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Impacts of COVID-19 Related Changes in Income on Women Experiencing Intimate Partner Violence at Home

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A thesis submitted in partial fulfillment of the requirements for the Master of Science degree in Health and Rehabilitation Sciences

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Abstract

Introduction: Intimate partner violence (IPV) has increased in Canada due to COVID-19 and associated public health measures. Economic status may be responsible, but this must be validated during COVID-19.

Methods: An online survey was administered to 23 Canadian women to measure their income pre and during COVID-19 and their experiences of IPV in the past 12 months. Factorial ANOVAs and MANOVAs were used to explore the relationship between income and IPV.

Results: Of women responding to both timepoints, 56.5% (n=13) indicated an increase in IPV. Analyses did not suggest that income was significantly related to IPV, apart from the effect of CERB (governmental economic stimulus) when interacting with income change on IPV pre-COVID-19 ($p=.03412$).

Conclusion: Economic status is insufficient in explaining IPV, but CERB combined with income change provides evidence of the relationship between IPV and economic status. Additional research is required to identify risk and protective factors for IPV in this context.

Keywords

Intimate partner violence, income, COVID-19, women, gender-based violence, socio-economic status

Summary for Lay Audience

Introduction: During the COVID-19 pandemic, there has been an increase in reports of intimate partner violence (IPV) in Canada. IPV is a form of gender-based violence that includes any form of physical, sexual, or emotional abuse within the context of coercive control perpetrated by an intimate partner. Public health responses, such as social distancing and lockdowns, have resulted in an economic recession which has led to a loss of income for many women, given their historic and continued marginalization in workforce participation. Previous research suggests that changes in income may be responsible for increased IPV, but this has yet to be validated in the context of COVID-19.

Methods: An online quantitative survey was administered to 23 Canadian women at a single timepoint to measure their income prior to (retrospectively) and during COVID-19 (presently) and their experiences of IPV in the past 12 months. Statistical tests were employed to determine whether different measures of income (household salary, personal monthly income, or receiving the Canadian Emergency Response Benefit) affected IPV of any form (sexual, physical, or psychological).

Results: Of women who responded to IPV measures prior to and during COVID-19, 56.5% (n=13) indicated an increase in abuse experienced. Statistical tests provided insufficient evidence to suggest that there was a relationship between level of IPV experienced COVID-19 and income change; this remained true when household annual income was introduced to the relationship. However, there was a statistically significant effect of income change when permitted to interact with CERB on pre-COVID-19 IPV, providing evidence of the relationship between IPV and economic circumstance.

Conclusion: Overall, these results indicate that income is insufficient in explaining IPV however, economic stimulus may play a role. Future research is required to identify risk and protective factors for increased IPV to inform an effective public health response for the remainder of COVID-19 and aid preparation for the next pandemic. It would be valuable to examine financial stress and abuser income in future work.

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Impacts of COVID-19 Related Changes in Income on Women Experiencing Intimate Partner Violence at Home

1 Introduction and Overview

1.1 Intimate Partner Violence in the Era of COVID-19

As the world continues to grapple with the COVID-19 pandemic, governments have imposed rigid public health measures to prevent the spread of disease and protect the population. In North America, masks and distancing measures have been the primary public health regulations used to reduce disease transmission (Cardenas et al., 2020; Crasta et al., 2020; Mohler et al., 2020). Distancing measures include limitations on proximity to others (i.e., remaining six feet apart or more from others), restrictions on the number of people allowed at indoor and outdoor gatherings, orders to stay-at-home (i.e., cannot exit the home for non-essential purposes), and restricted business operations (i.e., limited hours or closure) (Mohler et al., 2020). While these actions were (and remain) necessary to reduce the spread of the deadly COVID-19 virus, unintended consequences for marginalized populations, namely, women who experience gender-based violence (GBV), specifically, intimate partner violence (IPV) are emerging (Slakoff et al., 2020; van Gelder et al., 2020; Viveiros & Bonomi, 2020).

GBV is understood as any form of sexual, physical, mental, or economic harm directed at a person based on their gender and is known to increase during times of crisis (United Nations High Commissioner for Refugees, 2021). In particular, IPV, a specific form of GBV, is prevalent in emergency contexts. IPV is any form of physical, sexual, or emotional abuse within the context of coercive control perpetrated by an intimate partner (Davies et al., 2015; Tjaden & Thoennes, 2000; United Nations High Commissioner for Refugees, 2021). As discussed by Lee et al. (2020), Thomas et al. (2020), and Wenham et al. (2020), there has been an increase in the incidence of IPV since the inception of COVID-19 and associated public health regulations; the change in incidence was relatively predictable as collective emergencies are well-evidenced to result in increased rates of IPV (World Health Organization, 2020). This is because emergencies can intensify existing gendered patterns of disparities and marginalization; as a result, women are

disproportionately exposed to adverse health, social, and economic outcomes from COVID-19 and associated public health measures, including increased risk of IPV. At the time of writing (April 2021), stay-at-home orders have affected 80% of the world's population, including billions of women (Papadimos, 2020). Concerningly, the United Nations, as described by Connor et al. (2020), has estimated that an excess of 15 million cases of gender-based violence will occur globally for every three months that stay-at-home restrictions continue, which culminates to 80 million at present (June 2021). Considering that early estimates suggest that an effective public health response will require intermittent social distancing until at least 2022, IPV is a significant and growing public health concern, particularly within the current pandemic and inevitability of future public health crises (Crasta et al., 2020).

1.2 Economic Repercussions of COVID-19

Widespread, long-term stay-at-home orders have also led to substantial reductions in economic activity around the world (Diffenbaugh et al., 2020). Non-essential businesses have been forced to pause and/or restrict operations, while essential businesses face reduced hours of operation and limited capacity (Government of Ontario, 2020). As such, the working class is grappling with reduced hours and/or pay, or in the worst cases, unemployment; ultimately this has contributed to a global recession (Tran et al., 2020; Viswanath & Mullins, 2020; Zvolensky et al., 2020). Canada's unemployment rate reached 13% in April 2020 at the beginning of COVID-19 stay-at-home measures, nearly three times that of the rate of April 2019 (Statistics Canada, 2020).

1.3 Socio-Economic Vulnerability and Intimate Partner Violence

The relationship between IPV and economic status has been studied extensively. Most researchers agree that individual and economic hardship can induce exceptional stress, which is known to put women at higher risk of IPV; as such, the devastating economic impacts of COVID-19 have generated acute, widespread concern for the well-being of women (Friedline et al., 2020; Kaukinen, 2020; Lange et al., 2020; Leslie & Wilson, 2020; Luetke et al., 2020; Medel-Herrero et al., 2020; Miller & Blumstein, 2020; Papadimos, 2020; Roesch et al., 2020; Sharma & Borah, 2020; Stanley & Markman, 2020;

Tran et al., 2020; van Gelder et al., 2020; Wenham et al., 2020; Wilcox et al., 2020). Unfortunately, even prior to COVID-19, women experienced poorer employment outcomes, with less workforce participation than men (Wilcox et al., 2020). Moreover, working women often get fewer hours and/or earn less money than their male counterparts, thus establishing them as disproportionately prone to severe economic deprivation (Wilcox et al., 2020). Viswanath and Mullins (2020) reported that women make up 64% of the 40 lowest-paying jobs, thus positioning women as particularly vulnerable to an economic recession. In the wake of COVID-19, women are even more financially vulnerable because they are more likely to be employed in sectors prone to layoffs during times of crisis (hospitality, travel, education, and retail; Wenham et al., 2020). In addition, women are also more likely to stop work for childcare duties due to school closures, thus exacerbating existing financial insecurity (Ryan & El Ayadi, 2020; Wenham et al., 2020). Considering that the Center for Global Development reported that Canadian children missed 89% of in-person schooling from February 2020 to February 2021, women are likely disproportionately dropping out of the workforce (Evans et al., 2021). Overall, these circumstances can create economic dependence on partners, a known risk factor for IPV (Kaukinen, 2020; Medel-Herrero et al., 2020; Rauhaus et al., 2020; Zvolensky et al., 2020).

It is important to note that securing a stable, well-paying job is insufficient to protect women from experiencing IPV. In some cases, when women earn more money than their abusive partners, this can provoke violence from them. For example, some abusers will interfere with their partner's employment by causing her to be late for or miss work or by showing up at her work to harass and embarrass her (Conner, 2014). Overall, the abuser seeks to interfere with their partners' ability to continue to participate in the workforce to gain control and limit her financial independence (and thus, her ability to exit the relationship) (Conner, 2014; Kaukinen, 2020; Wilcox et al., 2020). Another avenue for abusers includes when the abuser does not interfere with their partner's employment, but instead prevents them from using the economic resources that come from it (Conner, 2014). This can manifest through limited access to money, liquidating bank accounts, controlling their partner's credit card usage, and more (Conner, 2014). As such, women's economic mobility may be limited long after she exits a violent relationship, as re-building one's financial assets, especially one's credit rating, takes time. A poor credit score can limit a

woman's access to a car and/or education loans, housing, and jobs that rely on handling money for years (Conner, 2014). Moreover, if a woman's partner experiences economic stress, they are more likely to act violently towards her (John et al., 2020; Medel-Herrero et al., 2020). In fact, Kaukinen (2020) reported that women with an unemployed partner are at the greatest risk of experiencing abuse during COVID-19 due to their partner's increased economic stress. Evidently, there are many forces at play that complicate a woman's economic circumstances in the context of IPV, as while financial independence can be beneficial in escaping one's abuser, it can simultaneously increase the risk of experiencing IPV due to perceived threat by the abuser. It can be concluded that abusers looking to extend their coercive control may use their partner's finances (or their lack thereof) to do so.

The socio-economic vulnerability of women at risk of IPV cannot be ignored (Schaaf et al., 2020). Without financial resources, leaving an abusive relationship can be extremely difficult (Stanley & Markman, 2020). During COVID-19, the risk of experiencing abuse is at an all-time high, while a woman's ability to leave may be severely compromised due to her economic circumstances and stay-at-home orders (John et al., 2020; Kaukinen, 2020; Ryan & El Ayadi, 2020). In March 2020, when Canada first implemented public health regulations in response to COVID-19, shelters for women escaping violence were deemed essential (DeClerq, 2020; House of Commons of Canada, 2020). However, shelters had mere days to secure personal protective equipment and develop new protocols in alignment with strict public health regulations for remaining open. Some shelters lost staff due to regulations preventing staff from working at two shelters at the same time (Ireton, 2020). Early evidence has emerged corroborating these predictions of increased IPV, as reports from specialized crisis lines in Canada have seen up to a 300% increase in calls and police departments have reported over a 20% increase in domestic incidents and assault reports (Bradley et al., 2020; Slakoff et al., 2020). Evidently, the rapidly intensifying economic conditions caused by COVID-19 public health measures have led to a disturbing level of risk for women experiencing IPV in Canada; however, there remains a need to specifically measure this impact. Until then, decision-makers (i.e., policymakers and public health officials) must rely on generalizations from global data.

After examining statistics from countries around the world, Sharma and Borah (2020) stated that the economic distress indirectly caused by COVID-19 is the most significant condition contributing to the global surge in IPV. Accordingly, Rangel et al. (2020) have called for research that studies the socio-economic effects of current public health responses on marginalized communities, such as women. This is further supported by Ryan and El Ayadi (2020) and Wilcox et al. (2020), who have declared that equity-based research that prioritizes the experiences of women and measures socio-economic status is vitally important at this time. Several researchers have called for gender-informed decisions and policymaking, however, this requires the availability of gender-informed data to draw from (Connor et al., 2020; Lee et al., 2020; Ryan & El Ayadi, 2020; Wenham et al., 2020; Wilcox et al., 2020). Accordingly, this thesis works to help fulfill the need for information about how the economic circumstances of COVID-19 have impacted Canadian women's experiences of abuse in a time of unprecedented risk.

2 Literature Review

To gain perspective regarding the state of the current literature surrounding COVID-19, IPV, and income, an integrative literature review was conducted.

