toronto region, which has been considered a hotspot for the entirety of the pandemic, rather than just a few months or weeks at a time. Further to this, stress (regardless of the pandemic) was found to be significantly higher in hotspot regions than non-hotspot regions. This might be the result of the Central East and Central West regions

of Ontario being highly populated, busy, and touristy which might emit a sense of stress where it is difficult to unwind and relax in these types of environments.

### ***Job Stress - Quantitative Job Overload***

This subscale of the BJSQ was used as it focused on amount of work required of a person at their job. This was important as working from home, or even from an office, during a pandemic adds a level of stress and complication to an already potentially stressful job. Two variables from the analysis predicted quantitative job overload: (1) having a child doing remote learning and (2) being an essential worker. This is logical given that that questions included in this subscale involved, having a lot of work to do at their job, not having enough time to complete the required work, or having to work as hard as you can. The two mentioned predictors would likely cause individuals to experience a major increase in job stress if they were working from home and having to help a child doing remote learning or working from the office and having to find someone that is able to help your child navigate remote learning during a pandemic. The threshold for job overload is likely a lot lower for these individuals and as such, job overload may be very apparent in their lives during the pandemic. Furthermore, someone working an essential job during a pandemic is likely to experience more job overload due to these unknown and unexpected circumstances, involving a global pandemic.

### ***Job Stress – Poor Work Environment***

As a reminder, this subscale of the BJSQ involved asking respondents to indicate whether their physical work environment was poor in terms of lighting, noise, temperature, and ventilation. These factors are likely to become even more prevalent when dealing with an airborne virus. Four variables predicted poor physical work environment: (1) how often someone reads watches COVID-19 news, (2) perceiving crime to have increased during the pandemic, (3)

being an essential worker, and (4) scores on the GWS. Tracking COVID-19-related news more often predicted better physical work environments. Perhaps this is because individuals tracking pandemic-related news are more likely to have done the research on what their work conditions should be like in order to avoid being exposed to or contracting COVID-19. As well, perceiving crime to have increased since the pandemic was associated with poorer physical work environments. Perhaps those working in poor physical work conditions are more likely to be exposed to COVID-19 or aspects surrounding COVID-19, including crime like break and enters, vandalism, etc.

In addition, being an essential worker was associated poorer ratings of physical work conditions. This is likely due to the fact that it is more common for essential workers to be exposed to COVID-19 in their day-to-day activities (health care workers, firefighters, paramedics, grocery clerks etc.). Furthermore, there is likely a bidirectional relationship between well-being and poor work environment, given that working in a poor physical environment could predict being more severely distressed or vice versa. The threshold for distress might be also be lower during a pandemic given all of the unknowns that come along with a deadly virus. As such, people might be more sensitive to physical work environments given the state of the world.

Concern with being exposed to COVID-19 was approaching significance as well ( $p = .055$ ) and might be important to consider for future analyses or general awareness. Individuals who reported higher overall stress with being exposed to COVID were often working in poorer physical environments where the potential of being exposed might be higher as well. As previously mentioned, respondents who reported that stress had increased from before to during the pandemic were more concerned with their friends and family being exposed to COVID-19. Interestingly, however, in the current analysis job stress (in relation to work environment) was

higher for people concerned with personal exposure to COVID-19. This could potentially be due to general versus specific situations. Namely, in general people are concerned for their friends and family being exposed, but they are more concerned with themselves being exposed when in work situations where their physical environment plays a role.

### ***Crime, Gender, and Public Safety***

Specific crime types were examined to determine the role gender played in perceptions of crime change in the first nine months of the pandemic. Female participants perceived the following crimes to have increased more than male participants: domestic violence, drug-related crime, and hate crime. Perhaps this is because there is a general knowledge that these specific crime types are more often perpetrated by men (Broidy & Agnew, 1997; Heidensohn & Silvestri, 2012) and woman are more often the victims. Given this information, it is logical that woman would report these particular crime types as having increased and while men also perceived them as having increased, it was not to the same degree as women. It is important that supports are put into place to ensure safety to women from crime both during the pandemic and after. There was a clear trend in female respondents either feeling unsafe or perceiving crime to be higher. Thus, resources that provide women with their inherent right to feel safe from crime and victimization are essential.

In terms of public safety when walking alone at night, findings were inconsistent with research from Statistics Canada (2020a). Data from Statistics Canada was collected in May of 2020 and released in June. It reported that during the pandemic female survey respondents reported feeling less safe when walking alone at night than male respondents. While the current study found that female respondents also felt less safe when walking alone at night than male respondents, this difference was not due to the pandemic as it did not change from before the

pandemic. The current study collected data eight months after the Statistics Canada study. Thus, perhaps the effects of the pandemic had worn off or had a less significant impact on feelings of safety at that point given the state of the world could have become the new 'norm.' The current study also asked questions about how safe respondents felt walking alone at night before and during the pandemic at the same time, which may have impacted the findings as well with participants being unable to recall exactly how safe they felt before compared to during the pandemic.

### ***COVID-19 Vaccine***

To summarize the vaccine-related findings, the majority of respondents felt that COVID-19 vaccines were safe, effective, and had either gotten at least one dose of the vaccine already or were planning to get it when it became available to them. Furthermore, how safe individuals felt COVID vaccines are predicted how likely they were to actually get it. This is not surprising given the fact that if someone thinks something is safe, they will likely partake if the decision is benefitting their health, wellness, and overall freedom. It was somewhat surprising that effectiveness rating of COVID vaccines did not predict whether someone was planning on getting one, as it seems logical that higher perceived effectiveness would related to increased likelihood of getting a COVID vaccine in order to protect themselves. However, the mentioned regression was run using a dichotomous outcome variable and when it was run using the 5-point Likert-scale on rate of likeliness to get the vaccine as the outcome variable, effectiveness of the vaccine was significant ( $p = .006$ ).

### **Limitations and Future Research Directions**

While there are many benefits and positive implications to conducting the current study, with all research comes limitations. In this case, these limitations open up the opportunity for

future research to be conducted. The first few limitations are rather surface level and focus on the potential restrictions in the way the study was set up and conducted. The last few limitations focus on barriers in the findings themselves.

The first limitation involves the timeframe in which the study was conducted. I used a timeframe from mid-March 2020, when COVID-19 was first declared a pandemic, until mid-December 2020, which resulted in a focus on the first nine months of the pandemic. I decided on this timeframe as mid-December was also just before the second wave and stay-at-home order in Ontario that began on December 26<sup>th</sup>, 2020. Given that I released the survey in January 2021, I was concerned that responses may have changed from thinking of the majority of the pandemic to their current lockdown situation with the new measures. Furthermore, I wanted it to be clear as to exactly when participants should be thinking back to in order to create consistency across participants. It was also too challenging to continually update the survey as new pandemic-related changes occurred (as they were frequent in nature). Although I realized that on the one hand I may be missing out on situational stressors accounting for the current stress and well-being, I wanted to be clear with participants about the exact timeframe for participants to be considering when responding to the survey. Ultimately, I decided that consistency within the survey was the best route, but I acknowledge that this approach may have resulted in missing out on valuable data or participants may have struggled to only focus on the first nine months of the pandemic when responding to the survey.

