How COVID-19 Precautionary Measures Affect Mental Health, Irritability, and Burnout: Evaluation of Customer Service Employees in British Columbia

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Abstract

Due to COVID-19, the use of masks and other precautionary measures have been strictly implemented in all indoor, public spaces in British Columbia (BC). The largest employment sector in Canada, the service sector, is considerably impacted by the precautionary measures and employs a psychologically vulnerable population. This study considered whether an individuals' perception of the precautionary measures creates psychological distress and whether this impact is over and above their fear of contracting COVID-19. In BC, customer service employees were recruited to participate in an online survey. The results show that this population is experiencing psychological distress, burnout, and high irritability. Fear of COVID-19 is a significant contributor to these outcomes. The degree to which the participants found precautionary measures to be annoying and their beliefs about the necessity of these measures did not significantly contribute to irritability, poor mental health, or burnout over and above the fear of COVID-19. Instead, interpersonal conflict due to the *enforcement* of the restrictions was a notable element in the challenges that this population currently faces. Given the degree to which the COVID-19 disease has impacted individuals, both physically and mentally, more research is needed to understand and mitigate the escalating public mental health crisis.

Keywords: mental health, COVID-19, precautionary measures, customer service employees, burnout

How COVID-19 Precautionary Measures Affect Mental Health, Irritability, and Burnout: Evaluation of Customer Service Employees in British Columbia

In December 2019, the world became aware of a novel coronavirus disease: COVID-19. Originally discovered in Wuhan, China, the highly contagious respiratory infection caused by the SARSCoV-2 virus (World Health Organization [WHO], 2020a), rapidly evolved into a global pandemic (Centers for Disease Control and Prevention, 2020). By January 30, 2020, the WHO (2020b) formally deemed the outbreak a Public Health Emergency of International Concern, and on March 17, 2020, British Columbia (BC) declared, what has become the "longest state of emergency in provincial history" (BC Gov News, 2020b, para. 2), granting extraordinary provincial powers to manage the outbreak (BC Gov News, 2020a, 2020b; Weichel, 2020). As of June 14, 2021, COVID-19 had already infected over 176 million people, in 192 countries, and caused nearly four million COVID-19 related deaths, with additional cases being reported daily (John Hopkins University and Medicine, 2021).

Precautionary Measures

Throughout Canada, substantial rules and restrictions have been implemented to minimize the spread of the disease or slow the rate of infection, including precise guidelines to follow in public and the use of personal protective equipment, hereinafter referred to as *precautionary measures*. In BC, the mandated precautionary measures include physical distancing by maintaining a distance of at least two meters, wearing a mask in all indoor and public spaces, and regularly washing or sanitizing hands and surfaces (BC Centre for Disease Control, 2020; WHO, 2020c; Zussman, 2020).

Initially, even scientific literature presented inconsistent information. For example, Smith and colleagues (2020) discussed the general public's mask usage during the COVID-19 pandemic stating that basic hygiene (e.g., hand washing) should be the primary response to the virus, as opposed to wearing a mask. In contrast, Scheid et al. (2020) emphasized the potential health benefit of wearing a mask in public.

Due to the novelty of COVID-19, information regarding the spread of the virus and the use of precautionary measures was constantly evolving. For example, mirroring advice from national health agencies, public mask use in BC was initially encouraged but not mandatory; however, on November 19, 2020, mask use became mandatory for all public indoor places, with

penalties for those who do not comply (Weichel, 2020; Zussman, 2020). Though the rapid evolution of information was anticipated and necessary at this time, it also led to opposing messages and misinformation. These conflicting messages add uncertainty and confusion around the use of the respective precautionary measures and thus can be counterproductive in minimizing the spread of the virus (Gao et al., 2020; Lanciano et al., 2020; Morgul et al., 2021; Scheid et al., 2020; Smith et al., 2020; United Nations Sustainable Development Group [UNSDG], 2020; Usher et al., 2020).