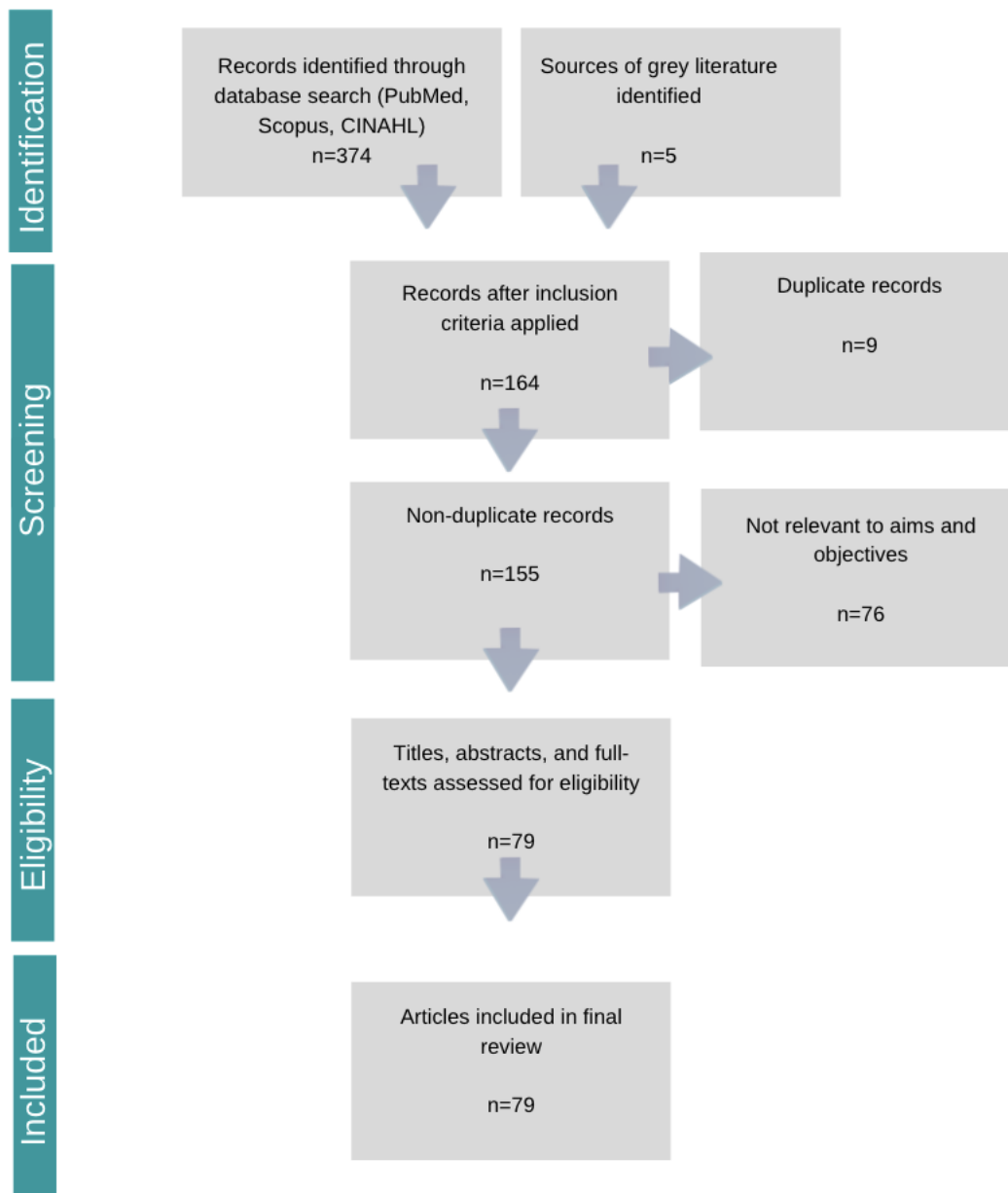
2.1 Methodology

An integrative literature review aims to summarize existing literature to provide a thorough understanding of an identified phenomenon with direct implications for practice and policy (Whittemore & Knafl, 2005). A comprehensive integrative review employs five stages of review: problem identification, literature search, data evaluation, data analysis, and presentation (Whittemore & Knafl, 2005). The problem identified to justify this review was a lack of understanding of how economic circumstances associated with COVID-19 impacted women's experiences of IPV in Canada. The literature search itself earns rigour when well-defined and thorough (Whittemore & Knafl, 2005); accordingly, the literature search protocol was fully documented. The stage of data evaluation is dedicated to understanding the quality of the evidence. In cases with diverse empirical sources, such as this review, it is recommended that sources representing outliers (i.e., results that contradict the majority of the evidence) be identified (Whittemore & Knafl, 2005). The goal of the data analysis stage is to thoroughly interpret primary sources and provide a synthesis of the evidence (Whittemore & Knafl, 2005). This can be achieved through the constant comparison method, where extracted data is first converted into systematic categories and then compared in order to synthesize similar data in groups (Whittemore & Knafl, 2005); effectively, this is a form of thematic analysis. The presentation stage aims to demonstrate a logical chain of evidence of the findings, which can be achieved using descriptive text (Whittemore & Knafl, 2005).

To conduct the literature search, the PubMed, Scopus, and CINAHL databases were used to identify peer-reviewed outputs related to intimate partner violence, COVID-19, and income. These databases were intentionally selected because they support Boolean operators or MeSH text and are known to include a wide array of health-related content; thus, these databases are likely to provide a thorough, yet specific picture of the state of the literature. The following keywords were applied within the aforementioned databases on October 2, 2020: ("domestic violence" OR "intimate partner violence" OR "violence

against women" OR "gender-based violence") AND (income OR econom* OR socioeconom*) AND (coronavirus OR "novel coronavirus" OR "covid-19" OR "sars-cov-2" OR "2019-ncov" OR "Wuhan coronavirus" OR "Wuhan virus"). This returned a total of 374 articles. In addition, due to the rapid and political nature of COVID-19, five sources of grey literature from international, federal, and provincial sources were consulted to contextualize scholarly findings and ensure the recency of the data (Allan & Jaffray, 2020; Attorney General, 2020; Statistics Canada, 2020; UN Women, 2020; World Health Organization, 2020). Next, results that were not available in English, published within the last ten years, relevant to the North American context, nor offered a full-text version through the university's access network were removed. The results were geographically confined to North America to assume and respect socio-cultural understandings of intimate partner violence, as well as political responses to violence and COVID-19. After the application of the aforementioned filters, 159 articles remained. Duplicates were then removed, resulting in a total of 150 distinct scholarly works. Then, the abstract of each article was screened for relevance to the research topic. This resulted in a total of 79 studies included in the final review (see Figure 1 below). Removed articles are listed in Appendix A. It should be noted that articles-in-press were deliberately included in this review due to the rapidly evolving nature of COVID-19 juxtaposed against the potentially lengthy publication process.

Figure 1.

PRISMA Diagram of Literature Search Process

2.2 Data Evaluation and Analysis

Data evaluation required the identification of outliers; thus, this step was conducted in tandem with data analysis as outliers are only identifiable when juxtapositioned with

the broader evidence (Whittemore & Knafl, 2005). Data analysis was facilitated by reading each of the manuscripts in full, identifying and extracting data relevant to intimate partner violence, COVID-19, and income, and synthesizing similar data to identify broad themes. Initially, a deductive approach was taken to organizing data under the categories of IPV during COVID-19, income/economy during COVID-19, and IPV and income/economy. This deductive approach was employed to ensure maximum relevancy to the identified problem, while the neutral positioning of these themes aimed to mitigate bias; for example, data that identified an increase in IPV during COVID-19, and data that identified a decrease in IPV during COVID-19, would both fall under the theme IPV during COVID-19. After careful reading and note-taking of each article under the prescribed categories, the data within each category theme was compiled and analyzed to synthesize the core phenomenon present within each theme. Ultimately, this led to the identification of three core themes: 1) ecological intensification of economic stress; 2) structural violence and compounded risk, and 3) financial barriers to safety.

2.2.1 Ecological Intensification of Economic Stress

The global economic recession began in March 2020, primarily because of social distancing measures deployed as a key method of defense against the spread of COVID-19 (Viswanath & Mullins, 2020). This period was accompanied by record levels of unemployment and financial insecurity (Best, 2020; Viswanath & Mullins, 2020; Zhang et al., 2020; Zvolensky et al., 2020). At a societal level, economists have anticipated a sharp V-shaped recovery, while others anticipate permanent, widespread damage (Best, 2020). This has caused extreme population-level stress as governments attempt to balance protecting public health with stimulating the economy (Miller & Blumstein, 2020). As a result of a declining economy, increases in unemployment rates have been noted— a known precipitator for increases in IPV (Hunnicut, 2020; Miller & Blumstein, 2020; Roesch et al., 2020; Wilcox et al., 2020). In particular, male unemployment has reached record levels according to Kaukinen (2020), who also warns that women are at the highest risk of IPV when their male partner is unemployed. Overall, these conditions may intensify violence in existing abusive relationships and/or act as a catalyst to abuse in a previously non-violent relationship.

At a personal level, increased financial stress is known to increase women's risk of experiencing IPV (Coop Gordon & Mitchell, 2020; Hudson et al., 2020). Given that many members of the workforce may be experiencing job insecurity, working fewer hours for less pay, or experiencing unemployment with poor job prospects due to the indirect effects of COVID-19, there is ample opportunity for people to experience acute financial stress that may precipitate violence (Kaukinen, 2020; Leslie & Wilson, 2020). What is even more troubling is that the longer employment conditions remain unfavorable, the more financial strain increases, and thus the risk of violence may escalate accordingly (Stanley & Markman, 2020). Evidently, economic stress has permeated society at both the societal and individual levels, which jeopardizes the health and safety of women who experience violence at home due to the potential for increased IPV. Given the time of the literature review, data confirming the link between economic conditions and stress and increased IPV was not yet available; as such, this relationship is speculative in the context of COVID-19.

2.2.2 Structural Violence and Compounded Risk

The prolonged stay-at-home orders have narrowed women's access to social support and resulted in feelings of isolation. Isolation and economic stress interact to compound the risk of IPV for women, as they are confined in proximity to their abuser during a period of heightened financial strain (Coop Gordon & Mitchell, 2020; Kaukinen, 2020; Power et al., 2020). Abusers having continuous, uninterrupted access to and control over their partner allows the abuser to increase their coercive control to escalate all forms of abuse (Boman & Gallupe, 2020; Piquero et al., 2020), including financial. Walters (2020) stated that when abusers lose control over other parts of their life, such as being forced to isolate and/or the loss of their job, they may compensate by exerting more coercive control and acting more violently towards their partners. Abusers thrive when they can isolate their partners; logically, they are likely to take advantage of COVID-19 circumstances to trap their partners at home, take over their finances, and/or force them to quit their jobs (Sharma & Borah, 2020; Slakoff et al., 2020; van Gelder et al., 2020). Forced isolation clearly has the potential to aggravate an already tense home situation due to

unprecedented economic stress, making a woman's home one of the most dangerous places to be (Kaukinen, 2020).

It is also known that increased stressors can result in increased abuse in violent relationships (Papadimos, 2020); during this period of increased stress, COVID-19 public health measures have limited access to many traditional coping mechanisms (i.e., visiting and/or going out with friends/family, exercising at the gym, participating in religious services, etc.). In particular, isolation, close quarters, financial strain, and increased childcare responsibilities as stressors can prompt an abuser to cope through substance use, which may increase the potential for acts of violence at home (Jurcik et al., 2020; Kaukinen, 2020; Lange et al., 2020; Papadimos, 2020; Power et al., 2020; Rangel et al., 2020; Rolland, 2020; Stanley & Markman, 2020; Vostanis & Bell, 2020; Zhang et al., 2020; Zvolensky et al., 2020). There is debate in the literature as to whether substance use is a direct cause of IPV, with inconsistent evidence of predictive abilities (Kaukinen, 2020; Lange et al., 2020). Nevertheless, scholars agree that substance use is a common contributor to increased frequency and/or severity of violence (Jarnecke & Flanagan, 2020; Kaukinen, 2020; Lange et al., 2020; Piquero et al., 2020; Stockwell et al., 2021). Similarly, Zvolensky and colleagues (2020) have noted that increases in IPV can both stem from substance use, while also intensifying existing substance use. Both Rolland (2020) and Kaukinen (2020) have confirmed increased substance use, especially alcohol, in America during COVID-19, which has increased the risk of abuse for women in violent relationships. In the Canadian context, Lange and colleagues (2020) noted a 20% increase in reported alcohol use during the pandemic within consumers aged 18-64, which was in part facilitated by alcohol distributors being deemed an essential service during lockdowns (Stockwell et al., 2021). Substance use during quarantine can catalyze existing feelings of anger and/or PTSD symptoms and result in violent reactions by abusers (Papadimos, 2020). In addition, Power and colleagues (2020) noted that emergency circumstances like COVID-19 can trigger pre-existing trauma, which can increase reliance on alcohol and other substances to cope, and thus, expose women to increased risk factors for violence. Given that multiple pathways have appeared during COVID-19 that connect stressors to increased substance use, women are resultantly at an increased risk of IPV for this reason alone. Overall, public health

measures that have isolated women at home with their abusers have unintentionally inflicted structural violence against them by increasing their risk of experiencing IPV.

2.2.3 Financial Barriers to Safety

While virtually everyone is affected by a global recession, the impacts are notoriously gendered in scope. Women comprise over 60% of the 40 lowest paying jobs and thus, are likely to have hours cut or be laid off without the social protections (e.g., unemployment insurance, severance, etc.) of formally employed persons (Viswanath & Mullins, 2020; Wenham et al., 2020). Wenham et al. (2020) found that the economic impacts of COVID-19 may disproportionately impact women, noting that women are more likely to lose their jobs in times of economic instability due to existing insecure contracts and fewer hours of employed work. In addition, in the event of daycare and school closures, women may be more likely to quit their jobs in favour of childcare responsibilities at home due to social pressure, gender roles, and/or personal choice (Wenham et al., 2020).

Women who experience IPV are also disproportionately likely to be unemployed or work less because their abuser aims to extend their coercive control over them through severe economic deprivation (Wilcox et al., 2020). The circumstances surrounding COVID-19 have made it easier for abusers to reduce their partner's access to economic resources. For example, an abuser may force or manipulate their partner to quit their job under the guise of protecting them from the risk of COVID-19, but ultimately, hold the ulterior motive of increasing their economic control in the household and increasing the dependency of their partner. Alternatively, abusers may allow their partners to work but confiscate and/or restrict the money earned as a form of abuse (Roesch et al., 2020). The public health regulations surrounding COVID-19 have erected additional barriers to financial independence and security for women experiencing IPV by enabling abusers to exert further control over their partners finances and employment.

It is well understood that when women are dependent on their partner for access to economic resources, it is difficult to exit the relationship safely and permanently. Secure, stable employment is the catalyst to gaining financial independence and thus having access to resources (e.g., transportation, hotel/residence, food, etc.) to leave a relationship, which is precisely why many abusers actively prevent their partners from working (John et al.,

2020; Kaukinen, 2020; Wilcox et al., 2020). However, the circumstances of COVID-19 make financial independence and security nearly impossible for many women due to gender inequities, increased control by their abuser, and lack of opportunity for economic participation.

2.3 Recommendations for Action

There is an obvious and urgent need for research that evaluates how the economic consequences of COVID-19 public health regulations are impacting women who experience IPV. The conditions of intense economic stress due to rising unemployment combined with the consequences of isolation have culminated in increased financial dependence for women. This is essentially a perfect storm for abusers to increase their coercive control and escalate violence, knowing that their partner is likely unable to leave them. As stated by Taub (2020), domestic violence is acting as an opportunistic infection that is thriving in the conditions created by COVID-19: a pandemic within a pandemic.

The literature makes a clear case for the magnitude of the risk of IPV during COVID-19 and the lack of resources available or accessible to those in need (Fortier, 2020). Several authors recommend action items to help women at risk of IPV, such as proactive identification of and outreach to those at risk of IPV, funding of essential services that support those experiencing IPV, innovative service delivery (e.g., telemedicine and virtual counseling), training for neighbours about warning signs, and the offsetting of lost wages via subsidies (Medel-Herrero et al., 2020; Nundy et al., 2020; Roesch et al., 2020; Ryan & El Ayadi, 2020; Sharma & Borah, 2020; Thomas et al., 2020; van Gelder et al., 2020; Viveiros & Bonomi, 2020; Walters, 2020). Only Bahn et al. (2020) proposed risk-mitigation of an economic nature by advocating for stimulus policy responses for individuals, which eventually became a reality with the introduction of the Canada Emergency Response Benefit (CERB), a CAD 2000 monthly stimulus check available to a select eligibility group, namely, people who lost employment because of the pandemic¹ (Government of Canada, 2021). It is unrealistic to expect any IPV-specific harm reduction strategies to be implemented without sound evidence of the problem: data are required to

¹ The CERB was not directed specifically at people experiencing IPV.

make evidence-based decisions, which underscores the importance of work surrounding IPV during COVID-19 (Phumaphi et al., 2020).