The second limitation for this study is that I did not counterbalance the various questionnaires/measures in the survey. I made this decision for several reasons. First, the survey took an average of 35 minutes to complete and as such, I did not expect a large degree of fatigue effects. I also included attention check questions to help identify which participants were actively

paying attention to the survey questions. Furthermore, it was crucial to keep the demographic questions at the beginning of the survey, as they were needed to direct participants to relevant sections of the survey. As well, I wanted to keep the vaccine-related questions at the end of the survey, as I did not want them to influence how they responded throughout the rest of the survey. The vaccine-related questions were not a main focus of the initial survey and were only added in as COVID vaccines were being approved in Canada. Also, I did not manipulate anything in the survey and as such, counterbalancing was viewed as less essential. However, it is acknowledged that this was not completely ideal and there may have been order effects present in the data.

A third limitation from this study was in the wording in which questions were asked. Given the fact that data was collected at a single time point but asked participants to think back to before the pandemic and then during the pandemic, this may have skewed the accuracy of such results. Specifically, participants were not able to answer prior to the pandemic and then again at a different time period during the pandemic (i.e., this survey did not follow a longitudinal study design). This could have potentially been problematic if participants were not able to reflect back on their state of mind from before the pandemic. However, the results indicated that there were some changes from before to during the pandemic, which suggests that at least some participants were able to reflect back on different time periods. Future research could help address this limitation by conducting a follow-up survey that focuses on the subsequent nine months of the pandemic or post-COVID to compare the perceptions at each time point. This would allow for a better assessment of changes in perceptions of crime, stress, and well-being over the course of the pandemic.

A fourth limitation involved the limited number of East Asian participants in the current study, which may have impacted the findings for Hypothesis 4. More specifically, the sample

consisted of only 35 East Asian individuals (approximately 13.6% of the total sample), which may have resulted in a lack of power to achieve significance and limited generalizability as well. Ultimately, this analysis should be considered with caution with the assumption that different findings may have been obtained with a larger sample of East Asian participants. In addition, global racial tensions were extremely prevalent throughout both the United States and Canada during the first nine months of the pandemic with the Black Lives Matter Movement, which could have also influenced the public's perception of crime during the pandemic and hate crime in particular. This could have potentially been a reason as to why there were no significant findings between East Asian and non-East Asian participants, particularly since the survey question was not specific to hate crime against East Asian individuals. Respondents may have felt that hate crime was increasing for both Black and East Asian individuals. One being the result of the pandemic and the other being the result of the spotlight that the death of George Floyd put on racism in North America. However, this thesis was unable to separate out, or control for, these two events.

Power may have also been an issue for the sample of health care workers ( $n = 14$ ) and first responders ( $n = 2$ ), as these individuals represented a very small portion of the sample (2.65% and 0.3%, respectively). Again, these small samples could have inhibited the generalizability of the findings. The sample size also did not allow for much breakdown of the essential worker category, as different findings may have emerged for health care workers compared to customer service workers, for example. The time commitment required to complete the survey may provide one explanation for why so few health care workers and first responders participated in the research, with participants taking an average of 35 minutes to complete the survey. The hypothesis that health care workers and first responders would report feeling more

stressed than any other essential occupation throughout the pandemic may have been supported with a larger sample size for these two groups. Future research could certainly collect more data on these specific populations (i.e., East Asian participants, health care workers, and first responders) to better gauge how they were specifically impacted throughout the COVID-19 pandemic and use a shorter version of the survey to ensure time is not a factor in their ability to complete it thoroughly.

Another limitation involves the crime variable, as it was based on participants' perceptions of crime change since the pandemic began versus actual crime data. An immediate next step for this study would be to cross examine archival crime data from Durham Regional Police Service (DRPS) to determine if the public's perception of these changes were similar to the reported crime changes as documented by the police data, as it is important to compare public perceptions of crime change during the pandemic to actual crime data.<sup>9</sup> It may also be interesting to not only examine DRPS data but to look at crime data from other police agencies in Ontario as well, such as Ontario Provincial Police (OPP) and Royal Canadian Mounted Police (RCMP), and this could be extended to other regions in Canada. Similarly, the public perceptions survey could be replicated to allow for anyone in Canada to participate, which would allow potential regional differences to emerge.

Accessibility was likely a limitation in the current study as well, with those who do not have access to a computer or technology being unable to partake in an online survey. As well, those with less access to the internet may have felt even more isolated during the pandemic than those who do have access, which could have influenced the well-being findings. In other words, those who completed this survey have access to networks where they are able to connect with

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<sup>9</sup>An examination of police crime data was initially going to be included in the current thesis, but time restraints did not permit this.

loved ones and because of this, they may have been less distressed in terms of well-being during the first nine months of the pandemic. Further to this, the finding that older people had more positive overall well-being could have been due to the fact that older people in this survey might be those who are more protected or educated. Future research should attempt to include those who lack access to the internet, perhaps via newspaper recruitment or telephone surveys.

A final limitation involves the potential for selection bias in the current study. Research has shown that COVID-19 hit marginalized communities harder and it is possible that these groups of people may not be fluent in English (CTV News, 2020). Based on my eligibility criteria, these individuals would not have been permitted to complete the survey and as a result, I could be missing out on data from the groups who were the most severely impacted by the pandemic. Furthermore, excluding those who are not fluent in English could have also affected the representativeness of the sample. Nonetheless, it is important to note that approximately 93% of the Ontario population speaks English according to statistics on official languages in Canada (Canadian Heritage, 2019). Also relevant to selection bias, conspiracy theorists may have been less likely to participate in this study knowing it was about COVID-19 from the informed consent. Thus, this study could be missing out on individuals who have more negative views about COVID-19 or who do not “buy into” COVID-19 or the vaccine, which may have impacted the findings as well.

### **Conclusion**

This thesis found that being an essential worker did not affect perceptions of perceived crime rate changes, nor did essential workers have significantly decreased mental well-being, however being an essential worker did significantly increased stress during to the pandemic as put forth in my research question. There may be a few reasons for this. Specifically, the

individuals who deal with crime firsthand are first responders and the study had a very minimal sample of these individuals. Thus, while there may have been a decent number of essential workers, there were not many first responders who could intuitively say whether crime had changed during the pandemic. Furthermore, essential workers, including health care workers, may have been prepared for the pandemic and as such, did not suffer from moral injury and did not experience a severe or significant change in mental well-being from before to during the first nine months of the COVID-19 pandemic (again, there was not a large sample of health care workers either). Nonetheless, stress for essential worker status was significantly higher than for non-essential workers. Such that, while not all factors were influenced by being an essential worker, perceived stress was. To summarize, support for the hypotheses was mixed, nonetheless the findings indicated the public did perceive there to be increases in crime for certain crime types (child abuse, cybercrime, domestic abuse, drug-related crime, financial crime, and hate crime) and that resources should be explored in order to support victims of these crimes during the pandemic.

In terms of exploratory analyses, it was determined that the public was most concerned with their friends or family being exposed to the virus during the pandemic. It was also determined that the public experienced an increase in job stress with having children doing school remotely and being an essential worker predicting quantitative job overload and watching COVID-related news, perceptions of crime changes, being an essential worker, and GWS scores predicting poor physical work environment. As well, female respondents perceived crime to have increased more for domestic violence, drug-related crime, and hate crime than males, and plans to get the vaccine were predicted by perceptions of safety and effectivity of the vaccine itself. It is timely that government funding be implemented to allow for specific resources to woman,

families, and vulnerable persons including visible minorities and Indigenous people to ensure safety and resilience throughout the COVID-19 pandemic. Resources such as, online or telehealth support, virtual welfare checks, therapy, crisis lines, safe spaces, emergency help stations set up in parks, and increased lighting in dim public spaces would be a great start.