Conflicting messages can polarize individual perceptions regarding the virus and the efficacy of the imposed precautionary measures (Lanciano et al., 2020; Scheid et al., 2020). Further, varying beliefs and opinions with regards to the necessity or efficacy of COVID-19 precautionary measures can cause interpersonal conflict, discrimination, aggressive behaviours, or psychological distress among individuals (Johnson, 2020; Hensley, 2020; Usher et al., 2020; WSPS, 2020). As the COVID-19 pandemic progresses, it is apparent that the level of perceived risk and response to the pandemic is vastly different between individuals, where some may react emotionally or express panic, and others remain seemingly indifferent (Lanciano et al., 2020; Nicomedes & Avila, 2020).

Fear of Illness

Historically, as seen with prior pandemics, "contagion" expands beyond the realm of the physical illness. Goodwin et al. (2011) highlighted how the perception of others can influence the individual's interpretation of an illness. For example, if others perceive the illness to be highly concerning, the individual perception will follow suit; this creates a snowball effect of elevated fear that can become problematic.

Though past research has shown that a reasonable amount of "fear" towards illness may be useful in terms of minimizing the health risk (e.g., engaging in preventative actions), heightened levels of fear may be detrimental to psychological well-being (Morgul et al., 2021; Usher et al., 2020; Wheaton et al., 2012). These studies highlight that excessive fearfulness can become maladaptive and distressing, often prompting avoidance or obsessive behaviours. In addition, fear can develop, or aggravate, various mental health issues including, anxiety and clinical depression (Morgul et al., 2021; Usher et al., 2020; Wheaton et al., 2012).

Therefore, consideration must be given to the notable anxiety and psychological distress arising from the fear of COVID-19. Though a degree of actualized danger is present, the

uncertainty of this disease and the associated risk creates great apprehension (Fisher et al., 2020; Morgul et al., 2021; Lanciano et al., 2020; UNSDG, 2020; Usher et al., 2020). Accordingly, scales have recently been developed to assess the maladaptive behaviour or impairment in response to COVID-19, notably the Fear of COVID-19 Scale (Ahorsu et al., 2020) and the Coronavirus Anxiety Scale (Lee et al., 2020). A meta-analysis, including over 70,000 individuals, reported significant relationships between fear of COVID-19 and various mental health issues such as anxiety and depression (Şimşir et al., 2021). These augment the consistent findings that support the link between heightened fear of COVID-19 and mental health problems (Ahorsu et al., 2020; Fisher et al., 2020; Lee et al., 2020; Mertens et al., 2020; Tzur Bitan et al., 2020).

Mental Health

The Government of Canada (2017) estimates that nearly one third of Canadians will suffer from a mental illness in their lifetime, and nearly all will be impacted by mental illness in some way, whether directly or indirectly. As the pandemic continues, global and national concern for mental health has become a high priority, prompting a call for immediate mental health action, resources, and funding at all levels (UNSDG, 2020). In August, Eaton (2020) of the Canadian Mental Health Association [CMHA] drafted a submission for consultation with regards to the 2021 federal budget, citing an "unprecedented time of extreme national anxiety with mental health effects like nothing we have seen before" (Introduction section, para. 1). The submission also mentions an increase in suicidality and decline in mental health since the onset of the COVID-19 pandemic. This is seen especially in those with existing mental health conditions, such as anxiety or depression (Eaton, 2020; Morgul et al., 2021; UNSDG, 2020). Globally, the concern for mental health is just as urgent and expansive, citing the need for immediate and comprehensive action to provide emergency mental health support and to mitigate the psychological impact (UNSDG, 2020).

Votta-Bleeker (2020) states the likelihood that the detrimental impact to public health will primarily be in the form of psychological distress and a decline in mental well-being, as contrasted with any direct physical illness from COVID-19. Moreover, the long-lasting psychological distress that individuals are experiencing is two-fold in origin: fear and uncertainty of the disease itself and, paradoxically, angst from the very measures that have been

put into place to protect them (Fisher et al., 2020; Lanciano et al., 2020; Morgul et al., 2021; Usher et al., 2020).