The Executive Director of UN Women has referred to the increase in COVID-19 related violence against women as a “shadow pandemic” (Walters, 2020). While it is true that IPV is notoriously of a hidden nature and exacerbated during periods of prolonged isolation from others (Kaukinen, 2020), this label unintentionally creates a hierarchy of importance between the pandemics. This label positions IPV as an afterthought in regulatory and policy response: a by-product of the COVID-19 pandemic. It is, therefore, necessary to deliberately acknowledge and measure the incidence and severity of IPV in the context of COVID-19 so that the needs of women can be clearly articulated and acted upon during policymaking. A more equitable approach would be to acknowledge the reality of two simultaneous pandemics, with the populations affected being equally worthy of attention. As noted by Connor et al. (2020) and Wenham et al. (2020), when the pandemic is over, plans to tackle gender inequality must be at the core of recovery efforts, including resource allocation and agenda-setting, but this approach ignores the current needs of women experiencing IPV. Moreover, given the anticipated strength of the relationship between financial insecurity and risk of IPV during the economic downturn caused by COVID-19, it is of particular importance to collect data regarding how women are economically impacted, how this may affect their experiences of IPV, and most importantly, how to empower them to mitigate the economic circumstances that increase their risk of experiencing abuse and becoming trapped in an abusive relationship.

2.4 Summary of Current Evidence

The current evidence is clear that COVID-19 has indirectly contributed to record levels of unemployment and economic instability. As such, many couples are facing new or intensified financial instability and economic stress in combination with being forced to be in close proximity for prolonged periods of time. This can precipitate violence in any household, especially for women who already experienced violence at home, creating an extremely dangerous and potentially deadly combination. Yet, the burden of IPV concerning COVID-19-related economic changes has yet to be quantified. IPV as a simultaneous pandemic is unlikely to be acted upon until evidence can be brought forth of

its existence and root causes; only then will key stakeholders view it as deserving of attention and resources.

3 Study Rationale

The research outlined in this thesis will help to fulfill the need for information about how the economic circumstances of COVID-19 have impacted women's experiences of abuse in a time of unprecedented risk. This information is critical to documenting the potential unintended consequences of public health measures in response to COVID-19, in addition to the gendered nature of the distribution of social harms during public health emergencies. These data are necessary to inform an equitable public health response in the inevitability of future waves of COVID-19 as well as for future pandemics. Only once we measure the problem can we act to remedy it effectively. Considering that early estimates suggest that an effective public health response will require intermittent social distancing (and associated economic impacts) for the next two years, these data will serve us now and well into the future to understand women's experiences of IPV in emergency circumstances (Crasta et al., 2020).

3.1 Objectives

- 1) to provide evidence of the anticipated increase in abuse experienced during COVID-19 by women who experience violence at home;
- 2) to determine how income is related to abuse for women who experience violence at home during COVID-19;
- 3) and, to identify whether the Canada Emergency Response Benefit as a personal economic stimulus measure had a health-protective effect for women experiencing IPV.

4 Methods

4.1 Data Collection

This project is a sub-study nested within the broader EMPOWER study, which received ethics approval from Western University's Non-Medical Research Ethics Board before commencing (NMREB #116226; Appendix B). This study employs an observational, retrospective cross-sectional design to identify household and personal income and experiences of IPV within the past 12 months. It was administered at a single timepoint to measure experiences presently, as in during COVID-19, as well as retrospectively, as in prior to COVID-19. To accomplish this, an online, quantitative survey was developed and constructed on Western University's secure Qualtrics platform. The use of an online survey was selected because it is conducive to the circumstances that prohibit in-person interaction due to COVID-19. In addition, the virtual administration of the survey permitted recruitment in rural areas, an understudied population in IPV research.

4.1.1 Sampling Strategy

The survey was administered using two-factor authentication, a layered process that includes the use of two factors of authentication methods to mitigate robot hacking for honorariums (Colnago et al., 2018). Email and phone were selected as the two factors, such that participants were provided the survey link through email and accessed the password via text. The survey took an average of ten minutes for participants to complete, and data collection took place from August to November of 2020.

In compliance with COVID-19 public health measures prohibiting non-essential in-person interactions, a virtual approach to sampling was developed. All recruitment took place through Kijiji posts across the province of Ontario as part of the broader EMPOWER study by the Women's Health Matters Research (WHMR) team.

Specifically, a cluster sampling approach was adopted, such that areas in Ontario were divided into two groups, urban and rural, with random sampling of locations within each group. However, rural areas were deliberately sampled twice as much as urban areas to achieve representation of rural voices given their historic exclusion from IPV research.

Advertisements were posted across Ontario, Canada, in both rural² and urban areas (72 urban locations and 127 rural locations across a variety of Kijiji categories [see Appendix D]). In reality, rural areas were sampled ~1.76 times as frequently as urban areas, which was slightly less than intended. This is most likely attributable to pre-set Kijiji posting locations that aim to gain maximum ad exposure, thus amalgamating some rural ads into broader urban areas in hopes of achieving more hits for the user.

Eligibility criteria were consistent with that of the broader EMPOWER study, including that the participant must identify as a woman, have access to a safe computer and telephone, have experienced IPV in the past 12 months as determined by the Abuse Assessment Screen (AAS; Parker & McFarlane, 1991), and have lived with their abusers during the COVID-19 pandemic. In total, 95 women in Ontario, Canada were recruited for the larger study, however only 23 women were included within this sub-study due to missing data across the broader dataset. The initial sample size of 95 women was selected to facilitate rapid recruitment during COVID-19, given the time-sensitive nature of pandemic responses to encapsulate the experiences of women as they unfolded. Due to human error in the virtual survey layout for mobile devices, which required non-intuitive left-to-right scrolling to access some questions addressing the during-COVID-19 timepoint, many women responded to only the pre-COVID-19 timepoint. As such, complete data regarding experiences of intimate partner violence were available for 23 women. Canada-wide recruitment would have been ideal for a truly representative sample, but this was deemed ill-advised due to the inconsistency of municipal COVID-19 guidelines across the country early in the pandemic, thus complicating the interpretation of results. Ontario was selected due to an initial public health response of widespread lockdowns, thus providing a clear picture of how these measures impacted IPV.

4.1.2 Data Collection

The broader EMPOWER survey included four main blocks: 1) demographics, 2) relationships, 3) abuse and COVID-19, and 4) coping and resilience. The demographics

² Operationalized using The Ministry of Health and Long-Term Care (2011) which classifies a rural setting as communities of less than 30,000 individuals who are more than 30 minutes from the nearest urban area.

and abuse and COVID-19 blocks were extracted for use in this sub-study (see Appendix E). The survey was administered once, that is, at a single timepoint to each participant, but prompted for both retrospective and current information. Namely, the demographic question addressing personal monthly income and the Composite Abuse Assessment Screen Short-Form (CAS_R-SF) questions were provided twice, such that participants first responded retrospectively to measure their experiences prior to COVID-19, and then answered the questions once more from their current perspective, that is during COVID-19. Participants were provided with a \$10 Amazon e-gift-card upon completion of the survey (as per the Letter of Information outlined in Appendix C) in recognition of their contribution and time, as well as in hopes of decreasing barriers to participation. Since the latent variables of interest in this study are theoretically complex, multiple indicators were used to reflect various dimensions of each variable. Indicators included, where possible, validated scales as well as a combination of global assessments created by the research team.

4.1.2.1 Demographics

A wide variety of demographic factors were collected to gain a thorough understanding of the diversity of the sample (see Appendix E). Although inclusion criteria for the sample included that participant must identify as a woman, gender was assessed to permit androgynous, agender, trans-women, and two-spirited individuals to self-identify if they wished. This reflects the diversity of gender even within the confines of “womanhood”, an important consideration in IPV research. Age was assessed by a global text box. Level of education and marital status were collected via multiple choice. Sexuality was evaluated with a multiple-choice question to recognize that women in non-heterosexual relationships can and do experience IPV. Participants were invited to self-identify as Indigenous to Canada as assessed by a global yes/no question; however, ethnicity was also assessed with an open text box to permit for multiple self-identifications. In addition, employment status before COVID-19 and during COVID-19 was assessed via a multiple-choice matrix, while essential worker status during COVID-19 was collected via a global yes/no question. Geography was measured by a multiple-choice question to contextualize the results, as rural experiences of IPV may differ from that of the dominant

urban narrative. Household composition was determined by inquiring about children via a global yes/no question. The living situation of the participant was assessed by a multiple-choice question that accommodated living alone, with a partner, with children, or a combination of these factors. Appendix E outlines the specific multiple-choice options for each question.

4.1.2.2 Intimate Partner Violence

IPV was measured using both the AAS (Parker & McFarlane, 1991) and the CAS_R-SF (Ford-Gilboe et al., 2016). The AAS is a four-question, validated screening measure for experiences of abuse within the past 12 months (Parker & McFarlane, 1991). It screens for the core domains of violence, including physical abuse, emotional abuse, sexual abuse, and coercive control, as well as the perpetrator(s) and frequency of the experience (see Appendix F). Rabin et al. (2009) evaluated the AAS within a systematic review and found exceptionally high sensitivity (93-94%) and specificity (55-99%). In addition, test-retest reliability was found to be high at 0.91, inclusive of testing within women of a range of ethnicities and socio-economic backgrounds, thus establishing it as suitable for use in this study. Appendix F displays the questions included in the AAS.

The CAS_R-SF is a 15-item version of the original 30-item Composite Abuse Scale that spans three subscales: physical, sexual, and psychological (Ford-Gilboe et al., 2016). It was developed by 31 international experts on IPV research to develop a shorter, yet equally efficient scale to screen for IPV. The complete scoring protocol, factor loadings, and scale prompts are available in Appendix G. Total scores for the CAS_R-SF, ranging from 0 to 75, are calculated by computing the mean of past 12-month frequency of abuse experiences responses and multiplying by 15, where there are responses for at least 11 of 15 items (~70%; Ford-Gilboe et al., 2016). Subscale scores were computed according to Ford-Gilboe et al.'s (2016) protocol. Note that in addition to the 15 scale items, the CAS_R-SF includes four yes/no pre-screening questions that inquire as to whether women had ever

been in an adult intimate relationship³, were currently in a relationship, were currently afraid of their partner⁴, and had ever been afraid of any partner.

4.1.2.3 Economic Status

All measures of income were developed by the research team and were not validated measures. Household income was assessed before (retrospectively) and during (currently) COVID-19 using multiple-choice questions with four levels of income brackets (ranging from less than \$19,999 to greater than \$100,000) and explicitly stated to be inclusive of all sources, including employment, government, child support, and any other income after-tax. Personal income for women was assessed monthly with an open text box, also for pre (retrospectively) and during (currently) COVID-19. Women were also asked to indicate their personal sources of income before and during COVID-19 in a multiple-choice matrix that included normal employment income, employment insurance, Ontario Disability Support Plan, Ontario Works, spousal support, and the Canadian Emergency Response Benefit (see Appendix E).

4.2 Data Analysis

4.2.1 Sample Composition

To gain an understanding of the demographics represented within this sample, measures of central tendency and dispersion and frequencies, were computed as appropriate for the socio-demographic measures of age, gender, education, ethnicity, sexual orientation, relationship status, employment status, household income pre and during COVID-19, personal income pre and during COVID-19, sources of income pre and during COVID-19, geographical location, number of children, and living situation.

³ Note that this screening question was removed as this was redundant due to eligibility criteria. The latter three questions were retained for use.

⁴ This screening question was only presented to participants who selected “Yes” in response to the previous question (i.e., whether they were currently in a relationship).

4.2.2 Scale Preparation and Scoring

CAS_R-SF scores were tabulated in accordance with the scoring protocol by Ford-Gilboe et al. (2016). In the event of missing scores, a summed total score was computed for women who completed eleven or more items (out of fifteen total) by calculating the mean of the completed items and multiplying it by fifteen to achieve her total CAS_R-SF score, as is recommended by Ford-Gilboe et al. (2016). Subscales for sexual, physical, and psychological abuse were also computed in this way. Total and subscale CAS_R-SF scores were tallied for both timepoints: (1) retrospective recollection of IPV pre COVID-19, and (2) present experiences of IPV during COVID-19.

4.2.3 Assumption Testing

Assumptions were tested prior to the conduction of each statistical test. ANOVAs were required to adhere to the assumptions of (1) the dependent variable being measured at the continuous level, (2) the independent variable being composed of two or more categorical, independent groups, (3) attaining independence of observations, (4) having no significant outliers, (5) the dependent variable being approximately normally distributed for each combination of groups of the independent variables, and (6) having homogeneity of variances for each combination of the groups of the two independent variables. MANOVAs were required to adhere to the following assumptions: (1) the dependent variables being measured at the continuous level, (2) the independent variable(s) consisting of two or more categorical, independent groups, (3) attaining independence of observations, (4) having adequate sample size (cases per group > number of dependent variables), (5) having no univariate or multivariate outliers, (6) achieving multivariate normality, (7) having a linear relationship between each pair of dependent variables for all combinations of groups of independent variable(s), (8) having homogeneity of variance-covariance matrices, and (9) having no multicollinearity. All tests adhered to the required assumptions, except where noted otherwise.

4.2.4 Analysis for Objective I: Evidence of Increased Abuse

The means of CAS_R-SF total and subscale scores were computed for both time points (i.e., retrospective recollection of IPV pre COVID-19 and current experiences of

IPV during COVID-19) and compared at face value. Moreover, a new variable was created, CAS_R-SF change, to compare the overall volume and severity of abuse from pre- to during-COVID-19 (increase, decrease, or no change). The frequency of each option was computed.