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## Appendix A: Ethics Approval

*Date:* December 14, 2020

*To:* Karla Emeno

*From:* Paul Yelder, REB Vice-Chair

*File # & Title:* 16109 - Perceptions of Public Safety and Well-Being among COVID-19 Pandemic

***Status:* APPROVED**

***REB Expiry Date:* December 01, 2021**

***Documents Approved:***

Appendix I - Debriefing (Received October 13, 2020)
Appendix H - BriefJobStressQuestionnaire ( <b><i>Received October 13, 2020</i></b> )
Appendix G - GeneralWellnessSchedule-Updated ( <b><i>Received November 30, 2020</i></b> )
Appendix F - PerceivedStressScale ( <b><i>Received October 13, 2020</i></b> )
Appendix E - Attitudes towards police - Updated ( <b><i>Received November 30, 2020</i></b> )
Appendix D - Public Perceptions of Crime rates and Community Safety ( <b><i>Received October 13, 2020</i></b> )
Appendix C - PublicDemographics ( <b><i>Received October 13, 2020</i></b> )
Appendix C - Student Demographics ( <b><i>Received October 13, 2020</i></b> )
Appendix B-ConsentPublicSample - Updated ( <b><i>Received November 30, 2020</i></b> )
Appendix A - ConsentStudent-Updated ( <b><i>Received November 30, 2020</i></b> )

*Date:* December 17, 2020

*To:* Karla Emeno

*From:* Paul Yelder, REB Vice-Chair

*File # & Title:* 16109 - Perceptions of Public Safety and Well-Being among COVID-19 Pandemic

***Status:* CHANGE REQUEST APPROVED (Received December 15, 2020)**

***Current Expiry:* December 01, 2021**

***Documents Approved:***  
***Appendix D-CR and CS (Received December 15, 2020)***  
***Appendix J (Received December 15, 2020)***  
***Appendix C (Received December 15, 2020)***

*Date:* January 22, 2021

*To:* Karla Emeno

*From:* Paul Yelder, REB Vice-Chair

*File # & Title:* 16109 - Perceptions of Public Safety and Well-Being among COVID-19  
Pandemic

***Status:*** **CHANGE REQUEST APPROVED (Received January 20, 2021)**

***Current Expiry:*** **December 01, 2021**

***Documents Approved:***

Appendix I - COVID-19 Vaccine (Received January 20, 2021)
Appendix G - General Well-Being Schedule ( <b>Received January 20, 2021</b> )
Appendix H - The Brief Job Stress Questionnaire ( <b>Received January 20, 2021</b> )
Appendix E - Attitudes towards police in Canada ( <b>Received January 20, 2021</b> )
Appendix F - Perceived Stress Scale ( <b>Received January 20, 2021</b> )
Appendix C - Demographics Student Sample ( <b>Received January 20, 2021</b> )
Appendix D - Perceptions of Crime Rates and Community Safety ( <b>Received January 20, 2021</b> )
Appendix C - Demographics Public Sample ( <b>Received January 20, 2021</b> )

**Appendix B: Public Consent Form**  
**Consent Form to Participate in a Research Study**

Please read this consent form carefully.

**Title of Research Study:** Perceptions of Public Safety and Well-Being during the COVID-19 Pandemic

**Name of Principal Investigator (PI):** Karla Emeno

**PI's contact email:** Karla.Emeno@ontariotechu.ca

**Names of Co-Investigators and contact emails:** Siobhan Green

(Siobhan.Green@ontariotechu.ca), Renee Bencic (Renee.Bencic@ontariotechu.ca), and Cristina Ferrara (Cristina.Ferrara@ontariotechu.ca).

**Departmental and institutional affiliation:** Faculty of Social Sciences and Humanities, Ontario Tech University.

**Introduction**

You are invited to participate in a research study entitled Perceptions of Public Safety and Well-Being during the COVID-19 Pandemic. Please read the information about the study presented in this form. The form includes details on the study's procedures, risks, and benefits that you should know before you decide if you would like to take part. You should take as much time as you need to make your decision. You should ask the Principal Investigator (PI) or study team to explain anything that you do not understand and make sure that all of your questions have been answered before signing this consent form. Participation in this study is voluntary.

This study has been reviewed by the University of Ontario Institute of Technology (Ontario Tech University) Research Ethics Board #16109 on December 17th, 2020.

**Purpose and Procedure:**

You, along with other members of the general public, have been invited to participate in this research study because our team is interested in investigating the perception of well-being and public safety before and during the COVID-19 pandemic. If you participate in this study, you will first be asked to complete a demographics questionnaire. You will then be presented with a variety of questionnaires related to perceptions of crime, perceived stress, general well-being, attitudes toward police, and community safety. This study will take approximately 20 minutes to complete.

**Potential Benefits:**

Upon the completion of the study, participants will be compensated with a monetary gift. Furthermore, the results of this study could assist law enforcement with understanding the crime rates in the area and the well-being of the general public and essential workers during these unprecedented times. You also have the opportunity to share your opinions on the pandemic and how it has impacted your life.

**Potential Risk or Discomforts:**

This study involves no more than minimal risks. The survey will ask you to answer a variety of questionnaires regarding job and perceived stress, general well-being, and attitudes towards

police, along with some questions about your perceptions of crime in the area. If you anticipate that such material may cause you discomfort or anxiety, you may choose not to participate. If you decide to participate, but at any point during the study you feel discomfort or anxiety, you can skip any questions that you do not wish to answer or withdraw from the study altogether, without any negative consequences. After you complete the study, you will be debriefed and resources will be provided to you in the case that you feel distress or anxiety because of your participation.

### **Use and Storage of Data:**

Dr. Karla Emeno, and her research assistants will be responsible for keeping and analyzing the anonymous data files based on your responses. It is important to note that in the future, Dr. Emeno, or other researchers could choose to analyze these anonymous files for other valid research purposes (e.g., for meta-analysis, as secondary data, for replication purposes). The anonymous data will be stored on password-protected computers, but data may also be stored on back-up drives, the cloud, and USB keys.

The survey software company collecting this data for Dr. Emeno, does not store any sensitive or confidential participant information, but it will save all survey responses. Thus, all study data will also be stored on the survey software company's restricted, firewall and DDOS protected servers, which require authorization and are not accessible via web traffic. These servers are monitored 24/7, contained in environmentally controlled data centres, and are primarily located in the United States (and thus subject to the data laws and regulations of the country where the servers are located).

### **Confidentiality:**

Your privacy shall be respected. No information about your identity will be shared or published without your permission, unless required by law. Confidentiality will be provided to the fullest extent possible by law, professional practice, and ethical codes of conduct. Please note that confidentiality cannot be guaranteed while data is in transit over the Internet. This research study includes the collection of demographic data which will be aggregated (not individually presented) in an effort to protect your anonymity.

### **Right to Withdraw:**

Your participation is voluntary, and you can answer only those questions that you are comfortable with answering. The information that you share with us will be held in strict confidence and discussed only with the research team.