It has become increasingly apparent that individuals who are required to adhere to imposed restrictions are experiencing negative mental health impacts, even without direct experience to the virus itself (Morgul et al., 2021; UNSDG, 2020; Usher et al., 2020). As an example, Fisher and colleagues (2020) conducted an online survey in Australia to evaluate the negative outcomes of the imposed COVID-19 restrictions on the public. Their data was comprised of nearly 14,000 adult respondents. The researchers detected a decline in mental health, including an increase in depression, anxiety, and irritability, due to the impact of the COVID-19 restrictions. Lanciano and colleagues (2020) also noted that the greatest perceived risk was not contracting the virus, but the economic, social, and psychological impact of the government-imposed pandemic response. Similar to Fisher and colleagues, Fiorenzato and colleagues (2021) conducted a study investigating the psychological impact of the COVID-19 restrictions in Italy. They also reported a decline in mental health and increase in cognitive issues and identified the most vulnerable groups for mental health concerns as women, those under 45 years old, and individuals who are unemployed or underemployed. Finally, those who perceived the impact and restrictions as less negative displayed better mental health (Fisher et al., 2020). Although these studies were conducted outside of Canada where the pandemic responses and restrictions may slightly differ, the underlying issues are similar—notably the lack of autonomy and control (Fisher et al., 2020; Lanciano et al., 2020).

Workplace Implications

As COVID-19 precautionary measures are mandated in all public indoor settings, for many people—particularly customer service employees—this encompasses the *workplace*. The WHO (2020b) deemed any occupation that experiences high exposure to the general public (e.g., face-to-face customer service position) as "medium risk." This designation requires enhanced cleaning protocols, use of additional personal protective equipment, and additional precautions to maintain distancing. Further, some companies have opted to mandate restrictions at different times. For example, some companies mandated the use of masks prior to it becoming legally required (e.g., BC Ferries, Starbucks, TJX, etc.; CBC News, 2020). Though the number of precautionary measures in place and severity of enforcement may differ between

workplaces, the restrictions still implicate extensive changes to the work environment, job duties, and customer engagement.

The service sector in Canada is the largest sector and represents the majority of Canadian workers (Statistics Canada, 2017a). Retail and food service combine to be the largest employment industry in BC, employing nearly half a million workers in 2018 (WorkBC, 2020). Service industry employees hold customer-facing positions, implying direct and consistent public interaction. For these reasons alone, customer service employees are an integral component of the Canadian workforce and society. Further, the service sector in Canada primarily consists of female employees, young adults, and low-income earners (Statistics Canada, 2017a; WorkBC, 2020)—key populations deemed high risk for psychological distress due to the COVID-19 pandemic (Chaturvedi et al., 2021; Fisher et al., 2020; Lee et al., 2020; Tzur Bitan et al., 2020; Usher et al., 2020).

Even prior to the COVID-19 pandemic, poor psychological health in the workplace was a developing and multi-faceted concern. Although national guidelines had previously been introduced to mitigate the evolving workplace mental health concerns (Canadian Standards Association, 2018), the issue was still prevalent. The Mental Health Commission of Canada ([MHCC], 2020) reported that approximately 70 percent of Canadian employees are worried about the detrimental mental health impact from their current workplace environment. The effects of such concerns are widespread and impactful on many levels. This notion is confirmed with mental health concerns accounting for nearly one third of all disability claims, making mental health problems the leading cause of disability in Canada (MHCC, 2015). The MHCC (2020) added that approximately half a million Canadians in any given week are unable to work due to mental health problems. Further, the MHCC (2015) highlighted the magnitude of the issue in a financial context, announcing an annual cost of approximately $20 billion dollars from workplace mental health issues. This equates to nearly half of the approximate $50 billion-dollar costs for all Canadian mental health issues. The COVID-19 pandemic has added change, challenges, and additional stressors to a population with a demonstrated psychological risk: employees of the Canadian service sector (Fisher et al., 2020; Houghton et al., 2011; Lee et al., 2020; Statistics Canada, 2017a; Tzur Bitan et al., 2020; WorkBC, 2020; WorkSafeBC, 2020; UNSDG, 2020; Usher et al., 2020).