4.2.5 Analysis for Objective II: Relationship Between Income and Abuse

First, a factorial ANOVA was computed predicting the pre-CAS_R-SF total scores using the created CAS_R-SF change and personal monthly income change variables (each with the options of increase, decrease, or no change). Second, a MANOVA was computed to predict the multivariate effect of pre-COVID-19 physical, psychological, and sexual abuse, using the CAS_R-SF change and personal monthly income change variables. Statistically significant omnibus effects were parsed to identify any significant univariate effects (Grimm & Yarnold, 1995) in a way that controlled for Type I error by applying a Benjamini-Hochberg (Benjamini & Hochberg, 1995) correction (Dubitzky et al., 2013). Notably, only the pre-COVID-19 IPV scores were included in these analyses, as this would permit for the identification of levels of risk for change in IPV during COVID-19 (i.e., for increased IPV). If so, this could assist healthcare and social service providers in proactively identifying at-risk populations for IPV during emergency circumstances and thus devoting resources to assist them.

It was also of interest to identify the extent to which household income level over the previous year might be protective with regards to IPV during COVID-19. First, a factorial ANOVA was performed predicting during COVID-19 CAS_R-SF total scores using the income change and annual household salary variables. Statistically significant ANOVA results would be subjected to parsing out the main effects (i.e., per income bracket), while a statistically significant omnibus test would be subjected to Tukey's HSD post-hoc test. In addition, a MANOVA was computed to discern the multivariate effect of pre-COVID-19 physical, psychological, and sexual abuse, using the income change and annual household salary variables. Statistically significant omnibus effects were parsed to identify any significant univariate effects (Grimm & Yarnold, 1995) in a way that controlled for Type I error by applying a Benjamini-Hochberg (Benjamini & Hochberg, 1995) correction

(Dubitzky et al., 2013). This analysis would permit for the identification of economic circumstances affecting IPV experienced during COVID-19. If so, this could aid policymakers in identifying groups most at-risk of IPV during future pandemics through the use of economic indicators.

4.2.6 Analysis for Objective III: Canada Emergency Response Benefit as Antagonist to Abuse

To complete the analysis, two factorial ANOVAs were employed to predict (1) pre COVID-19 CAS_R-SF total scores, and (2) during COVID-19 CAS_R-SF total scores from the CERB receipt and personal monthly income change variables. In addition, two MANOVAs were conducted, using the same factors, but to predict the multivariate effect of (1) pre COVID-19 physical, psychological, and sexual abuse, and (2) during COVID-19 physical, psychological, and sexual abuse as per CAS_R-SF subscale scores. Post-hoc testing was employed for significant MANOVAs to identify any significant univariate effects (Grimm & Yarnold, 1995) in a way that controlled for Type I error by applying a Benjamini-Hochberg (Benjamini & Hochberg, 1995) correction (Dubitzky et al., 2013). Overall, this analysis aimed to determine how receiving CERB may affect IPV during COVID-19. This would permit the identification of potential health-protective effects of economic stimulus measures during emergency circumstances for women experiencing IPV, including within the context of personal monthly income change.

4.2.7 Ensuring Quality and Rigour

Given the potential implications of this work, it was necessary to integrate several measures of quality and rigour assurance at each stage of research: planning, implementation, and reporting.

4.2.7.1 Planning

The protocol for this study was developed in tandem with my supervisors: Dr. Mantler, a prominent scholar in the fields of women's health and intimate partner violence, and Dr. Johnson, an exceptional researcher proficient in quantitative methods. This collaborative approach set the foundation necessary for a high-quality study.

4.2.7.2 Implementation

As was described in section 4.1.1, extensive measures, namely, cluster sampling, were taken to ensure the representation of rural and urban women within the sample. Acting to deliberately diversify the sample ultimately improves the quality and applicability of the results and conclusions.

Moreover, transparency in data cleaning and methods is of the utmost importance to maintain the integrity of the data. As such, a detailed data cleaning protocol was completed prior to the commencement of data analysis (see Appendix H). The researcher created the protocol to track each change made to the dataset in Excel to ensure the replicability of the final data set.

4.2.7.3 Reporting

Unfortunately, consent was not collected to make these data publicly available to protect the safety of the participants. This does limit the replicability of these results by others; however, to mitigate this limitation, extensive reporting of demographic information was conducted.

4.2.8 Ethical Considerations

Ethics approval was obtained from the Institutional Research Ethics Board of Western University through the web-based platform *Western Research Ethics Manager*. No identifying information was collected, save for an email address if a participant chose to provide it to receive the honorarium. The email addresses were deleted upon sending the e-gift-card and exist only in a secure tracking document, separate from all other data.

Special consideration was taken regarding risks of participation, as abusers may become aggravated if they were to learn about their partner's participation in a study regarding their experiences of abuse. The safety of all participants is of the utmost priority; thus, several steps were taken to ensure this. First, eligibility criteria included a question which asked women to confirm that they have access to a safe computer and telephone, trusting them to gauge their safety as is recommended; research has demonstrated that women know best how to use their devices safely and should be trusted to do so (Eden et al., 2015; Glass et al., 2017; Koziol-McLain et al., 2015). Finally, within the survey itself,

a safe browsing protocol and quick exit button were displayed to participants to prioritize their safety. The safe browsing protocol recommended the use of an incognito browser or to wipe the device's history after survey completion to avoid leaving evidence of participation. In case the abuser was to interrupt a woman while she was taking the survey, an "Exit Survey" button was programmed into every page and displayed prominently. When clicked, the participant was immediately re-directed to a blank Google page so as not to raise suspicion.

4.2.9 Self-Reflection

Navigating dating as a twenty-something woman has been quite the experience, to say the least. I've had to rely on my instincts and common sense, which has gotten me out of some shady situations more than once. That said, even those of us with the best radar for "bad" people don't always get it right. Even myself. It is disturbing to me that many abusers roam freely in our world and interact with us day-to-day, yet the faces and voices of those enduring abuse are mostly unheard. The most twisted forms of abuse are often the most invisible. In my professional career, I aim to challenge this narrative and shed light on the experiences of women in abusive relationships. I hope to raise awareness not only about how pervasive IPV is in our communities, but how these women survive despite incredible adversity. I truly believe that IPV is a societal problem that requires an equally large, collective response to remedy. Given how every nation is grappling with the impacts of COVID-19, I expect this strain on social conditions to exacerbate IPV in Canada. My goal is to quantify this burden on women and identify their needs to justify additional protection and supports for women in future pandemics. Given my passion for the subject and belief that abuse is a pervasive public health concern, I am sensitive to my potential confirmation bias; I may interpret the data to support my hypothesis that violence has increased during COVID-19 and has been exacerbated in particular by economic conditions. To remedy this, I will adhere to objective quantitative methods and continually re-evaluate my interpretations of the data to ensure that any pre-existing assumptions do not permeate my work.

4.3 Dissemination of Findings

This study aims to contribute to existing literature regarding how the economic consequences of COVID-19 have affected experiences of IPV for women. To the author's knowledge, this will be the first study to quantify the effect of this relationship in the Canadian context. This exploratory research serves to inform policy creation at the municipal, provincial, and federal levels to empower women who experience IPV and promote their safety amid circumstances of unprecedented risk.

Research findings will be published in a scholarly, peer-reviewed journal and presented at both academic and informal conferences. Furthermore, findings will be disseminated through the author's professional social media accounts to connect with academics and policymakers in the IPV space. Finally, the author will also reach out to local media to promote these findings, with the potential for news articles and radio interviews due to the current and time-sensitive nature of the topic.

5 Results

Overall, the results of this study provide one of the first in-depth understandings of how COVID-19 shaped women's experiences of IPV in Canada. Moreover, these results provide the first look into how economic circumstances are related to women's experiences of IPV during COVID-19 within the Canadian context.

5.1 Sample Description

This sample was composed of 23 Canadian women living in Ontario, all of whom identified as female. There was also diversity in reported sexual orientations, with representation of bisexual women (13.0%, $n=3$), and queer women (4.3%, $n=1$). The dominant sexual identity reported was heterosexuality (78.3%, $n=76$). A median age of 27 years ($s=8.4$) was reported. While 87.0% ($n=20$) of women indicated being from an urban area, 2 (8.7%) reported living in a rural area⁵. The majority of women (87.0%, $n=20$) identified that they had attended at least some post-secondary education. Ethnically, many women identified as non-Indigenous North American (39.1%, $n=9$), Asian (21.7%, $n=5$), or mixed/multiple ethnicities (34.8%, $n=8$). Only one woman (4.3%) was Indigenous to Canada. In addition, most women indicated that they were currently in a relationship (but not married, common law, or engaged; 52.2%, $n=12$) or married, common law, or engaged ($n=6$, 26.1%) where they co-habited with their partner (60.9%, $n=14$). Moreover, most women indicated that they did not have children (91.3%, $n=21$). Full demographic results are reported in Appendix I.

Regarding experiences of IPV, 60.8% ($n=14$) of women reported ever being afraid of an intimate partner, with 43.4% ($n=10$) of the sample indicating that they were afraid of their current partner. While 47.8% ($n=11$) of women reported experiencing one abusive relationship in their lifetime, 43.4% ($n=10$) of women indicated having experienced more than one abusive relationship in their lifetime.

⁵ Extensive efforts were made to oversample rural populations in hopes of increasing their participation in this survey, ultimately to achieve a sample that accurately represented the population of Ontario (see "Recruitment" for details). In reality, 13.8% of people in Ontario live in a rural area, meaning these efforts were somewhat successful, falling short of this target by about 2%. (<https://www.statista.com/statistics/608698/population-distribution-of-ontario-by-rural-urban-type/>).

Self-reported income data indicated that 34.8% ($n=8$) of women earned a net annual household income of CAD 20000-49999 and 47.8% ($n=11$) of women earned a net annual household income of CAD 50000-99999. Monthly personal income prior to COVID-19 had a median of CAD 3000 ($s=1428.25$). Most women reported working full-time pre-COVID-19 (51.5%, $n=49$). Reported monthly personal income during COVID-19 dipped to a median of CAD 2000 ($s=1092.95$). Pre-COVID-19, 18 (78.3%) of women reported earning “normal” income (i.e., traditional employment), but others reported employment insurance, the Ontario Disability Savings Plan, and spousal support as sources of income. When re-examined during COVID-19, 17 (73.9%) women indicated normal sources of income. The most common source of income during COVID-19 was CERB, with 15 (65.2%) women claiming it. It was determined that many women (26.1%, $n=6$) experienced no change in personal income during COVID-19⁶, however, 15 (65.2%) women did experience income loss. Only 2 (8.7%) women reported an increase in personal monthly income during COVID-19. During COVID-19, only 3 women (13.0%) reported working full-time, 6 women (26.1%) reported working part-time, and 4 women reported being unemployed (17.4%). In total, only 1 (4.3%) woman indicated that they were considered an essential worker during COVID-19.

5.2 Results of Objective I: Evidence of Increased Abuse

Total CAS_R-SF scores pre COVID-19 had a mean of 46.34 ($s^7=16.17$), while their during COVID-19 counterparts had a slightly lower mean of 46.15 ($s=17.79$). Notably, both timepoints shared a minimum score of 15, but the maximum score for during COVID-19 was 71.25 compared to 56.25— a difference of approximately 15-points. The pre COVID-19 physical abuse subscale had a mean score of 10.14 ($s=4.82$) with a during COVID-19 equivalent of 11.43 ($s=5.62$). The psychological abuse subscale had a mean score of 20.38 ($s=7.35$) pre COVID-19 and 19.19 ($s=7.15$) during COVID-19. Sexual abuse scores had a pre COVID-19 mean of 6.00 ($s=3.42$) and during COVID-19 mean of

⁶ Note that some women earned \$2000 pre-pandemic and qualified for the \$2000 CERB during-COVID-19, and thus, were classified as “no change in income” despite the change in *source* of income.

⁷ Note that “*s*” represents the unbiased estimate of the standard deviation as is reported by R.

6.13 ($s=3.20$). Moreover, when total CAS_R-SF scores were compared for each individual across timepoints, 13 (56.5%) women reported an increase in IPV, 8 (34.8%) women reported a decrease in IPV, and 2 (8.7%) women reported no change in IPV. Overall, these results indicate variation in volume and severity of abuse experienced but demonstrate that most women did experience an increase in IPV during COVID-19.

5.3 Results of Objective II: Relationship Between Income and Abuse

None of the analyses including CAS_R-SF change and income change as predictors demonstrated statistically significant main effects or interactions; as such, post-hoc testing was not pursued, inclusive of corrections for multiple comparison bias. In the analyses employing income change and annual household salary as predictors, previous year income did approach significance as a predictor of pre COVID-19 psychological abuse prior to adjustment ($F(2,22) = 3.5031, p=.04778$); this result was not retained post-correction. In addition, it was initially suggested that there was a statistically significant effect of income change when permitted to interact with annual household income on total CAS_R-SF scores during COVID-19 ($F(2,17)= 3.602, p=.0496$). Post-hoc testing was pursued by parsing out the main effects for each income bracket, but it appeared that the significant result was most likely attributable to the small sample size (i.e., outliers) in the first income bracket ($n=2$; this was a violation of the assumption of adequate cases per group to conduct a MANOVA). Overall, there is insufficient evidence to support that when income change interacts with annual household income, IPV is significantly affected in either the pre COVID-19 or during COVID-19 context. See Tables 1 through 4 for all results pertaining to Objective II. These results cannot confirm that personal monthly income change is related to IPV experienced, nor that higher brackets of household income are protective against IPV.

Table 1.

ANOVA I: IPV Change and Income Change Predicting Change in Pre-COVID-19 Total IPV					
	Df	SS	MS	F	Pr(>F)
IPV change	2	565	282.37	0.926	0.418
Income change	2	120	60.03	0.197	0.823
Interaction	3	490	163.38	0.536	0.665
Residuals	15	4574	304.96		

Table 2.

ANOVA II: Income Change and Net Annual Household Income Predicting Change in During-COVID-19 Total IPV					
	Df	SS	MS	F	Pr(>F)
Income change	2	55	27.4	0.093	0.912
Net annual household income	2	123	61.4	0.208	0.814
Interaction	2	1342	671.1	2.273	0.137

Table 3.