If you do not wish your data to be a part of this study, you must make that decision now, before you start, and choose to not participate. After you begin, the study is anonymous, so there is no way for us to determine which responses in the resulting computer database are yours to delete them. If you chose to exit the study by closing the browser window, severely incomplete data will not be analyzed, but all survey data—even incomplete responses—will be stored on survey software company's servers, and mostly complete surveys may still be analyzed. Thus, the only way to ensure that your responses are not included in this research is to choose to not participate.

**Compensation:**

Participants will receive a compensation of a monetary gift for their participation in the study. The money will be dispersed to each participant once they have completed the study.

**Debriefing and Dissemination of Results:**

You may contact the researchers using the above contact information if you're interested in learning the results of this study or have questions. The data from this study may be presented in aggregate/group form through posters, presentations, or manuscripts.

**Participant Rights and Concerns:**

Feel free to ask the researcher any questions that you might have about the study by contacting them using the above contact information. If you have any questions about your rights as a participant in this study, complaints, or adverse events, please contact the Research Ethics Office at (905) 721-8668 ext. 3693 or at [researchethics@ontariotechu.ca](mailto:researchethics@ontariotechu.ca). If you have any questions concerning the research study or experience any discomfort related to the study, please contact the researcher Siobhan Green at [Siobhan.Green@ontariotechu.ca](mailto:Siobhan.Green@ontariotechu.ca). By signing this form, you do not give up any of your legal rights against the investigators, sponsor or involved institutions for compensation, nor does this form relieve the investigators, sponsor or involved institutions of their legal and professional responsibilities.

**Consent to Participate:**

By clicking the button below to continue on to the study, I agree to participate in this project and I have made this decision based on the information I have received about it. I have read and understand the present consent form and I accept its stipulations. I also understand that by agreeing to this consent form I do not waive any of my legal rights or recourse. By clicking the button below, I agree to participate in this study, and I consent to my anonymous data possibly being analyzed in future for additional research (e.g., secondary data analysis, meta-analyses).

I agree

### Appendix C: Demographics

**Qualtrics Eligibility Criteria:** age 18 or older, fluent in English, reside in Ontario

1. Do you reside in Ontario? (If no, send to debrief)
  - Yes
  - No
  
2. Which region of Ontario do you reside in?
  - Northern Ontario** (i.e., Kenora, Rainy River, Thunder Bay, Cochrane, Algoma, Sudbury, Timiskaming, Manitoulin, Parry Sound, & Nipissing)
  - Western Ontario** (i.e., Essex, Chatham-Kent, Lambton, Middlesex, Elgin, Huron, Perth, Oxford, Norfolk, Haldimand, Brant, Waterloo, Bruce, Grey, Wellington, Halton, Hamilton, & Niagara)
  - Central West Ontario** (i.e., Dufferin, Simcoe, Peel, & York)
  - Central East Ontario** (i.e., Durham & Toronto)
  - Eastern Ontario** (i.e., Muskoka, Kawartha Lakes, Haliburton, Peterborough, Northumberland, Hastings, Prince Edward, Lennox and Addington, Frontenac, Renfrew, Lanark, Leeds and Grenville, Ottawa, Stormont, Dundas, and Glengarry, Prescott and Russell)
  
3. How would you describe the area where you currently reside?
  - Rural
  - Urban
  - Suburban
  
4. What is your gender?
  - Male
  - Female
  - Non-binary
  - Other (please specify): \_\_\_\_\_
  
5. What is your ethnicity?
  - Arab
  - Caribbean
  - Caucasian/North American
  - Central Asian
  - European
  - East Asian (e.g., Chinese, North or South Korean, Japanese)
  - Indigenous (e.g., First Nations, Inuk, Metis)
  - Latin American
  - North African
  - South Asian (e.g., East Indian, Pakistani, Sri Lankan)
  - Southeast Asian (e.g., Vietnamese, Filipinos, Thai, Laotian, Cambodian)
  - Subsaharan African
  - Other (please specify):

6. What is your age (in years)? \_\_\_\_\_
7. What is your highest level of education attained?  
Less than high school  
High school diploma or equivalent (e.g., GED)  
Some college or university, no degree  
College diploma/certificate/trade  
University degree (e.g., Bachelor's degree)  
Some Master's and/or PhD, no degree  
Master's and/or PhD degree
8. What is your political affiliation?  
Liberal  
Conservative  
New Democratic Party (NDP)  
Green Party  
People's Party  
The Bloc Quebecois  
None  
Other (please specify):
9. Did you apply for COVID-19 government funding (i.e., CERB, CESB, etc.)?  
Yes  
No
10. Did you receive COVID-19 government funding (i.e., CERB, CESB, etc.)?  
Yes  
No
11. **Before** the pandemic, what was your average annual household income (before taxes)?  
\_\_\_\_\_
12. On average, how many hours a week did you work **before** the pandemic? \_\_\_\_\_
13. Did you get laid off at any point during the first 9 months of the pandemic (mid-March to mid-December)?  
Yes  
No
14. If yes, for how long (in months)? \_\_\_\_\_
15. Were you back to work at any point during the first 9 months of the pandemic (mid-March to mid-December)?  
Yes  
No

16. If yes, for how long (in months)?
17. During the time that you were working from mid-March to mid-December, how many hours a week did you work on average? \_\_\_\_
18. Were you laid off at any point as a result of the lockdown that began on December 26?  
Yes  
No
19. Please specify your job status during the first 9 months of the pandemic (mid-March to mid-December). **Select all that apply.**  
Full-time paid employee (30-40+ hours/week)  
Part-time paid employee (15-29 hours/week)  
Part-time paid employee (<15 hours/week)  
Casual paid employee (i.e., seasonal worker)  
Full-time student  
Part-time student  
Laid off due to the pandemic (how long, in months)  
\_\_\_\_\_  
Stay-at-home caregiver (how long, in months)  
\_\_\_\_\_  
Unemployed not due to the pandemic (how long, in months)  
\_\_\_\_\_  
Working from home (how long, in months)  
\_\_\_\_\_  
Working from a place of business (how long, in months)  
\_\_\_\_\_  
Other (please specify):
20. Please specify your **current** job status (**select all that apply**):  
Full-time paid employee (30-40+ hours/week)  
Part-time paid employee (15-29 hours/week)  
Part-time paid employee (<15 hours/week)  
Casual paid employee (i.e., seasonal worker)  
Full-time student  
Part-time student  
Laid off due to the pandemic (how long, in months)  
\_\_\_\_\_  
Stay-at-home caregiver (how long, in months)  
\_\_\_\_\_  
Unemployed not due to the pandemic (how long, in months)  
\_\_\_\_\_  
Working from home (how long, in months)  
\_\_\_\_\_  
Working from a place of business (how long, in months)

Other (please specify): \_\_\_\_\_

21. Were you considered an essential worker at any point during the first 9 months of the COVID-19 pandemic (i.e., mid-March to mid-December)? **(An essential worker is defined as someone who continues to work during the pandemic because their job is critical to preserving life, health, and societal functioning, this includes, but is not limited to, health care workers, first responders, critical infrastructure workers, hydro and natural gas, food or customer service worker, public transportation worker, and workers who are essential to supply society with critical goods such as food and medicine).**

Yes

No

22. Please specify your current occupation as an essential worker: **(Ask for those who indicate they are an essential worker)**

Health care worker

Police officer

Firefighter

Paramedic

Food or customer service worker (e.g., grocery, accounting, construction, etc.)