Customer Service Employees

An obvious role of the customer service employee is customer interactions, during which employees are generally required to maintain emotional composure regardless of the situation. This is also known as *emotional labour* and is notably linked to employee burnout (Hochschild, 1983/2012; Maslach & Leiter, 2016). Unfortunately, a palpable outcome of the aforementioned polarized pandemic perceptions is the heightened emotional response among individuals, including increased aggression (e.g., spitting or yelling), extreme behaviours, and in some cases violence (Johnson, 2020; Hensley, 2020; Usher et al., 2020; Workplace Safety and Prevention Services [WSPS], 2020). However, interpersonal interactions do not need to be extreme to become mentally burdensome; *workplace incivility* is defined as "low intensity deviant behavior with ambiguous intent to harm the target, in violation of workplace norms for mutual respect" (Andersson & Pearson, 1999, p. 457), and can be perpetrated by anyone in the workplace, including coworkers or customers. The presence of workplace incivility can add to workplace stressors and eventually lead to workplace burnout (Sliter et al., 2010). Thus, the requirement to adhere to all precautionary measures and regularly engage with customers may add a potentially distressing component to public interactions and the workplace environment (Kim & Qu, 2019; Usher et al., 2020; WSPS, 2020) and exact an even greater cost associated with emotional labour.

Further, customer service employees may perceive a loss of control or lack of autonomy when directed to conform to strict workplace requirements, such as the COVID-19 precautionary measures. Shojaee and French (2014) noted the strong positive relationship between internal locus of control and autonomy, and mental health. This relationship suggests that the more an individual believes they have autonomy and control over their actions and ultimate outcomes, the better their mental well-being (Shojaee & French, 2014). Therefore, the restrictions may be especially distressing if they do not consider personal choice, do not feel adequate, do not align with personal beliefs, cause annoyance, or erode job satisfaction (Scheid et al., 2020; Usher et al., 2020).

Burnout

The term *burnout*, coined in the 1970s, focuses on the psychological distress resulting from discontentment of workplace environments, demands, and requirements (Iacovides et al., 2003; Maslach & Leiter, 2016). Professionally, the impact of burnout can be observed as high

turnover or absenteeism (Maslach & Leiter, 2016). On a personal level, burnout is multifaceted and is associated with physical illnesses, emotional and mental distress, and interpersonal conflict (Chiu et al., 2015; Swider & Zimmerman, 2010). Some of the key factors related to workplace burnout include workload, control, and job satisfaction. If an employee perceives they have little control over their work environment, or deems their job duties undesirable (monotonous, overwhelming, etc.) it can exacerbate job dissatisfaction and cause undue mental distress (Iacovides et al., 2003).

Furthermore, the perception of meaningful work is negatively related to burnout, in that, employees are less likely to experience burnout if they perceive their work as significant or important (Allan et al., 2019). Therefore, regarding the COVID-19 precautionary measures, if employees are obligated to engage in job duties that they deem unnecessary or excessive, thus meaningless, this can generate a negative psychological response. Moreover, if an employee feels physically or mentally vulnerable (perception of insufficient precautionary measures), and thus expends their emotional energy without sufficient recovery time, they are also likely to suffer from burnout (Iacovides et al., 2003; Swider & Zimmerman, 2010).

Another contributing factor to burnout is job stress. Job stress can become problematic even if the stress is initially considered low. Annoyances or irritations, though they may seem outwardly trivial, can accumulate to create intolerable levels of stress (Iacovides et al., 2003; Maslach & Leiter, 2016). Further, if an individual is highly irritable, they may quickly become annoyed or angry (Holtzman et al., 2015). Undoubtedly, as the expression of irritability can often be perceived as aggressive or hostile (Holtzman et al., 2015), high levels of irritability may become problematic in a workplace setting. Finally, if an individual cannot avoid these minor stressors or annoyances due to a lack of control, this in itself can lead to psychological distress and burnout (Iacovides et al., 2003; Maslach & Leiter, 2016).

Interestingly, due to COVID-19, an additional term regarding burnout has recently emerged: *COVID Burnout*. In an interview with Dr. Ingrid Söchting (Director of the University of British Columbia Psychology Clinic), Garel (2020) examined the conceptual similarities further. Though, not exclusive to workplace environments, the underlying notion is the same: Prolonged or extreme exposures to stressors can lead to emotional exhaustion and fatigue and is detrimental to mental health. Even though burnout and irritability are not, in themselves, clinical impairments, they strongly correlate with various negative effects, namely physical and

psychological exhaustion, as well as clinical mental health diagnoses (Chiu et al., 2015; Holtzman et al., 2015; Iacovides et al., 2003; Kanai-Pak et al., 2008; Kristensen et al., 2005; Maslach & Leiter, 2016; Papathanasiou, 2015; Rahmati, 2015).