MANOVA I: IPV Change and Income Change Predicting Change in During-COVID-19 Physical, Psychological, and Sexual IPV					
Multivariate Effect					
	Df	SS	MS	F	Pr(>F)
IPV change	2	-	-	0.77024	0.6022
Income change	2	-	-	0.38036	0.8829
Interaction	3	-	-	0.73609	0.6733
Residuals	11	-	-		
Physical IPV					
	Df	SS	MS	F	Pr(>F)
IPV change	2	11.137	5.568	0.3029	0.7447
Income change	2	39.724	19.862	1.0803	0.3730
Interaction	3	97.626	32.542	1.7699	0.2109
Residuals	11	202.250	18.386		
Psychological IPV					
	Df	SS	MS	F	Pr(>F)
IPV change	2	236.08	118.038	2.3426	0.1421

Income change	2	1.17	0.586	0.0116	0.9884
Interaction	3	202.29	67.431	1.3383	0.3120
Residuals	11	554.25	50.386		
Sexual IPV					
	Df	SS	MS	F	Pr(>F)
IPV change	2	5.774	2.8872	0.1900	0.8296
Income change	2	4.804	2.4019	0.1581	0.8557
Interaction	3	32.928	10.9761	0.7224	0.5593
Residuals	11	167.125	15.1932		

Table 4.

MANOVA II: Income Change and Net Annual Household Income Predicting Change in During-COVID-19 Physical, Psychological, and Sexual IPV					
Multivariate Effect					
	Df	SS	MS	F	Pr(>F)
Income change	2	-	-	0.42893	0.8517

Net annual household income	2	-	-	0.76817	0.6029
Interaction	1	-	-	1.65415	0.2390
Residuals	12	-	-		
Physical IPV					
	Df	SS	MS	F	Pr(>F)
Income change	2	36.583	18.292	0.9037	0.431
Net annual household income	2	5.323	2.662	0.1315	0.878
Interaction	1	53.193	53.193	2.6279	0.131
Residuals	12	242.900	20.242		
Psychological IPV					
	Df	SS	MS	F	Pr(>F)
Income change	2	30.25	15.125	0.3483	0.71282
Net annual household income	2	154.15	77.077	1.7747	0.21125
Interaction	3	222.43	222.428	5.1215	0.04297*

Residuals	11	521.17	43.431		
Sexual IPV					
	Df	SS	MS	F	Pr(>F)
Income change	2	4.528	2.2639	0.1573	0.8562
Net annual household income	2	4.917	2.4586	0.1709	0.8449
Interaction	3	16.166	16.1661	1.1235	0.3100
Residuals	11	172.667	14.3889		

*Denotes significance at an alpha of 0.05.

5.4 Results of Objective III: Canada Emergency Response Benefit as Antagonist to Abuse

No significant results emerged within the pre- or during-COVID-19 factorial ANOVAs, nor the during-COVID-19 MANOVA. In contrast, the pre-COVID-19 MANOVA suggested that there is a statistically significant effect of income change when it is permitted to interact with CERB on the sexual, physical, and psychological IPV subscales ($F(1,12) = 4.3061, p=.03412$). A post-hoc Pillai's trace was conducted and was consistent with this discovery given its high value ($V = .56$). When broken down by subscale, however, statistically significant results were not reproducible, which suggests either an exclusively multivariate effect, or simply insufficient power to discern univariate effects due to missingness. See Tables 5 through 8 for all results pertaining to Objective III.

Table 5.

ANOVA III: Income Change and CERB Receipt Predicting Change in Pre-COVID-19 Total IPV					
	Df	SS	MS	F	Pr(>F)
Income change	2	163	81.4	0.281	0.759
CERB receipt	1	35	35.2	0.122	0.732
Interaction	2	679	339.5	0.173	0.338
Residuals	14	4054	289.6		

Table 6.

ANOVA III: Income Change and CERB Receipt Predicting Change in During- COVID-19 Total IPV					
	Df	SS	MS	F	Pr(>F)
Income change	2	262	131.2	0.374	0.695
CERB Receipt	1	108	108.2	0.308	0.588
Interaction	2	643	321.3	0.915	0.423
Residuals	14	4914	351.0		

Table 7.

MANOVA III: Income Change and CERB Receipt Predicting Change in Pre-COVID-19 Physical, Psychological, and Sexual IPV					
Multivariate Effect					
	Df	SS	MS	F	Pr(>F)
Income change	2	-	-	0.1616	0.98435
CERB Receipt	1	-	-	1.1295	0.38326
Interaction	1	-	-	4.3061	0.03412*
Residuals	12	-	-		
Physical IPV					
	Df	SS	MS	F	Pr(>F)
Income change	2	6.564	3.282	0.1413	0.8696
CERB Receipt	1	36.726	36.726	1.5815	0.2325
Interaction	1	44.043	44.043	1.8966	0.1936
Residuals	12	278.667	23.222		
Psychological IPV					
	Df	SS	MS	F	Pr(>F)

Income change	2	49.63	24.811	0.4224	0.6649
CERB Receipt	1	18.06	18.065	0.3075	0.5894
Interaction	1	106.45	106.454	1.8122	0.2031
Residuals	12	704.92	58.743		
Sexual IPV					
	Df	SS	MS	F	Pr(>F)
Income change	2	4.688	2.344	0.1795	0.8379
CERB Receipt	1	34.303	34.303	2.6274	0.1310
Interaction	1	2.108	2.108	0.1614	0.6949
Residuals	12	156.667	13.056		

*Denotes significance at an alpha of 0.05.

Table 8.

MANOVA III: Income Change and CERB Receipt Predicting Change in During- COVID-19 Physical, Psychological, and Sexual IPV					
Multivariate Effect					
	Df	SS	MS	F	Pr(>F)
Income change	2	-	-	0.50762	0.7965
CERB Receipt	1	-	-	0.60019	0.6282
Interaction	1	-	-	1.29272	0.3255
Residuals	13	-	-		
Physical IPV					
	Df	SS	MS	F	Pr(>F)
Income change	2	6.654	3.282	0.1413	0.8696
CERB Receipt	1	36.726	36.726	1.5815	0.2325
Interaction	1	44.043	44.043	1.8966	0.1936
Residuals	12	278.667	23.222		
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Interaction	1	2.108	2.108	0.1614	0.6949
Residuals	12	156.667	13.056		

What is interesting, however, is that of the 15 women who reported receiving CERB, only one retained the same level of income as prior to the pandemic. The one woman who earned more than usual by receiving CERB gained CAD 250 monthly. On the contrary, the 13 women who made less than normal by receiving CERB lost an average of CAD 1384 monthly. This volatility in income, combined with the sample size for these calculations, may have been conducive to demonstrating the anticipated relationship between income and IPV that previous analyses failed to.

It should be noted that women facing severe abuse may have been prohibited from securing CERB by their abuser as a method of coercive control and barrier to

independence. In fact, two women reported personal monthly income losses without also reporting receiving CERB. Unfortunately, there was insufficient data regarding these women's experiences of abuse to facilitate further examination, although this would be a promising area of future research.

6 Discussion

Overall, these results indicate that women's experiences of IPV varied significantly during the pandemic. While most women experienced an increase in violence, a substantial number of women did report decreased abuse or no change in abuse. Measures of household and personal income were inadequate in identifying women most at-risk of increased IPV during COVID-19, however, it was identified that personal income change as a result of COVID-19 and receipt of CERB interact to predict levels of pre-COVID-19 physical, psychological, and sexual abuse. This provides a potential avenue to anticipate women in economically precarious situations and support them when emergency circumstances like COVID-19 occur. IPV is a complex concept, thus, it is evident that more advanced analyses may be required to identify the most at-risk groups, as well as protective factors. However, these data do support the frequently cited idea of IPV as 'the great equalizer'— in other words, socio-demographic characteristics bear little weight on the likelihood of experiencing IPV (Davies et al., 2015; Tjaden & Thoennes, 2000).

6.1 Sample Representativeness

The sample was, overall, an acceptable representation of the broader Canadian population. Notably, this sample of women reported being highly educated and securing well above the Canadian low-income cut-off for their income (Statistics Canada, 2021). Although Indigenous representation was slightly lower at 4.3% than the Canadian average of 4.9% of the population, there was diversity in reported ethnicity with substantial representation of those identifying as Asian and with mixed/multiple ethnicities. Knowing that IPV can affect people of all backgrounds and cultures, it is important to include non-White voices in IPV research, which this research has achieved. Additionally, a great amount of diversity was discovered for both gender identities and sexual orientations. Given the heteronormative approach common to much of IPV research, this work shed light on the experiences of non-heterosexual women—an understudied population. Women in relationships without children were disproportionately present in this sample, which means that the unique relationship and economic stressors associated with raising children during a pandemic are underrepresented. As such, this sample is an acceptable, but not

ideal, representation of the Canadian population because it includes many voices that are not often encompassed in IPV research.

6.2 Major Finding I: Economic Status Does Not Explain Changes in IPV

The key finding of this work is that it is extraordinarily difficult to identify women most at-risk of IPV during emergencies like COVID-19, despite previous understandings of how socio-demographic characteristics exacerbate the risk of IPV. Regardless of concrete evidence that linked level of income to experiences of IPV in non-emergency situations (Conner, 2014; Davies et al., 2015), this was not reproducible within this sample and their circumstances. While it is clear that women experienced job and income losses during COVID-19 as anticipated due to gendered participation in the workforce and household, this did not translate to changes in IPV experienced. It is puzzling that over half of women who completed both timepoints in this sample experienced an increase in IPV, yet the reasons behind this evade previous understandings. One potential explanation comes from coping literature, which has noted that women who experience IPV are remarkably adaptive and resilient in risky situations and find a way to “manage”, but further research is required to validate this. Overall, these findings suggest that the reasoning behind changes in IPV experienced from pre- to during-COVID-19 may not be economic in scope.

As COVID-19 related IPV literature progresses, evidence behind seemingly random IPV change behavior is being increasingly noted across the world. For example, Agüero (2021) noted a universal rise in calls to domestic violence hotlines in Peruvian states during COVID-19, but reported that this increase was not tied to a particular demographic group (including income) or previous prevalence of IPV. Moreover, Abujilban and colleagues (2021) discovered that IPV was not correlated with household income during COVID-19 in a sample of Jordanian women. Abdel Rahman (2021) also identified that income was not a statistically significant predictor of IPV between spouses during COVID-19 (location was not specified). Studies by Ebert and Steinert (2021) and Gama et al. (2021) did identify that financial stress during COVID-19 was associated with increased violence in samples of German and Portuguese women, respectively, however,

they did not identify whether the women experienced an actual change in personal or household income.

Several speculative papers have emerged stressing the link between financial circumstances and increased experiences of IPV for women during COVID-19 (O'Donnell et al., 2021; Peterman et al., 2020; Piquero et al., 2021; Sharma & Borah, 2020; World Health Organization, 2020), yet none exist to corroborate that this is indeed the reality. By focusing on the potentially non-existent link between economic circumstances and IPV during COVID-19, attention is diverted from identifying true risk factors, and thus, an effective public health response. Potential risk factors that warrant further examination include economic strain/stress and abuser income (Joiner et al., 2020; Miller & Blumstein, 2020; Sharma & Borah, 2020; van Gelder et al., 2020).

6.3 Major Finding II: CERB Is Related to IPV

It was interesting to discover that CERB, when interacting with income change, could predict IPV pre-COVID-19. This multivariate effect identified that when the CAS_R-SF subscales were optimally weighted to create a composite variable, the combination differed significantly between levels of CERB and personal income change. As such, women with different combinations of physical, psychological, and sexual violence pre-COVID-19 may have been more prone to income change and thus, more likely rely on CERB. This information is helpful for supporting future public health measures that aim to provide targeted economic stimulus. If women experiencing IPV who are at increased risk of income change during a pandemic can be identified, targeted stimulus efforts can be provided. Although, this research does not confirm whether receipt of economic stimulus suffices as a protective measure against IPV; previous literature, albeit external from the context of COVID-19, has determined that economic stimulus measures are insufficient in protecting women from abuse and/or ameliorating their trauma (Conner, 2014). Overall, further research is certainly required to explore the efficacy of stimulus in preventing increased IPV during crisis situations like COVID-19.

It is pertinent that future research strives to discover any protective measures at play, given that COVID-19 continues to impact Canadians over a year past its inception

date and collective emergencies can occur at any time. Only then can the health and safety of women in violent relationships be truly prioritized in key decision-making by policymakers, social service providers, and healthcare providers.

To be clear, these observations do not aim to discredit the importance of economic stimulus measures entirely, as they do play a vital role in supporting other areas of society. This work simply seeks to suggest that economic stimulus may not be a sufficient effective solution to the IPV-related COVID-19 crisis. This research suggests that many women relied on CERB as a source of income, which may have led to benefits in their lives not captured by this work.

6.4 Limitations

Some limitations should be considered alongside the results of this study. Most importantly, women who face the most severe IPV are likely unable to safely access and respond to an online survey. This limitation is inherent to all IPV research and there is a need to identify how to include the voices of women who are the most marginalized in academic research. Furthermore, the reduction in sample size to 23 women in response to missingness within the data reduced statistical power, which may have problematized the detection of significant differences between groups. This may also limit the generalizability of findings, despite small sample sizes being relatively common in IPV-related research. In addition, although validated tools were employed as was possible to maximize rigour, these data relied on self-reporting which is prone to bias. While the cross-sectional design of this study was ideally suited to rapid data collection in response to an unpredictable scenario (i.e., a global pandemic), the retrospective nature of data collection for pre COVID-19 experiences of IPV and personal monthly income may have introduced recall bias into the design. Also, the sample's characteristics were not entirely reflective of the Canadian population, given the poor representation of Indigenous women and women with children. Future studies would benefit from deliberately sampling Indigenous women and women with children to learn about their experiences during COVID-19. Another limitation is the timing of the survey, as the CERB was a finite resource not offered beyond September 2020, meaning that women enrolled in the study up to September 2020 would have benefitted from CERB support, while those responding after this date would have lost

that support; this likely affected the changes in income observed. It is possible that due to the timing of this study, participants were able to rely on the CERB and/or previous savings to maintain their financial status quo. This would delay any severe economic consequences until the CERB had concluded and/or savings had run out, which may not be encompassed in these results. Next, a key variable, change in personal monthly income experienced pre- and during-COVID-19, had an overrepresentation of women who experienced no change in income (composing nearly half of the sample at 47.4%, n=45). Thus, analyses were likely underpowered to detect significant differences in IPV experienced between women who earned more and those who earned less during the pandemic. Furthermore, due to human error in survey layout, complete pre and during COVID-19 data related to IPV (inclusive of imputed cases) was only available for 23 women. This circumstance likely contributed to large amounts of missingness (25.9% across the dataset), ultimately generating under-powered analyses which made it difficult to identify differences between groups. Finally, this study only measured women's employment, personal monthly income, and household annual income. It would be beneficial to administer a survey measuring the abuser's employment and income (as recommended by Kaukinen, 2020), as well as the perceived financial stress of both partners to determine if these measures provide new insights.