Public transportation worker (e.g., cab/uber/bus driver, flight attendant, etc.)

Infrastructure worker

Hydro and natural gas worker

Education (e.g., teachers, education administration)

Human services (e.g., daycare/social workers)

Other (please specify): \_\_\_\_\_

23. Please specify your occupation: **(Ask for those who indicate they are not an essential worker)**

Agriculture and natural resources

Hospitality and Tourism (e.g., airlines, housekeeping, guest services, chef, bar/beverage staff, servers)

Human services (e.g., childcare/social workers, hairdressers, spas, therapists, etc.)

Government and public administration

Education and training (e.g., teacher, coaches, education administration)

Information Technology (e.g., computer specialists)

Marketing, Sales, and Services (e.g., real estate, fashion, etc.)

Industrial and Manufacturing (e.g., metalwork, railway, sewing, engineers)

Architecture and construction

Arts and entertainment (e.g., film, writing, theatre, acting)

Other (please specify): \_\_\_\_\_

24. Are you an immediate family member (i.e., parent, spouse/partner, sibling, child) of an essential worker?

Yes

No

25. Who in your family is an essential worker? (select all that apply) **(Ask for those who indicate that they are an immediate family member of an essential worker)**  
Spouse/partner  
Sibling  
Child  
Parent  
Other (please specify): \_\_\_\_\_
26. Please specify the occupation(s) of your immediate family member(s) who are essential workers: (select all that apply) **(Ask for those who indicate that they are an immediate family member of an essential worker)**  
Health care worker  
Police officer  
Firefighter  
Paramedic  
Food or customer service worker (e.g., grocery, accounting, construction, etc.)  
Public transportation worker (e.g., cab/uber/bus driver, flight attendant, etc.)  
Infrastructure worker  
Hydro and natural gas worker  
Education (e.g., teachers, education administration)  
Human services (e.g., daycare/social workers)  
Other (please specify): \_\_\_\_\_
27. How many people live in your household, including you? \_\_\_\_\_
28. Do you have children?  
Yes  
No
29. Are any of your children under the age of 18 and still living in your home?  
Yes  
No
30. Did you have any children doing online learning from home during the first 9 months of the pandemic (mid-March to mid-December)?  
Yes  
No
31. If yes, how long were you been responsible for engaging your children in online learning between mid-March to mid-December (in months)? \_\_\_\_\_
32. If yes, how long were your children doing online learning between mid-March to mid-December (in months)? \_\_\_\_\_

33. Do you live with or have regular contact with anyone who is elderly or immunocompromised?

Yes

No

34. Do you live with your spouse/common-law partner?

Yes

No

No, But I have been quarantining with them

35. Please list everyone that lives in your household (i.e., siblings, parent, child, spouse, etc.)

--

36. Have you tested positive for COVID-19 at any point since the pandemic began in mid-March?

Yes

No

37. Do you personally know someone that has tested positive for COVID-19?

Yes

No

38. Do you personally know someone who has died from COVID-19?

Yes

No

39. How often have you been either reading or watching COVID-19-related news (this could be online, on TV, in the newspaper, etc.)?

Never

Rarely

Often, but not daily

Once per day

Multiple times per day

### Appendix D: Perceptions of Crime Rates and Community Safety

Compared to before the pandemic began, how do you feel that crime in general changed during the first 9 months of the pandemic (from mid-March to mid-December)?

Decreased a lot	Decreased slightly	Remained the same	Increased slightly	Increased a lot
1	2	3	4	5

Compared to before the COVID-19 pandemic began, please rate how you feel each of the following type of crime changed in your region during the first 9 months of the pandemic (mid-March to mid-December).

Decreased a lot	Decreased slightly	Remained the same	Increased slightly	Increased a lot
1	2	3	4	5

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 1. Alcohol (i.e., open container violation, public intoxication, minor possession, boating and underage DUIs, selling and supplying to minors, refusing sobriety test or breathalyzer)   | 1 | 2 | 3 | 4 | 5 |
| 2. Child abuse (i.e., physical, emotional, or sexual maltreatment of a child)  | 1 | 2 | 3 | 4 | 5 |
| 3. Cybercrime (phishing, cyberstalking, harassment online, identity theft, etc.)   | 1 | 2 | 3 | 4 | 5 |
| 4. Domestic abuse (i.e., controlling, coercive, or threatening behaviour, violence, and/or verbal abuse between intimate partners)   | 1 | 2 | 3 | 4 | 5 |
| 5. Drugs (i.e., taken, bought, or sold illegally for non-medical reasons, possession, manufacturing)   | 1 | 2 | 3 | 4 | 5 |
| 6. Financial crimes (i.e., fraud, blackmail, embezzlement, money laundering, tax evasion)  | 1 | 2 | 3 | 4 | 5 |
| 7. Hate crimes (e.g., hate speech, violent or non-violent crime motivated by ethnicity, skin color, sexuality, gender, language, or age)   | 1 | 2 | 3 | 4 | 5 |
| 8. Non-domestic violent crime among strangers or non-intimate individuals (i.e., aggravated assault, murder, manslaughter, sexual assault, kidnapping, forcible confinement, etc.)   | 1 | 2 | 3 | 4 | 5 |
| 9. Property crime (i.e., trespassing, auto theft, burglary, robbery, larceny, shoplifting, arson)  | 1 | 2 | 3 | 4 | 5 |
| 10. Sexual crimes (i.e., pornography, public indecency, misconduct, rape)  | 1 | 2 | 3 | 4 | 5 |
| 11. Terrorism (i.e., someone who is <b>intentionally</b> attempting to cause harm to others (civilians or government) often for political aim)   | 1 | 2 | 3 | 4 | 5 |
| 12. Traffic (i.e., Driving While Impaired (DWIs), accidents, driving with suspended or no license)   | 1 | 2 | 3 | 4 | 5 |
| 13. Trafficking (i.e., illegally transporting people or drugs from one country or area to another for the purpose of forced labour [human trafficking], sexual exploitation [sex trafficking], or to sell [drug trafficking]). | 1 | 2 | 3 | 4 | 5 |

Did you personally experience crime **during the first 9 months of the pandemic (i.e., from mid-March to mid-December)**?

Yes

No

If yes, did you report it?

Yes

No

If no, why did you **not** report it? (**open-ended**)

For respondents who answer “No” to having experienced crime during the first 9 months of the pandemic:

If you had experienced crime during the first 9 months of the pandemic, would you have reported it?

Yes

No

If no, why would you **not** report it? (**open-ended**)

### **Community Safety (Giacomantonio et al., 2019)**

In general, how satisfied were you with your personal safety from crime **prior to the start of the pandemic**?

Very dissatisfied

Dissatisfied

Neither satisfied nor dissatisfied

Satisfied

Very satisfied

In general, how satisfied have you been with your personal safety from crime **during the first 9 months of the pandemic (i.e., from mid-March to mid-December)**?

Very dissatisfied

Dissatisfied

Neither satisfied nor dissatisfied

Satisfied

Very satisfied

How safe did you feel from crime walking alone in your area after dark **prior to the start of the pandemic**? Did you feel ...?