In sum, long-term mental health impacts due to the COVID-19 pandemic are foreseen (Gao et al., 2020; Usher et al., 2020; Votta-Bleeker, 2020) but the degree to which we will be impacted is largely unknown (Kelland, 2020). Eaton (2020) signifies the broad impact of the issue by asserting that the necessary economic recovery from the COVID-19 pandemic will only be attainable if steps are taken to support a mentally healthy workforce.

The current COVID-19 research, though limited, is essential in developing a comprehensive understanding of the pandemic's influence on individuals, their responses, and their respective mental health. Understanding more about the impact of COVID-19 related precautionary measures in the workplace is critical in our efforts to address the mental health needs of the largest employment sector in this country (Statistics Canada, 2017a). This study looked at customer service employees in BC—a large and inherently susceptible population— and the psychological impact of the newly imposed COVID-19 requirements on their mental health (Statistics Canada, 2017a; Statistics Canada, 2017b; WorkSafeBC, 2020). The goal of this study was to determine if individuals who report a higher fear of COVID-19 exhibit higher levels of irritability and burnout and lower mental health, and if the perceptions of precautionary measures (annoyance, excessiveness, and necessity) impact burnout, irritability, and mental health over and above the fear of COVID-19.

Method

Participants

Using convenience sampling, participants were recruited through the psychology research pool at a medium-sized university in western Canada, and social media platforms (e.g., Reddit, Facebook, LinkedIn, and Instagram) to complete an online survey conducted through Qualtrics. Participants were screened by the following inclusion criteria: currently employed in British Columbia, in a customer service role, and 16 years or older. The initial sample consisted of 186 participants; however, participants who failed to meet the inclusion criteria were excluded. Additionally, participant data was excluded if the duration was less than five minutes or if the data was less than 50% complete, leaving a total of 109 participants.

The participants were primarily female (n = 93; 85%), 14% identifying as male (n = 15), and one participant who selected *Prefer not to say.* Participants reported a wide age range, from 18-77 years old (M = 27.9, SD = 12.6), the modal age was 21 years old (n = 16). Slightly over half (n = 56; 51%) of the participants indicated that they had experienced mental health challenges prior to the pandemic. In addition, 91% (n = 99) indicated that neither they, nor anyone in their immediate household had tested positive for COVID-19. Participants were widely represented in the following: ethnicity, levels of education and, health region, as depicted in Table 1.

Measures

Brief Irritability Test (BITe)

The Brief Irritability Test (Holtzman et al., 2015) was used to assess irritability. This robust measure was chosen due to its short and concise attributes, lack of gender bias, and generalizability to the general adult population, as opposed to a focus on children or clinical populations. This 5-item self-report scale references a specific time period as follows: "Please indicate how often you have felt or behaved in the following ways, during the past two weeks, including today." A sample item reads, "I have been grumpy." Responses range on a 6-point, scale from 1 (*never*) to 6 (*always*). A higher mean score represents higher irritability. Cronbach's alpha was reported as .93.

Fear of COVID-19 Scale

The Fear of COVID-19 Scale (Ahorsu et al., 2020) is a recently developed scale with good psychometric properties (α = .91). Designed to aid in the clinical intervention and understanding of the current psychological response to COVID-19, the Fear of COVID-19 Scale assesses both emotional and physical reactions. This 7-item scale uses concise and straightforward language such as "It makes me uncomfortable to think about COVID-19." Responses to this scale range from 1 (*strongly disagree*) to 5 (*strongly agree*). Results were summed giving a score range of 7 to 35, with a higher sum representing a higher fear of COVID-19 (Ahorsu et al., 2020; Tzur Bitan et al., 2020).