7 Conclusion

In North America, rates of IPV have increased in response to the COVID-19 pandemic and associated public health regulations. Based on previous understandings of IPV in emergency circumstances, it was anticipated that the increase in violence was attributable to economic circumstances. However, the results of this study do not suggest that personal and household income significantly impacted experiences of IPV for Canadian women. That said, women who received economic stimulus measures, when considered alongside income change, share similar physical, psychological, and sexual abuse rates; this finding may allow stakeholders to anticipate populations most vulnerable to income change, and thus, reliant on economic stimulus in emergency circumstances like COVID-19. Future research should examine whether perceived economic strain, a known catalyst for IPV, is related to changes in IPV during collective crises such as COVID-19. It is important to identify the risk factors and protective measures that contribute to women's experiences of IPV during COVID-19, as this information can inform an effective public health response for the remainder of COVID-19 and aid preparation for the next pandemic.

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Appendices

Appendix A

Articles Removed in Literature Search at Eligibility Stage (n=72)

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Appendix B

Ethics Approval Certificate



Date: 28 July 2020

To: Dr. Tara Mantler

Project ID: 116226

Study Title: Impacts of COVID-19 Physical Distancing on Women Experiencing Intimate Partner Violence at Home

Short Title: COVID 19 and IPV

Application Type: NMREB Initial Application

Review Type: Delegated

Full Board Reporting Date: August 7 2020

Date Approval Issued: 28/Jul/2020

REB Approval Expiry Date: 28/Jul/2021

Dear Dr. Tara Mantler

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the WREM application form for the above mentioned study, as of the date noted above. NMREB approval for this study remains valid until the expiry date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

This research study is to be conducted by the investigator noted above. All other required institutional approvals must also be obtained prior to the conduct of the study.

Documents Approved:

Document Name	Document Type	Document Date	Document Version
Mantler NMREB116226 Interview Guide Study REB June23_20	Interview Guide		
Mantler NMREB116226 Recruitment Text REB July10_2020	Recruitment Materials	10/Jul/2020	2
Mantler NMREB116226 Interview LOI REB July10_2020	Verbal Consent/Assent	10/Jul/2020	2
Mantler NMREB116226 Online Questionnaire REB July10_20	Online Survey		
Mantler NMREB116226 Online Questionnaire LOI REB July16_20	Implied Consent/Assent	16/Jul/2020	3

Documents Acknowledged:

Document Name	Document Type	Document Date	Document Version
Mantler NMREB 116226 Eligibility July10_2020	Screening Form/Questionnaire	10/Jul/2020	1

No deviations from, or changes to the protocol should be initiated without prior written approval from the NMREB, except when necessary to eliminate immediate hazard(s) to study participants or when the change(s) involves only administrative or logistical aspects of the trial.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario. Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Please do not hesitate to contact us if you have any questions.

Sincerely,

Page 1 of 2

Kelly Patterson, Research Ethics Officer on behalf of Dr. Randal Graham, NMREB Chair

Note: This correspondence includes an electronic signature (validation and approval via an online system that is compliant with all regulations).

Appendix C

Letter of Information for Survey

Impacts of COVID-19 Physical Distancing on Women Experiencing Intimate Partner Violence at Home Online Survey

Research Team:

Tara Mantler, PhD, Assistant Professor, Western University (PI)
Kimberley T. Jackson, RN, PhD, Assistant Professor, Western University
Jennifer Irwin, PhD, Professor, Western University
Andrew Johnson, PhD, Associate Professor, Western University
Brenna Velker, MD, PhD, Schulich School of Medicine
Cara Davidson, BHSc, incoming MSc, Western University
Christina Safar, BHSc, incoming MSc, Western University

LETTER OF INFORMATION

Introduction

You are invited to participate in a survey that looks at the impacts of COVID-19, especially physical distancing, on women who have experienced intimate partner violence. You are being asked to participate because you indicated in a screening assessment that you have experienced intimate partner violence and have access to a safe computer/telephone.

Purpose of the study

The aims of this study are to examine the evolving impacts of COVID-19 physical distancing on the lives of women who experience intimate partner violence. We hope to use this information to identify the goals and needs of women to help create health and social service policies for the eventuality of future pandemics.

Who is eligible to take part?

You can take part if you:

- Identify as a woman
- Have access to a safe computer and telephone
- Have experienced intimate partner violence in the last 12 months
- Lived with your abuser(s) during COVID-19

If you agree to participate

If you agree to participate you will be asked to set aside approximately 25 minutes to complete an online survey. Implied consent will be gathered by clicking the button "I consent" at the start of the survey. The survey will consist of questions relating to your demographics, relationships,

experiences of abuse and COVID-19, and coping and resilience. If you decide to participate, please confirm at the bottom of this screen and enter a telephone number where we can text you a passcode for the survey.

Compensation

There is a \$10 honorarium (Amazon gift-card) to recognize your time and contributions to the online survey.

Potential Risks & Benefits

The risks of taking part in this study are small. It is possible you may find it distressing to respond to questions about your experiences of violence during COVID-19. There is also the risk that your abuser/partner will see you completing the questionnaire which may put you at increased risk. If either occurs, we encourage you to connect with the Assaulted Women's Helpline at [REDACTED]

By completing this survey, you are contributing to our efforts to understand coping and resilience in the time of COVID-19 which may help us to better address violence against women in future pandemics. However, it is possible that you may not directly benefit from participating in this research.

Confidentiality

All information collected for the study will be de-identified. Any electronic data not stored on Western servers will be encrypted. Only members of the research team will have access to the data. All will be destroyed after 7 years.

Voluntary Participation

Participation in this study is completely voluntary. If you feel hesitant or uncomfortable answering some questions, you can refuse to answer those specific questions or end the survey at any time. You may choose to withdraw from the study at any time prior to the completion of data analysis, and all your data will be destroyed if you wish. You can withdraw your data by emailing [REDACTED] and asking that your data be removed.

Questions about the Study

If you have any questions regarding this study or would like additional information to assist you in reaching a decision about participation, please contact Dr.

Tara Mantler ([REDACTED]).

If you have any concerns about the conduct of this study or your rights as a research participant, please contact The Office of Human Research Ethics, Western University:

Phone [REDACTED] Email: [REDACTED]

Appendix D

Locations of Kijiji Postings

Table 1.

Kijiji Tracking Sheet

Locations	Postal Codes	Posted (Y)	Ad Category	Total # for this code
Maple	L6A	Y	Community Services Buy/Sell	3
Owen Sound	N4K	Y	Community Services Buy/Sell	3
Cumberland	K4C	Y	Community Services Buy/Sell	3
Brockville	K6V	Y	Community Services Buy/Sell	3
Ottawa	K1Y	Y	Community Services Buy/Sell	3
Stouffville	L4A	Y	Community Services Buy/Sell	3
Grimsby	L3M	Y	Community x2 Services Jobs	4
Caledonia	N3W	Y	Community Services Buy/Sell	3
Beaverbrook	K2K	Y	Community Services Buy/Sell	3
Kanata	K2L	Y	Community Services Buy/Sell	3
Bridlewood	K2M	Y	Community Services Buy/Sell	3
Ottawa	K2P	Y	Community Services	2
Nepean	K2R	Y	Community Services	3

			Buy/Sell	
Stittsville	K2S	Y	Community Services Buy/Sell	3
Kanata	K2T	Y	Community Services x2 Buy/Sell	4
Kanata	K2V	Y	Community Services Buy/Sell	3
Kanata	K2W	Y	Community Services Buy/Sell	3
Orleans	K4A	Y	Community Services	2
Manotick	K4M	Y	Community Services Buy/Sell	3
Russell	K4R	Y	Community Services Buy/Sell	3
Cornwall E.	K6H	Y	Community Services	2
Cornwall N.	K6K	Y	Community Services	2
Elizabethtown	K6T	Y	Community Services Buy/Sell	3
Peterborough N.	K9H	Y	Community Services Buy/Sell	3
Peterborough S.	K9J	Y	Community x2 Services x2	4
Peterborough	K9K	Y	Community Services Buy/Sell	3
Durham E.	L0B	Y	Community Services Buy/Sell	3
Queensville	L0G	Y	Community Services Buy/Sell	3

Whitby	L0H	Y	Community Services Buy/Sell	3
North Peel	L0J	Y	Community Services Buy/Sell	3
Lake Simcoe N.	L0K	Y	Community Services	2
Lake Simcoe W.	L0L	Y	Community Services Buy/Sell	3
Georgian Bay	L0M	Y	Community Services	2
Dufferin County	L0N	Y	Community Services	2
East Haldimand	L0R	Y	Community Services Buy/Sell	3
Niagara	L0S	Y	Community Services Buy/Sell	3
Port Hope	L1A	Y	Community Services Buy/Sell	3
Bowmanville W.	L1C	Y	Community Services Buy/Sell	3
Pembroke	K8A	Y	Community Services Buy/Sell	3
Pembroke	K8B	Y	Community Services Buy/Sell	3
Belleville E.	K8N	Y	Community Services Buy/Sell	3
Belleville W.	K8P	Y	Community Services Buy/Sell	3
Belleville	K8R	Y	Community Services Buy/Sell	3
Trenton	K8V	Y	Community	3

			Services Buy/Sell	
Prescott and Russell	K0B	Y	Community Services Buy/Sell	3
Stormont	K0C	Y	Community Services Buy/Sell	3
South Leeds and Grenville	K0E	Y	Community Services Buy/Sell	3
Rideau Lakes	K0G	Y	Community Services Buy/Sell	3
Frontenac County	K0H	Y	Community Services Buy/Sell	3
Renfrew County	K0J	Y	Community Services Buy/Sell	3
Quinte Shores	K0K	Y	Community Services Buy/Sell	3
Peterborough and North Hastings County	K0L	Y	Community Services Buy/Sell	3
Quinte Shores and Northumberland	K0K	Y	Community Services Buy/Sell	3
Kawartha Lakes	K0M	Y	Community x2 Services x2	4
Gloucester	K1B	Y	Community Services Buy/Sell x2	4
Gloucester (W. Orleans)	K1C	Y	Community Services Buy/Sell	3
Orleans (Queenswood)	K1E	Y	Community Services Buy/Sell	3
Ottawa (Riverview)	K1G	Y	Community Services Buy/Sell	3
Ottawa (Alta Vista)	K1H	Y	Community Services	3

			Buy/Sell	
Gloucester (Beacon Hill/Cyrville)	K1J	Y	Community Services Buy/Sell	3
Ottawa (Overbrook)	K1K	Y	Community Services Buy/Sell	3
Ottawa (Vanier)	K1L	Y	Community Services Buy/Sell	3
Ottawa (Rockcliffe Park)	K1M	Y	Community Services Buy/Sell	3
Ottawa (Lower Town)	K1N	Y	Community Services Buy/Sell	3
Ottawa (Parliament Hill)	K1P	Y	Community Services Buy/Sell	3
Ottawa (W. Downtown)	K1R	Y	Community Services Buy/Sell	3
Ottawa (Glebe)	K1S	Y	Community Services Buy/Sell	3
Gloucester (Blossom Park)	K1T	Y	Community Services Buy/Sell	3
Ottawa (Riverside Park)	K1V	Y	Community Services Buy/Sell	3
Gloucester (S. Orleans)	K1W	Y	Community Services Buy/Sell	3
Gloucester S.	K1X	Y	Community Services Buy/Sell	3
Ottawa (Westboro)	K1Z	Y	Community Services Buy/Sell	3
Ottawa (Highland Park/ Carlingwood)	K2A	Y	Community Services Buy/Sell	3
Ottawa (Britannia/Pinecrest)	K2B	Y	Community Services Buy/Sell	3

Ottawa (Queensway / Copeland / Carlington / Carleton Heights)	K2C	Y	Community Services Buy/Sell	3
Nepean E.	K2E	Y	Community Services Buy/Sell	3
Nepean (Davidson Heights)	K2G	Y	Community Services Buy/Sell	3
Nepean (Bells Corners)	K2H	Y	Community Services Buy/Sell	3
Nepean (Barrhaven)	K2J	Y	Community Services Buy/Sell	3
Parry Sound	P2A	Y	Community Services Buy/Sell	3
Greater Sudbury (Downtown / Minnow Lake)	P3B	Y	Community x2 Services Buy/Sell	4
Greater Sudbury (Gatchell / West End / Little Britain)	P3C	Y	Community Services x2 Buy/Sell	4
Greater Sudbury (Robinson / Lockerby)	P3E	Y	Community Services x2 Buy/Sell	4
Greater Sudbury (Lo-Ellen / McFarlane Lake)	P3G	Y	Community Services Buy/Sell	3
Greater Sudbury (Garson)	P3L	Y	Community Services Buy/Sell	3
Greater Sudbury (Val Caron)	P3N	Y	Community Services Buy/Sell	3
Greater Sudbury (Hanmer)	P3P	Y	Community Services Buy/Sell	3
Greater Sudbury (Lively)	P3Y	Y	Community Services Buy/Sell	3
Timmins SE	P4N	Y	Community x3	3

Timmins N	P4P	Y	Community Services x2 Buy/Sell	4
Timmins W	P4R	Y	Community Services Buy/Sell	3
Sault Ste. Marie North	P6C	Y	Community x2 Services x2	4
Thunder Bay Central	P7C	Y	Community Services Buy/Sell	3
Thunder Bay South Central	P7E	Y	Community Services Buy/Sell	3
Thunder Bay N	P7G	Y	Community Services x2 Buy/Sell	4
Thunder Bay S	P7J	Y	Community Services Buy/Sell	3
Thunder Bay W	P7K	Y	Community Services Buy/Sell	3
Neebing	P7L	Y	Community Services Buy/Sell	3
Tecumseh	N8V	Y	Community x2 Services x2 Buy/Sell	5
Windsor	N8W	Y	Community Services Buy/Sell	3
La Salle	N9J	Y	Community Services Buy/Sell	3
Nipissing	P0A	Y	Community Services Buy/Sell	3
Parry Sound	P0G	Y	Community Services Buy/Sell	3
Cochrane Region	P0L	Y	Community Services Buy/Sell	3
Timmins	P0N	Y	Community	3

			Services Buy/Sell	
Algoma	P0M	Y	Community Services Buy/Sell	3
Lake Superior	P0S	Y	Community Services Buy/Sell	3
Northwestern Ontario	P0V	Y	Community x2 Services Buy/Sell	4
Kenora Region	P0X	Y	Community Services Buy/Sell	3
North Bay	P1C	Y	Community Services Buy/Sell	3
Aurora	L4G	Y	Community Services Buy/Sell	3
Woodbridge	L4H	Y	Community Services Buy/Sell	3
Hamilton	L9C	Y	Community Services Buy/Sell	3
Milton	L9E	Y	Community Services Buy/Sell	3
Barrie	L9J	Y	Community Services Buy/Sell	3
Port Perry	L9L	Y	Community Services Buy/Sell	3
Orangeville	L9W	Y	Community Services Buy/Sell	3
Wasaga Beach	L9Z	Y	Community Services Buy/Sell	3
Oakville	L6J	Y	Community Services Buy/Sell	3
Brampton	L6P	Y	Community Services	3

			Buy/Sell	
St. Catharines	L2M	Y	Community Services Buy/Sell	3
Caledon	L7C	Y	Community Services Buy/Sell	3

Appendix E

Survey

Start of Block: LOI

Introduction

You are invited to participate in a survey, with the option for an interview that look at the impacts of COVID-19, especially physical distancing, on women who have experienced intimate partner violence. You are being asked to participate because you indicated in a screening assessment that you have experienced intimate partner violence and have access to a safe computer/telephone.