- Very safe
- Reasonably safe
- Somewhat unsafe
- Very unsafe
- Do not walk alone

**[Attention check] Please choose somewhat safe for this question:**

- Very safe
- Reasonably safe
- Somewhat unsafe
- Very unsafe
- Do not walk alone

How safe did you feel from crime walking alone in your area after dark **during the first 9 months of the pandemic (mid-March to mid-December)**? Did you feel ...

- Very safe
- Reasonably safe
- Somewhat unsafe
- Very unsafe
- Do not walk alone

**Compared to before the pandemic began, how do you feel that crime in your neighbourhood changed during the first 9 months of the pandemic (from mid-March to mid-December)?**

- Increased
- Decreased
- Stayed the same
- Just moved into the area/Have not lived in neighbourhood long enough

<b>Prior to the pandemic</b> , in your neighbourhood, how much of a problem were:				
Item	Not a problem at all	A small problem	A moderate problem	A big problem
a. Noisy neighbours or loud parties?				
b. People hanging around on the streets?				
c. Garbage or litter lying around?				
d. Vandalism, graffiti and other deliberate damage to property or vehicles?				
e. People being attacked or harassed because of their skin colour, ethnic origin or religion?				
f. People using or dealing drugs?				
g. People being drunk or rowdy in public places?				

<b>During the first 9 months of the pandemic (mid-March to mid-December), in your neighbourhood, how much of a problem were:</b>				
Item	Not a problem at all	A small problem	A moderate problem	A big problem
h. Noisy neighbours or loud parties?				
i. People hanging around on the streets?				
j. Garbage or litter lying around?				
k. Vandalism, graffiti and other deliberate damage to property or vehicles?				
l. People being attacked or harassed because of their skin colour, ethnic origin or religion?				
m. People using or dealing drugs?				
n. People being drunk or rowdy in public places?				

Do you think having a personal connection to people who have been sick or died from COVID-19 impacts your perception of risk or sense of safety?

Yes

No

**Are there any other crimes you feel have changed since the pandemic began or anything you would like to add about how your community safety has changed that you would like to mention?**

**Appendix E: Attitudes towards police in Canada**  
**(Giacomantonio et al., 2019)**

When you think about your <b>LOCAL POLICE SERVICE</b> during the first 9 months of the <b>COVID-19 pandemic (mid-March to mid-December)</b> , to what extent to do agree or disagree with the following statements?					
Item	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. My local police service treated people fairly					
b. My local police service treated people with respect					
c. My local police service made decisions based on facts					
d. My local police service respected people's rights					
e. My local police service addressed citizen with in a respectful manner and appropriate tone					
f. My local police service showed care and concern for the welfare of the citizens they deal with					
g. My local police service knew how to carry out their official duties properly					
h. My local police service treated you with respect if you had contact with them for any reason					
i. My local police service explained their decisions to the people they deal with					
j. My local police station was an organization with integrity					
k. My local police station was an open and transparent organization					
l. The police treated everyone fairly, regardless of who they are					
m. My local police service treated everyone equally					
n. My local police service provided the same quality of service to all citizens					
o. My local police service enforced the law consistently when dealing with people					
p. My local police service understood the issues that affect this community					

q. My local police service was dealing with the things that matter to people in this community					
r. My local police service could be relied on to be there when you need them					
s. My local police service was sensitive to the needs of different cultures					
t. My local police service generally had the same sense of right and wrong as I do					
u. I generally supported how my local police usually acted					
v. I felt a moral duty to follow police orders					
w. I would have helped my local police if asked					
x. I would have called my local police for assistance					
y. I would have called my local police to report a crime					
z. I would have reported suspicious activity to my local police					
aa. I would have helped my local police by giving evidence in court					

Overall, how would you rate your satisfaction with your **local** police service **prior to the COVID-19 pandemic?**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied

Overall, how would you rate your satisfaction with your **local** police service **during the first 9 months of the pandemic (mid-March to mid-December)?**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied

**[Attention check] Please choose satisfied for this question:**

Very dissatisfied

Dissatisfied

Neither satisfied or dissatisfied

Satisfied

Very satisfied

**Do you have anything else to add about your experiences with police in your area before or during the pandemic?**

**Appendix F: Perceived Stress Scale  
(PSS; Cohen, 1983)**

When responding to the following questions think about how your perceived stress changed from before the pandemic began compared to during the first 9 months of the pandemic (mid-March to mid-December):

A lot less often	Slightly less often	About the same	Slightly more often	A lot more often
<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 1. Compared to before the pandemic started, how often have you been upset because of something that happened unexpectedly?                     | 0 | 1 | 2 | 3 | 4 |
| 2. Compared to before the pandemic started, how often have you felt that you were unable to control the important things in your life?         | 0 | 1 | 2 | 3 | 4 |
| 3. Compared to before the pandemic started, how often have you felt nervous and stressed?  | 0 | 1 | 2 | 3 | 4 |
| 4. Compared to before the pandemic started, how often have you felt confident about your ability to handle your personal problems?             | 0 | 1 | 2 | 3 | 4 |
| 5. Compared to before the pandemic started, how often have you felt that things were going your way?   | 0 | 1 | 2 | 3 | 4 |
| 6. Compared to before the pandemic started, how often have you found that you could not cope with all the things that you had to do?           | 0 | 1 | 2 | 3 | 4 |
| 7. Compared to before the pandemic started, how often have you been able to control irritations in your life?                                  | 0 | 1 | 2 | 3 | 4 |
| 8. Compared to before the pandemic started, how often have you felt that you were on top of things?  | 0 | 1 | 2 | 3 | 4 |
| 9. Compared to before the pandemic started, how often have you been angered because of things that happened that were outside of your control? | 0 | 1 | 2 | 3 | 4 |
| 10. Compared to before the pandemic started, how often have you felt difficulties were piling up so high that you could not overcome them?     | 0 | 1 | 2 | 3 | 4 |

**Please rate your overall perceived stress before the pandemic and during the first 9-months of the pandemic began using the scale below:**

Never stressed	Not often stressed	Occasionally stressed	Often stressed	Always stressed
1	2	3	4	5

In general, how was your overall perceived stress before the pandemic? 1 2 3 4 5

In general, how was your overall perceived stress during the first 9 months of the pandemic? 1 2 3 4 5

**Please rate your overall stress with being exposed to the COVID-19 virus:**

Not Applicable	No Stress at all	Not a lot of stress	Moderate Stress	Quite a bit of stress	Extreme Stress
0	1	2	3	4	5

Concern with being exposed to the virus 0 1 2 3 4 5

Concern with your friends or family members being exposed to the virus 0 1 2 3 4 5

**Are there any other ways that your stress changed during the first 9 months of the pandemic (mid-March to mid-December) that was not already mentioned (i.e., child care, home environment, work, etc.)?**

**[Attention Check]: Please choose a lot less often for this question:**

A lot less often

Slightly less often

About the same

Slightly more often

A lot more often

**Appendix G: General Well-Being Schedule**  
(GWS; Dupuy, 1977)

The following section contains questions regarding your feelings and well-being **during the first 9 months of the COVID-19 pandemic (i.e., from mid-March to mid-December):**

1. How have you been feeling in general?

In very low spirits	In low spirits mostly	I have been up and down in spirits a lot	In good spirits mostly	In very good spirits	In excellent spirits
1	2	3	4	5	6

2. Have you been bothered by nervousness or your ‘nerves’?

Not at all	A little	Some – enough to bother me	Quite a bit	Very much so	Extremely so
1	2	3	4	5	6