Patient Health Questionnaire-9 (PHQ-9)

The PHQ-9 (Kroenke et al., 2001) is commonly used as a primary care tool to assess depression and associated mental illness. There are nine items, with reference to timing (e.g., "How often have you been bothered by the following over the past 2 weeks … little interest or

pleasure in doing things?"). Responses were reported on a 4-point scale (0 = *Not at all* to 3 = *Nearly every day*), with a total score range of 0–27. A summation of higher total score indicates higher level of depression. In the current study, Cronbach's alpha was acceptable ($\alpha = .91$).

Mental Health Index-5 (MHI-5)

The Mental Health Index-5 (Houghton et al., 2011) is a widely used, condensed scale with good reliability ($\alpha = .88$). Not designed to be a clinical assessment, the MHI-5 is intended to rate mental health in the general population without a gender or age bias. The scale consists of five items, rated on a 6-point frequency scale (1 = *none of the time* to 6 = *all of the time*). There is a timing parameter indicated in the item, such as "How much of the time, during the past month, have you felt calm and peaceful?" All responses were summed, then transformed to a 0–100 scale for analysis, where a higher number is indicative of better mental health. Note, two of the items are reverse coded, the example given above is one of the reverse coded questions (Houghton et al., 2011; McCabe et al., 1996).

Copenhagen Burnout Inventory (CBI)

Designed to be used together or independently, the Copenhagen Burnout Inventory (Kristensen et al., 2005) consists of three subscales: personal burnout, work-related burnout, and client-related burnout. This measure is widely used, is appropriate for culturally diverse populations, and is openly available for public use. In this study, burnout was measured using the following two subscales: client-related burnout, and work-related burnout. Both subscales use a 5-point frequency scale from 0% (*never / to a very low degree*) to 100% (*always / to a very high degree*), where a higher percentage equates to a higher degree of burnout. The personal burnout subscale was excluded in this study, as some of the questions overlapped with items found in the PHQ-9 and MHI-5 scales.

Client-related Subscale (CBI-C). Though this subscale is not specific to customer service employees and the term *client* is used, the scale allows for an adaptation of the basic terminology. In this study, the term *customer* replaced the term *client*. There are six questions in this subscale, including "Does it drain your energy to work with customers?" Cronbach's alpha was acceptable ($\alpha = .92$).

Work-related Subscale (CBI-W). This subscale consists of seven questions, such as "Do you feel burnt out because of your work?" There is one reverse scored item. Cronbach's alpha was acceptable ($\alpha = .92$).

Annoyance Factor

Currently, there is no known scale to measure annoyance pertaining to the use of COVID-19 precautionary measures. Therefore, annoyance was measured using a self-developed scale consisting of six items. Responses were rated on a 5-point Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*), with final scores reported as means. An example item is "Overall, the precautionary measures that I am required to use at work annoy me."

The final items were examined with an exploratory factor analysis, using the Principal Axis Factoring method. Upon observation of eigenvalue over 1, it was determined that all the questions loaded onto one single factor, with loadings of .62–.76; this was confirmed by a visual inspection of the scree plot. Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartletts Test of Sphericity were assessed: no violations were present. All six questions were retained and presented good reliability (α = .86; see Table 2).

Necessity Scale

As in the case of the Annoyance Factor, there is no known scale that measures the perceived necessity of the COVID-19 precautionary measures. Therefore, necessity was also measured using a self-developed scale consisting of seven items, including two reverse-scored items. Responses are rated on a 5-point, Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Final scores were reported as means. An example item is "All the precautionary measures that my employer has put in place are essential for my own personal health and safety."

An exploratory factor analysis was conducted using the Principal Axis Factoring method. It was determined that six of the seven initial questions loaded onto one factor, as two eigenvalues were over 1; however, an assessment of the scree plot suggested one factor. One question was removed, and the exploratory factor analysis was rerun. The remaining six questions were retained, with loadings of .69–.86 (see Table 3). Cronbach's alpha presented good internal consistency (α = .89). There was no violation of assumptions as per KMO and Bartletts Test of Sphericity.