Purpose of the study

The aims of this study are to examine the evolving impacts of COVID-19 physical distancing on the lives of women who experience intimate partner violence. We hope to use this information to identify the goals and needs of women to help create health and social service policies for the eventuality of future pandemics.

Who is eligible to take part?

You can take part if you:

- Identify as a woman
 - Have access to a safe computer and telephone
 - Have experienced intimate partner violence in the last 12 months
 - Lived with your abuser(s) during COVID-19
-

If you agree to participate

If you agree to participate you will be asked to set aside approximately 25 minutes to complete an online survey. If you choose to participate in an interview, you will be asked to set aside approximately 45-60 minutes for a telephone/video interview. Consent will be implied by clicking the button “I consent” at the start of the survey. Verbal consent will be audio recorded at the start of the interview. The survey will consist of questions relating to your demographics, relationships, experiences of abuse and COVID-19, and coping and resilience. The interview will ask about your experiences of intimate partner violence, social support, resilience, and coping before and during COVID-19. You will be provided with a topic list and secure meeting link/number prior to the interview. If you decide to participate in the survey, please confirm at the bottom of this screen and enter a telephone number where we can text you a passcode for the survey. You will have the opportunity to opt-in to an interview at the end of the survey by entering a safe email. Upon completion of the survey, if you opted-in to an interview, you will be emailed a link to set up an interview date and time.

Compensation

There is a \$15 honorarium (Amazon gift-card) to recognize your time and contributions to the interview. You must opt-in to the interview by entering your email in the survey and complete the interview to receive the \$15 honorarium. The \$15 e-gift-card will be emailed to you upon completion of the interview.

Potential Risks & Benefits

The risks of taking part in this study are small. It is possible you may find it distressing to respond to questions about your experiences of violence during COVID-19. There is also the risk that your abuser/partner will see you completing the questionnaire and/or see/overhear you participating in the interview which may put you at increased risk. If either occurs, we encourage you to connect with the Assaulted Women's Helpline at [REDACTED]

By completing this survey, and interview if you choose to participate, you are contributing to our efforts to understand coping and resilience in the time of COVID-19 which may help us to better address violence against women in future pandemics. However, it is possible that you may not directly benefit from participating in this research.

Confidentiality

All information collected for the study will be de-identified. Any electronic data not stored on Western servers will be encrypted. Only members of the research team will have access to the data. All will be destroyed after 7 years.

No information that could identify you will be used in any publication or presentation of study results. If direct quotes are used to highlight certain findings, any potentially identifying information will be removed. Participants will be identified in study results by assigned pseudonyms.

Transcripts and audio files will be saved on a secure password-protected server at Western University. Any electronic data not stored on Western servers will be encrypted, including any de-identified transcripts sent offsite for transcription.

Voluntary Participation

Participation in this study is completely voluntary. If you feel hesitant or uncomfortable answering some questions, you can refuse to answer those specific questions or end the survey and/or interview at any time. You may choose to withdraw from the study at any time prior to the completion of data analysis, and all your data will be destroyed if you wish. You can withdraw your data by emailing [REDACTED] and asking that your data be removed.

Questions about the Study

If you have any questions regarding this study or would like additional information to assist you in reaching a decision about participation, please contact Dr. Tara Mantler

If you have any concerns about the conduct of this study or your rights as a research participant, please contact The Office of Human Research Ethics, Western University:
Phone: [REDACTED] Email: [REDACTED]

Browsing safely We are concerned about your safety as your partner may become angry if they learn you are participating in this study. Below are some steps you can take to keep your participation in this study private:

A) Use a safe computer or device (one your partner does not have access to) B) Use 'In-Private', 'Private', or 'Incognito' browsing C) Delete your history once you close the window.

At the bottom of each page of the survey there is an 'Exit Survey' button that will take you to google.com. If you use this button you may want to delete your browsing history when it is safe to do so. ***If you need additional help, simply search 'Private Browsing' along with the name of your browser (for example, chrome, Safari) in your search engine.***



I identify as a woman.

- Yes
- No



I have access to a safe computer and telephone.

- Yes
- No
-



Please complete the following.

Please select Yes or No for each question.

	Yes	No
Within the last year, have you been emotionally abused by your partner or someone important to you?	<input type="radio"/>	<input type="radio"/>
Within the last year, have you been hit, slapped, kicked, or otherwise physically hurt by someone?	<input type="radio"/>	<input type="radio"/>
Within the last year, has anyone forced you to have sexual activities?	<input type="radio"/>	<input type="radio"/>
Within the last year, have you been afraid of your partner or anyone else?	<input type="radio"/>	<input type="radio"/>

If you answered yes to any of the previous questions regarding abuse, by whom was this perpetrated?

If you answered yes to the previous question regarding abuse, how many times did you experience this?



I have lived with my abuser(s) during COVID-19.

- Yes- full-time
- Yes- part-time
- No



I self-identify as living in a rural area.

- Yes
- No

End of Block: LOI

Start of Block: Consent

I have read and agree to the Letter of Information outlined above and consent to participate in the study.

- Yes
- No

End of Block: Consent

Start of Block: Demographics

Thank you for agreeing to participate in this online questionnaire. Please answer as many questions as you are comfortable with. You are free to skip any question at any time. There is no right or wrong answer, we are only looking for the answer that is true for you.



What is your gender?

- Androgynous
- No gender
- Trans woman
- Two-spirited
- Woman
- None of these options describe me. I identify as:

- I prefer not to disclose
-

What is your current age in years?



What is the highest certificate, diploma, or degree that you have completed?

- Less than high school
- High school
- Some college/university
- College or university degree
- Advanced degree (i.e.: a Master's or Doctoral degree)
- Other (please specify): _____
-



Do you identify as Indigenous to Canada (Aboriginal, First Nations, Metis, Inuit)?

- Yes
 - No
 - I prefer not to answer
-

What is your ethnicity? Please specify as many ethnic and/or cultural backgrounds as you like, each separated by a comma. For example: Canadian, French, Mi'kmaq, Jewish, etc.



What is your sexual identity?

- Bisexual
 - Gay
 - Heterosexual
 - Lesbian
 - Pansexual
 - Queer
 - You do not have an option that applies to me. I identify as: _____
 - I prefer not to answer
-



What is your marital status?

- Single
 - In a relationship, but not married/common law/engaged
 - Married, common law, or engaged
 - Divorced or separated
 - Widowed
 - Other (please specify) _____
 - I prefer not to answer
-

Please complete the following.

	What was your employment status BEFORE COVID-19?	What was your employment status DURING COVID-19?
Employed full-time	<input type="radio"/>	<input type="radio"/>
Employed part-time	<input type="radio"/>	<input type="radio"/>
Unemployed	<input type="radio"/>	<input type="radio"/>
Casual	<input type="radio"/>	<input type="radio"/>
Seasonal	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>
I prefer not to answer	<input type="radio"/>	<input type="radio"/>



Were you considered an essential worker **during COVID-19**? For example: nurse, long-term care worker, physician, grocery store employee, bus driver, etc.

- Yes
- No
- Unsure
- I prefer not to answer



What was your average household annual income **before COVID-19** (after taxes are deducted), including employment, government, government cheques, child support, and other sources of income?

- Less than \$19,999
- \$20,000-\$49,999
- \$50,000-\$99,999
- Greater than \$100,000
- I prefer not to answer

What was your average monthly income **before COVID-19**?

What was your average monthly income **during COVID-19**?



Please complete the following.

	What were your sources of income BEFORE COVID-19?	What were your sources of income DURING COVID-19?
	Please select all that apply	Please select all that apply.

CERB (Canadian Emergency Response Benefit)	<input type="checkbox"/>	<input type="checkbox"/>
Normal (existed pre-COVID) employment	<input type="checkbox"/>	<input type="checkbox"/>
Employment insurance	<input type="checkbox"/>	<input type="checkbox"/>
Ontario Disability Support Plan (or respective equivalent in your province/territory)	<input type="checkbox"/>	<input type="checkbox"/>
Ontario Works (or respective equivalent in your province/territory)	<input type="checkbox"/>	<input type="checkbox"/>
Spousal support	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify):	<input type="checkbox"/>	<input type="checkbox"/>
I prefer not to answer	<input type="checkbox"/>	<input type="checkbox"/>



What best describes the type of community you live in?

- Large urban center (100,000 people or more)
- Urban center (30-99,000 people or more)
- Rural (30,000 people or less)
- Unsure
- I prefer not to answer



Do you have any children?

- Yes
- No
- I prefer not to answer
-

What is/are the age of the child(ren)?

What is/are the gender of the child(ren)?



What is/are the living situation(s) of the child(ren)?

- Living with me full-time
- Living with me part-time
- Do not live with me
- Other (please specify): _____
- I prefer not to answer
-



What is your living situation?

- I live alone
- I live with my child(ren)
- I live with my partner
- I live with my partner and child(ren)
- Other (please specify): _____
- I prefer not to answer

End of Block: Demographics

Start of Block: Abuse and COVID-19

These questions ask about your experiences in adult intimate relationships. By adult intimate relationships, we mean a current or former husband, partner, or boyfriend/girlfriend for longer than one month. Please answer the following questions **retrospectively**, as in your experiences of abuse **before COVID-19**.



Are you currently in a relationship?

- Yes
- No
- I prefer not to answer
-

How long have you been with this partner (in years)?



Are you currently afraid of your partner?

- Yes
 - No
 - I prefer not to answer
-



Have you ever been afraid of any partner?

- Yes
 - No
 - I prefer not to answer
-



How many abusive relationships have you been in?

- 1
 - 2
 - 3
 - 4 or more
 - I prefer not to answer
-



Please complete the following:

Has this ever happened to you?		IF YES, how often did it happen in the past 12 months BEFORE COVID-19?					If YES, how often does it happen CURRENTLY?						
No	Yes	Never	Once	A few times	Monthly	Weekly	Daily/almost daily	Never	Once	A few times	Monthly	Weekly	Daily/almost daily

Shook
,
pushe
d,
grabb
ed, or
threw
me

Hit
me
with
their
fist or
an
object

,
kicked
or bit
me

Blame
d me
for
causin
g their
violen
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behav
iour

Tried to convince my family/friends that I am crazy or turn them against me



Tried to keep me from seeing/talking to family or friends



Harassed me over the phone



Told me I was crazy, stupid, or not good enough

Followed me or hung around outside my home

Tried to or forced me to have sex

Made me perform sex acts that I did not want to perform

Used
or
threat
ened
to use
a
knife,
gun,
or
weap
on

Confin
ed or
locked
me in
a
room
or
other
space

Appendix F

Abuse Assessment Screen Prompts and Scoring

	Please select Yes or No for each question.	
	Yes	No
Within the last year, have you been emotionally abused by your partner or someone important to you?	<input type="radio"/>	<input type="radio"/>
Within the last year, have you been hit, slapped, kicked, or otherwise physically hurt by someone?	<input type="radio"/>	<input type="radio"/>
Within the last year, has anyone forced you to have sexual activities?	<input type="radio"/>	<input type="radio"/>
Within the last year, have you been afraid of your partner or anyone else?	<input type="radio"/>	<input type="radio"/>

Appendix G

Short-Form Revised Composite Abuse Scale Prompts and Scoring

Figure 1.

CAS_R-SF Prompts

<i>My partner(s):</i>	Has this ever happened to you?		IF YES, how often did it happen in the past 12 months?					
	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily
Blamed me for causing their violent behavior	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily
Shook, pushed, grabbed or threw me	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily
Tried to convince my family, children or friends that I am crazy or tried to turn them against me	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily
Used or threatened to use a knife or gun or other weapon to harm me	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily
Made me perform sex acts that I did not want to perform	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily
Followed me or hung around outside my home or work	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily
Threatened to harm or kill me or someone close to me	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily
Choked me	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily
Forced or tried to force me to have sex	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily
Harassed me by phone, text, email or using social media	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily
Told me I was crazy, stupid or not good enough	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily
Hit me with a fist or object, kicked or bit me	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily
Kept me from seeing or talking to my family or friends	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily
Confined or locked me in a room or other space	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily
Kept me from having access to a job, money or financial resources	No	Yes	Not in the past 12 months	Once	A few times	Monthly	Weekly	Daily/almost daily

Note. All information in table obtained from Ford-Gilboe et al. (2016).

Figure 2.