3. Have you been in firm control of your behavior, thoughts, emotions, or feelings?

No, and I am very disturbed	No, and I am somewhat disturbed	Not too well	Generally, so	Yes, for the most part	Yes, definitely so
1	2	3	4	5	6

4. Have you felt so sad, discouraged, hopeless, or had so many problems that you wondered if anything is worthwhile?

Not at all	A little	Some – enough to bother me	Quite a bit	Very much so	Extremely so
1	2	3	4	5	6

5. Have you been under or felt you were under any strain, stress, or pressure?

Not at all	Yes a little	Yes some but about usual	Yes some more than usual	Yes quite a bit of pressure	Yes almost more than I could bear
1	2	3	4	5	6

6. How often have you been happy, satisfied, or pleased with your personal life?

Very dissatisfied	Somewhat dissatisfied	Satisfied	Fairly happy	Very happy	Extremely happy
-------------------	-----------------------	-----------	--------------	------------	-----------------

1	2	3	4	5	6
---	---	---	---	---	---

7. How often have you had any reason to wonder if you were losing your mind, or losing control over the way you act, talk, think, feel, or of your memory?

Not at all	Only a little	Some but not enough to be concerned	Some and a little concerned	Some and quite concerned	Yes very much so and very concerned
1	2	3	4	5	6

8. Have you been anxious, worried, or upset?

Not at all	A little bit	Some, enough to bother me	Quite a bit	Very much so	Extremely so
1	2	3	4	5	6

9. Have you been waking up fresh and rested?

None of the time	Rarely	Less than half the time	Fairly often	Most every day	Every day
1	2	3	4	5	6

**Please answer questions 10-14 using the following scale:**

None of the time	A little of the time	Some of the time	A good bit of the time	Most of the time	All of the time
1	2	3	4	5	6

10. Have you been bothered by any illness, bodily disorder, pains, or fears about your health?  
 11. Has your daily life been full of things that were interesting to you?  
 12. Have you felt downhearted and blue?  
 13. Have you been feeling emotionally stable and sure of yourself?  
 14. Have you felt tired, worn out, used-up, or exhausted?

15. \*How concerned or worried about your health have you been?

**Not concerned at all** **Very concerned**  
 Scale: 1    2    3    4    5    6    7    8    9    10

16. How relaxed or tense have you been?

**Very relaxed** **Very tense**  
 Scale: 1    2    3    4    5    6    7    8    9    10

17. How much energy, pep, or vitality have you felt?

**No energy at all** **Very energetic**  
 Scale: 1    2    3    4    5    6    7    8    9    10

18. \*How depressed or cheerful have you been?

Very depressed  
 Scale: 1 2 3 4 5 6 7 8 9 10  
 Very cheerful  
 \*Reverse code

Using the following scale to answer questions 19 and 20 regarding overall well-being:

Very dissatisfied	Somewhat dissatisfied	Neither dissatisfied or satisfied	Somewhat satisfied	Very satisfied
1	2	3	4	5

19. Prior to the COVID-19 pandemic, how satisfied were you with your overall well-being?

1 2 3 4 5

20. During the first 9 months of the pandemic, how satisfied were you with your overall well-being?

1 2 3 4 5

Were there any other experiences that impacted your overall well-being during the first 9 months of the pandemic?

**[Attention check] Please choose the word satisfied for this question:**

Very dissatisfied

Somewhat dissatisfied

Neither satisfied or dissatisfied

Somewhat satisfied

Very satisfied

**For people who indicated they were working part time/full time/from home etc. at any point during the first nine months of the pandemic**

### **Appendix H: The Brief Job Stress Questionnaire**

#### **BJSQ English version**

Please answer the following questions concerning your job **during the first 9 months of the pandemic (from mid-March to mid-December)** by selecting the number that best fits your situation.

<b>Not at all</b>	<b>Somewhat</b>	<b>Moderately so</b>	<b>Very much so</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

1. I have an extremely large amount of work to do ----- 1 2 3 4
2. I can't complete work in the required time ----- 1 2 3 4
3. I have to work as hard as I can ----- 1 2 3 4
4. I have to pay very careful attention ----- 1 2 3 4
5. My job is difficult in that it requires a high level of knowledge and technical skill ----- 1 2 3 4
6. I need to be constantly thinking about work throughout the working day ----- 1 2 3 4
7. My job requires a lot of physical work ----- 1 2 3 4
8. I can work at my own pace ----- 1 2 3 4
9. I can choose how and in what order to do my work ----- 1 2 3 4
10. I can reflect my opinions on workplace policy ----- 1 2 3 4
11. My knowledge and skills are rarely used at work ----- 1 2 3 4
12. There are differences of opinion within my department ----- 1 2 3 4
13. My department does not get along well with other departments ----- 1 2 3 4
14. The atmosphere in my workplace is friendly ----- 1 2 3 4
15. My current working environment is poor (e.g. noise, lighting, temperature, ventilation) 1 2 3 4
16. This job suits me well ----- 1 2 3 4
17. My job is worth doing ----- 1 2 3 4

**Overall, how did your job stress change during the first 9 months of the pandemic (mid-March to mid-December) compared to before the pandemic began?**

<b>Decreased a lot</b>	<b>Decreased slightly</b>	<b>Remained the same</b>	<b>Increased slightly</b>	<b>Increased a lot</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**Anything else you would like to comment on about how your job, or job stress, changed during the first 9-months of the pandemic (mid-March) to (mid-December) compared to before the pandemic began? (open-ended)**

Please answer the following questions concerning your health **during the first 9 months of the pandemic (mid-March to mid-December)** by selecting the number that best fits your situation.

Almost never	Sometimes	Often	Almost always
1	2	3	4

18. I have been very active ----- 1 2 3 4
19. I have been full of energy ----- 1 2 3 4
20. I have been lively ----- 1 2 3 4
21. I have felt angry ----- 1 2 3 4
22. I have been inwardly annoyed or aggravated ----- 1 2 3 4
23. I have felt irritable ----- 1 2 3 4
24. I have felt extremely tired ----- 1 2 3 4
25. I have felt exhausted ----- 1 2 3 4
26. I have felt weary or listless ----- 1 2 3 4
27. I have felt tense ----- 1 2 3 4
28. I have felt worried or insecure ----- 1 2 3 4
29. I have felt restless ----- 1 2 3 4
30. I have been depressed ----- 1 2 3 4
31. I have thought that doing anything was a hassle ----- 1 2 3 4
32. I have been unable to concentrate ----- 1 2 3 4
33. I have felt gloomy ----- 1 2 3 4
34. I have been unable to handle work ----- 1 2 3 4
35. I have felt sad ----- 1 2 3 4
36. I have felt dizzy ----- 1 2 3 4
37. I have experienced joint pains----- 1 2 3 4
38. I have experienced headaches ----- 1 2 3 4
39. I have had a stiff neck and / or shoulders ----- 1 2 3 4
40. I have had lower back pain ----- 1 2 3 4
41. I have had eyestrain ----- 1 2 3 4
42. I have experienced heart palpitations or shortness of breath ----- 1 2 3 4
43. I have experienced stomach and / or intestine problems ----- 1 2 3 4
44. I have lost my appetite ----- 1 2 3 4
45. I have experienced diarrhea and / or constipation ----- 1 2 3 4
46. I haven't been able to sleep well ----- 1 2 3 4

Please answer the following questions based on your health changed **during the first 9 months of the pandemic (mid-March to mid-December)** compared to before the pandemic began:

Decreased a lot	Decreased slightly	Remained the same	Increased slightly	Increased a lot
1	2	3	4	5

Overall, how has your physical health changed? 1 2 3 4 5

Overall, how has your mental health changed? 1 2 3 4 5

**Anything else you would like to comment on about how your health, both physical and mental, changed during the first 9 months of the pandemic (mid-March to mid-December) compared to before the pandemic began (open-ended)**

Please answer the following questions concerning satisfaction **during the first 9 months of the pandemic (mid-March to mid-December)** by selecting the number that best fits your situation.

Dissatisfied	Somewhat dissatisfied	Somewhat satisfied	Satisfied
1	2	3	4

53. I am satisfied with my job ----- 1 2 3 4

54. I am satisfied with my family life ----- 1 2 3 4

**Please rate the degree to which you agree or disagree with the following statements:**

Not applicable	Strongly disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Strongly agree
0	1	2	3	4	5

I have proper training of COVID-19 protocol to do my job safely 0 1 2 3 4 5

I have adequate personal protective equipment (PPE) to do my job safely 0 1 2 3 4 5

**[Attention Check]:** Please choose remained the same for this question

Decreased a lot

Increased slightly

Increased a lot

Remained the same

Decreased slightly

**Would you like to share any other experiences related to COVID-19 that have affected your safety, well-being, or about crime in general that has not been mentioned in the survey:**

**Table 6***Subscales of the BJSQ*

Question Number	Subscale
Questions Concerning Job	
Q1, Q2, Q3	Quantitative Job Overload
Q4, Q5, Q6	Qualitative Job Overload
Q7	Physical Demands
Q8, Q9, Q10	Job Control
Q11	Skill Utilization
Q12, Q13, Q14	Interpersonal Conflict
Q15	Poor Physical Environment
Q16	Suitable Jobs
Q17	Meaningfulness of Work
Questions Concerning Health	
Q18, Q19, Q20	Vigor
Q21, Q22, Q23	Anger-Irritability
Q24, Q25, Q26	Fatigue
Q27, Q28, Q29	Anxiety
Q30 ...Q35	Depression
Q36, Q37...Q46	Physical Stress Reaction
Questions Concerning Satisfaction	
Q53	Job Satisfaction
Q54	Satisfaction with Family Life

**COVID-19 Vaccine**

1. How effective do you think federally-approved COVID-19 vaccines are?

Not at all effective	Slightly effective	Somewhat effective	Moderately effective	Extremely effective
1	2	3	4	5

2. How safe do you feel federally-approved COVID-19 vaccines are?

Not at all safe	Slightly safe	Somewhat safe	Moderately safe	Extremely safe
1	2	3	4	5

3. Are you planning to get a COVID-19 vaccine when it becomes available to you?

I have already gotten at least one dose of the COVID-19 vaccine

Yes

No

4. Please rate on the following scale how likely you are to get a COVID-19 vaccine when it becomes available to you.

Extremely unlikely	Very unlikely	Somewhat likely	Very likely	Extremely likely	I have already gotten at least one dose of the COVID-19 vaccine
1	2	3	4	5	6

5. Do you think a COVID-19 vaccine should be mandatory for all Canadians (unless an exception has to be made for health reasons)?

Yes

No

6. In general, how is your overall perceived stress since the development of a COVID-19 vaccine?

Never stressed	Not often stressed	Occasionally stressed	Often stressed	Always stressed
1	2	3	4	5

7. Since the development of a COVID-19 vaccine, how satisfied have you been with your overall well-being?

Very dissatisfied	Somewhat dissatisfied	Neither dissatisfied or satisfied	Somewhat satisfied	Very satisfied
1	2	3	4	5

8. Overall, how has your job stress changed since the development of a COVID-19 vaccine?

Decreased a lot	Decreased slightly	Remained the same	Increased slightly	Increased a lot
1	2	3	4	5

Anything else you would like to comment on about a COVID-19 vaccine? (open-ended)

--

Please add any other information in the space provided that you feel is relevant to this survey:

--

## Appendix I: Debriefing Form

**Name and Contact Information of Researchers:** Siobhan Green

**Tel.:** 613-813-9099

**Email:** Siobhan.Green@ontariotechu.ca

**Supervisor and Contact Information:** Karla Emeno (Karla.Emeno@ontariotechu.ca)

**Research Study Name:** Perceptions of Public Safety and Well-Being during COVID-19 Pandemic

### **What are we trying to learn in this research?**

We would like to thank you for participating in this study. Your time and efforts are greatly appreciated! To reiterate, the purpose of this study was to understand the perceptions of well-being and public safety since the onset of the COVID-19 pandemic. We would like to remind you that your information will remain confidential and submitted responses cannot be deleted (due to the anonymous nature of the participation).

This research examines questions such as: Is there a change in public safety, crime rates, and well-being of participants? Is that changed influenced by being an essential worker or not? How has job stress changed since the COVID-19 pandemic began? How has the perception of community safety and the police changed since the pandemic began? In general, we predict that the perceptions of crime rates from before to during the COVID-19 pandemic will change, but it will be dependent on crime type. As well, we predict that job stress will increase due to the COVID-19 pandemic. Further, we predict that community safety will decrease due to the COVID-19 pandemic and perceptions of police will change, but the direction of the change is unknown.

### **What if I have questions later?**

If you have any remaining concerns, questions, or comments about the experiment, please contact Karla Emeno (Principal Investigator, Faculty Supervisor), at: karla.emeno@ontariotechu.ca (905-721-8668, ext. 5972), or Siobhan Green (Master's Student), at: Siobhan.green@ontariotechu.ca.

### **Concerns:**

Is there anything I can do if I found this experiment to be emotionally upsetting? Yes. If you experience any distress or anxiety after participating in this study, please feel free to contact the numerous 24-hour telephone help line resources that are available, such as Telehealth Ontario at 1-866-797-0000 (toll free) and Good2Talk (1-866-925-5454). Any questions regarding your rights as a participant, complaints, or adverse events may be addressed to the Ontario Tech University Research Ethics Board through the Research Ethics Coordinator at researchethics@uoit.ca or 905-721-8668 x 3693.

This study has been approved by the Ontario Tech University Research Ethics Board (REB #16109 on December 17th, 2020).

**Thank you for taking the time to participate in this study!**

**Appendix J: Attention Checks**

1. Please choose **yes** for this question:  
Not applicable  
Yes  
No  
Maybe
2. Please choose **somewhat safe** for this question:  
Very safe  
Reasonably safe  
Somewhat unsafe  
Very unsafe  
Do not walk alone
3. Please choose **agree** for this question:  
Strongly disagree  
Disagree  
Neither agree nor disagree  
Agree  
Strongly agree
4. Please choose **a lot less often** for this question:  
A lot less often  
Slightly less often  
About the same  
Slightly more often  
A lot more often
5. Please choose **satisfied** for this question:  
Very dissatisfied  
Somewhat dissatisfied  
Neither satisfied or dissatisfied  
Somewhat satisfied  
Very satisfied
6. Please choose **remained the same** for this question  
Decreased a lot  
Increased slightly  
Increased a lot  
Remained the same  
Decreased slightly