CAS_R-SF Factor Loadings of Original 12 CAS Items

Item*	Factors and loadings		
	Psychological	Physical	Sexual
Blamed me for causing their violent behaviour	0.905		
Told me I was crazy, stupid or not good enough	0.841		
Tried to convince my family, friends or children that I am crazy or tried to turn them against me	0.870		
Tried to keep me from seeing or talking to my friends or family	0.830		
Harassed me over the phone	0.865		
Followed me or hung around outside my house	0.806		
Tried to or forced me to have sex			0.928
Made me perform sex acts that I did not enjoy or like			0.850
Shook, pushed, grabbed or threw me		0.922	
Hit or tried to hit me with a fist or object, kicked or bit me		0.912	
Used a knife or gun or other weapon		0.630	
Locked me in the bedroom		0.725	

Note. Factor loadings ranged from 0.63 to 0.93, which was deemed comparable to the original CAS. All information in table obtained from Ford-Gilboe et al. (2016).

In addition, total original CAS scores were found to be appropriately correlated with each measure of validation in the revised scale by Ford-Gilboe et al. (2016), thus supporting the validity of the *CAS_R-SF*. As for reliability, internal consistency for each domain of abuse was deemed acceptable, with values of 0.938, 0.847, and 0.884 for psychological, physical, and sexual abuse, respectively. The internal consistency for each measure of validity was as follows: depressive symptoms as 0.84, PTSD symptoms as 0.81, and coercive control as 0.88. Overall, this supports the reliability of the *CAS_R-SF*.

Appendix H

Data Cleaning Protocol

Table 1.

Changes Made to Data (Reflected in Excel)

Question	Variable	Notes	Cleaning	Recode
Section 1: Eligibility				
Safe computer or phone	eli3	String	Remove ID 83 (did not confirm)	None
Experiences of IPV	eli4.1_1 eli4.1_2 eli4.1_3 eli4.1_4	Emotional Physical Sexual Psychological	Remove ID 3 (did not respond) Remove ID 4 (no IPV) Remove ID 72 (no IPV) Remove ID 83 (no IPV)	None
Perpetrator	eli4_1	String Recode responses: 1 = friend/roommate 2 = partner 3 = husband/fiancé 4 = ex-partner 5 = family 6 = stranger		Yes
Number of IPV experiences	eli4_2	Deleted entirely. Inconsistent reporting (i.e., “many” or “often” as text answers instead of numeric responses that permit analysis).		None
Living with perpetrator	eli5		Remove ID 5 (does not live with perpetrator) Remove ID 19 (does not live with perpetrator) Remove ID 29 (does not live with perpetrator) Remove ID 40 (does not live with perpetrator)	None
Section 2: Consent				

consent	consent		Remove ID 3 (did not consent) Remove ID 7 (did not consent) Remove ID 64 (did not consent)	None
Section 3: Demographics				
Gender	gender gender_9 9_TEXT	ID 101 replied "genderfluid"	ID 101 recoded from 99 (other) to 6 (genderfluid)	Yes
Age	age			None
Education	education education_99_text			None
Indigenous	indigenou s			None
Ethnicity	ethnicity	Text responses only.	Each response recoded to the Statistics Canada standard*: 1 = North American Aboriginal origins 2 = Other North American origins 3 = European origins 4 = Caribbean origins 5 = Latin, Central, and South American origins 6 = African origins 7 = Asian origins 8 = Oceania origins 9 = Mixed/multiple origins	Yes
Sexual orientation	sexuality sexuality_99_TEXT	ID 6 responded "Bi-curious. Only male partners to date."	ID 6 was removed for violating inclusion criteria, no correction applied.	None
Marital status	marital marital_9 9_TEXT			None
Employment	employ_1 employ_2 employ_3 employ_4	Responses used to create two new variables: employ_b4, employ_aft, where:	<i>employ_b4</i> Recoded ID 77 from all selected with text response of "Not sure why all	Yes

	employ_5 employ_6 employ_6 _TEXT employ_7	1 = full-time 2 = part-time 3 = unemployed 4 = casual 5 = seasonal 6 = other 7 = prefer not to answer 8 = multiple employments	clicked..." to 7 (prefer not to answer) Recoded ID 99 from "the radio buttons will not let me uncheck them" to 7 (prefer not to answer) <i>employ_aft</i> Recoded ID 28 from text response "full time" to 1 (full-time) Recoded ID 77 from all selected with text response of "Not sure why all clicked..." to 7 (prefer not to answer) Recode ID 87 from unemployed and text response of "Homemaker" to 3 (unemployed) Recoded ID 91 from text response of "disability" to 3 (unemployed) Recoded ID 99 from "the radio buttons will not let me uncheck them" to 7 (prefer not to answer) Recoded ID 100 from "Employed full time before and after" to 1 (full-time)	
Essential worker	essential			None
Average household annual income pre-COVID-19	pre_yr_income			None
Average monthly income pre and during COVID-19	before_mn_income during_mn_income	Note that "89" = prefer not to answer. A new variable, "incchange" (where 1 = increase, 0 = no change, and 2 = decrease) was created to demonstrate	<i>Before COVID-19</i> Recoded ID 9 from "80k" to removed** Recode ID 52 from "1000\$" to 1000	Yes

		the relationship between pre- and during-COVID-19 monthly income.	<p>Recoded ID 55 from “3k-3.5k” to 3250 Recoded ID 56 from “around 4000” to 4000 Recoded ID 59 from “\$2100” to 100 Recoded ID 77 from “Prefer not to say” to 89 Recoded ID 87 from “Not sure” to 89</p> <p><i>During COVID-19</i> Recoded ID 9 from “40k” to removed** recode ID 55 from “Same” to 3250 Recoded ID 59 from “\$2000” to 2000 Recoded ID 77 from “Not gonna say” to 89 Recoded ID 87 from “Not sure” to 89</p>	
Sources of income pre-COVID-19	sources1_1 sources1_2 sources1_3 sources1_4 sources1_5 sources1_6 sources1_7 sources1_7_TEXT sources1_8	Created new variable, “sources_b4”, where: 1 = CERB 2 = normal employment 3 = employment insurance 4 = disability support 5 = Ontario Works 6 = spousal support 7 = other 8 = I prefer not to answer 9 = multiple	<p>Recoded ID 6 from “CPP Disability, part-time job” to 9 (multiple) and 2 (normal employment) Recoded ID 67 from “parents support” to 7 (other) Recoded ID 91 from “short term disability” to 4 (disability support)</p>	Yes
Sources of income pre-COVID-19	sources2_1 sources2_2	Created new variable, “sources_aft”, where: 1 = CERB 2 = normal employment	Recoded ID 6 from “CPP Disability, part-time job” to 9 (multiple)	Yes

	sources2_3 sources2_4 sources2_5 sources2_6 sources2_7 sources2_7_TEXT sources2_8	3 = employment insurance 4 = disability support 5 = Ontario Works 6 = spousal support 7 = other 8 = I prefer not to answer 9 = multiple	Recoded ID 52 from "CESB" to 1 (CERB) Recoded ID 67 from "parents support" to 7 (other) Recoded ID 91 from "short term disability" to 4 (disability support)	
Geographic location	geo			None
Children	children			None
Dependents living situation	dependents_living dependents_living_99_TEXT			None
Personal living situation	living_situation living_situation_99_TEXT	New options added, denoted by "*" <ul style="list-style-type: none"> 1 = I live alone 2 = I live with my child(ren) 3 = I live with my partner 4* = I live with my parents/family 5* = I live with a friend/roommate 6* = I live sometimes alone but sometimes with others 7* = homeless or shelter 99 = Other (please specify) 89 = I prefer not to answer 	Recoded ID 20 from "Mom and dad" to 4 Recoded ID 24 from "Family friend" to 5 Recoded ID 24 from "Family friend" to 5 Recoded ID 33 from "mostly alone, partner lives with me a few days out of the week" to 6 Recoded ID 38 from "roommate" to 5 Recoded ID 41 to "my parents/partner" to 99 Recoded ID 52 from "With Parents" to 4 Recoded ID 56 from "boyfriend and roommates" to 99 Recoded ID 57 from "parents and sometimes partner" to 99	Yes

			<p>Recoded ID 59 “live with parents and sometimes partner” to 99</p> <p>Recoded ID 67 from “roommate” to 5</p> <p>Recoded ID 88 from “I live with family” to 4</p> <p>Recoded ID 92 from “was living with intimate ptner until no contact order” to 1</p> <p>Recoded ID 97 from “We live in a women’s shelter now” to 7</p> <p>Recoded ID 99 from “I live with my partner, but he works away 50% of the year (one month on, one month off)” to 3</p> <p>Recoded ID 103 from “Homeless, stay with mother during access with children” to 7</p>	
Section 3: Abuse & COVID-19				
Short Form Revised Composite Abuse Scale	<p>CAS_rel</p> <p>CAS_lengt</p> <p>h*</p> <p>CAS_curr</p> <p>_afraid</p> <p>CAS_ever</p> <p>_afraid</p> <p>number_r</p> <p>els</p> <p>CAS.1_1</p> <p>CAS.1_2</p> <p>CAS.1_3</p> <p>CAS.1_4</p> <p>CAS.1_5</p> <p>CAS.1_6</p> <p>CAS.1_7</p> <p>CAS.1_8</p> <p>CAS.1_9</p> <p>CAS.1_10</p> <p>CAS.1_11</p> <p>CAS.1_12</p>	<p>Two new numeric variables created, “CAS_totpre” and “CAS_totdur”, from total scores with imputation where required and appropriate. One additional variable, “CAS_change” (where 1 = increase, 0 = no change, and 2 = decrease) was coded to demonstrate the relationship between pre-COVID-19 and during COVID-19 CAS-R-SF total scores.</p>	<p><i>CAS_length</i></p> <p>Recode ID 27 from “1.5 years” to 1.5</p> <p>Recoded ID 34 from “4 years” to 4</p> <p>Recoded ID 44 from “1 year” to 1</p> <p>Recoded ID 50 from “1 year” to 1</p> <p>Recoded ID 57 from “9 months” to 0.75</p> <p>Recoded ID 114 from “1 ½ months” to 0.125</p>	Yes

CAS.2_1			
CAS.2_2			
CAS.2_3			
CAS.2_4			
CAS.2_5			
CAS.2_6			
CAS.2_7			
CAS.2_8			
CAS.2_9			
CAS.2_10			
CAS.2_11			
CAS.2_12			
CAS.3_1			
CAS.3_2			
CAS.3_3			
CAS.3_4			
CAS.3_5			
CAS.3_6			
CAS.3_7			
CAS.3_8			
CAS.3_9			
CAS.3_10			
CAS.3_11			
CAS.3_12			

Note. Participant ID is determined by the row number associated with the data in the original raw dataset.

*See <https://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=402936>.

**This ID was removed from analysis because the reported monthly income aligned with the household income, and no further questions were replied to after these questions.

Appendix I

Table 1.
Demographic Characteristics

Demographic Variable	Total
	n=23
	n (%)
Gender	
Woman	23 (100.0)
Education level	
High school	3 (13.0)
Some college/university	5 (21.7)
College or university degree	10 (43.5)
Advanced degree (i.e. a Master's or Doctoral degree)	5 (21.7)
Sexual identity	
Bisexual	3 (13.0)
Heterosexual	18 (78.3)
Queer	1 (4.3)
I prefer not to answer	1 (4.3)
Indigenous	
Yes	1 (4.3)
No	22 (95.7)
Ethnicity	
North American Aboriginal origins	1 (4.3)
Other North American origins	9 (39.1)
Asian origins	5 (21.7)
Mixed/multiple	8 (34.8)
Marital status	
Single	4 (17.4)
In a relationship, but not married/common law/engaged	12 (52.2)
Married, common law, or engaged	6 (26.1)
Divorced or separated	1 (4.3)
Income*	
\$20,000-\$49,999	8 (34.8)
\$50,000-\$99,999	11 (47.8)
Did not answer	2 (4.3)

Community	
Large urban center (100,000 people or more)	14 (60.9)
Urban center (30,000-99,999)	6 (26.1)
Rural (30,000 people or less)	2 (8.7)
Unsure	1 (4.3)
Children	
Yes	2 (8.7)
No	21 (91.3)
Living situation	
Live alone	2 (8.7)
Live with my partner	14 (60.9)
Live with parents or family	2 (8.7)
Live with friend/roommate	2 (8.7)
Live in a shelter or homeless	1 (4.3)
Other	2 (8.7)
I prefer not to answer	2 (8.7)
Essential worker	
Yes	1 (4.3)
No	21 (91.3)
I prefer not to answer	1 (4.3)
Sources of income pre-COVID-19*	
Normal (pre-COVID-19 employment)	18 (78.3)
Ontario Disability Support Plan	1 (4.3)
Spousal support	3 (13.0)
Other	1 (4.3)
Did not answer	1 (4.3)
Sources of income during COVID-19*	
Canadian Emergency Response Benefit	15 (65.2)
Normal (pre-COVID-19 employment)	3 (13.0)
Employment insurance	2 (8.7)
Ontario Disability Support Plan	1 (4.3)
Ontario Works	1 (4.3)
Spousal support	1 (4.3)
Other	1 (4.3)
Did not answer	2 (8.7)
Employment pre-COVID-19	
Full-time	11 (47.8)
Part-time	6 (26.1)

Casual	1 (4.3)
Prefer not to answer	4 (17.4)
Did not answer	2 (8.7)
Employment during COVID-19	
Full-time	3 (13.0)
Part-time	6 (26.1)
Unemployed	4 (17.4)
Casual	3 (13.0)
Other	1 (4.3)
Prefer not to answer	4 (17.4)
Did not answer	2 (8.7)

**Percentages, when summed, may exceed 100 due to participants with multiple sources of income.*

Curriculum Vitae

Name: Cara A. Davidson

Post-secondary Education and Degrees: Western University
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2016-2020, BHSc Hons. Spec.

Honours and Awards:

Deans Honor Roll
2016-2020

Ontario Graduate Scholarship
2019-2020

Canada Graduate Scholarship
2020-2021

Related Work Experience

Teaching Assistant
Western University
2021

Research Assistant
Western University
2020-2021

Research Fellowship
Western University
2020

Publications:

Mantler, T., Jackson, T. K., Shillington, K., Walsh, J. E., Tobah, S., Jackson, B., and **Davidson, C. A.** (2021). Factors Influencing Rural Women's Disclosure of Intimate Partner Violence: A Qualitative Study. *SN Social Sciences*.

Jackson, K. T., Mantler, T., Stoyanovich, E., **Davidson, C. A.**, Walsh, J. E., Lemenchick, O., Merner, K., Castles, L. (2021). A Guide to Anticipatory Guidance for Breastfeeding-Related Pain: A Concept Analysis. *Nursing Forum*.