Excessiveness

As there are no known, valid survey pertaining to the perception of excessive precautionary measures, the perception of excessiveness was intended to be measured by a newly developed single question: "Overall, I feel the precautionary measures that are required

at my workplace are_____.” The question was presented on a sliding scale with three written indicators: *Insufficient, Just right,* and *Excessive*. No numerical indicators were displayed. The intent was that this question be analyzed as a non-linear variable, using a quadratic function. Unfortunately, due to survey design error I was unable to obtain results from the Excessiveness item.

Procedures

After providing consent, participants were presented with a 10 to 15 minute online survey. Participants answered questions pertaining to demographics, current employment, prior mental health history, prior exposure to COVID-19, and a series of measures including, the Fear of COVID-19 Scale (Ahorsu et al., 2020), Brief Irritability Test (Holtzman et al., 2015), Patient Health Questionnaire-9 (Kroenke et al., 2001), Mental Health Index-5 (Houghton et al., 2011), Copenhagen Burnout Inventory (work-related and customer-related subscales; Kristensen et al., 2005), Annoyance Factor, Necessity Scale, and the single Excessiveness question. Additionally, two qualitative questions were asked regarding their personal experiences: “Describe a challenging experience you’ve had at work, due to COVID-19” and “Describe a positive experience you’ve had at work, due to COVID-19.” Participants were debriefed at the end of the survey.

Students at Kwantlen Polytechnic University were offered course credits for applicable courses. No compensation was offered for participants recruited through social media.

Results

IBM SPSS Statistics (Version 26) was used to carry out all statistical analysis. Outliers were assessed using Cook’s Distance and Mahalanobis’ Distance. No outliers were removed from any analysis. Finally, there was no missing scale data to account for, as all scales were complete.

Workplace Demographics

Nearly half of the 109 participants reported working in *retail* (45%), with the remaining being employed in *personal service* (25%), *food and beverage service* (5%), and *other* (26%). Hours worked per week varied widely ($M = 23.8$, $SD = 12.1$), as did the reported number of months employed ($M = 28.9$, $SD = 24.1$).

Use of masks and other precautionary measures were consistently reported among participants (see Figure 1). As well, 98% of participants reported that customers were also required to wear a mask at their workplace.

In comparison to previous findings in non-clinical pre-COVID populations, this sample consistently scored unfavorably in terms of mental health. For example, a longitudinal research study looking at human service industry workers in Australia reported a range of mean scores, from 73.8 (care workers) to 76.8 (health care workers) using the MHI-5 (Milner et al., 2019), in comparison to a substantially lower mean score of 44.7 in the current sample, suggesting poorer mental health. The present sample reported higher burnout scores for both work-related ($M = 54.8$, SD = 23.4) and client-related ($M = 48.6$, $SD = 25.1$) subscales compared to previous research (work-related: $M = 33.0$, $SD = 17.7$; client-related: $M = 30.9$, $SD = 17.6$; Kristensen et al., 2005). Additionally, a study assessing irritability among Canadian students using the BITe reported a mean score of 13.0 ($SD = 4.67$; Holtzman et al., 2015), in comparison to a mean score of 16.4 ($SD = 5.66$) reported in the present sample.

A recent COVID-19 related study used the PHQ-9 to assess a non-clinical North American population during the pandemic. The authors reported a mean score of 7.81 ($SD = 6.16$; Shamblaw et al., 2021) whereas the present sample had a mean score of 8.58, again suggesting poorer mental health in this sample. Notably, this sample's scores ($M = 18.7$, $SD = 6.60$) were comparable to the Fear of COVID-19 scores in a US population ($M = 18.6$, SD = 5.60; Warren et al., 2021). See Table 4 for the descriptive statistics for all measures.

Correlational Relationship

The current study found Fear of COVID-19 was significantly, positively, and moderately correlated with irritability, work-related burnout, client-related burnout, and poor mental wellbeing, as assessed by the PHQ-9; and was negatively correlated with mental health as assessed by the MHI-5 (see Table 5 for all correlations). Although, the perception of precautionary measures did not correlate with mental health as expected, annoyance was significantly and slightly correlated with irritability and work-related burnout. Similarly, necessity was significantly, positively correlated with *client-related* burnout.

Hierarchical Regression Analyses

Multiple hierarchical regressions were used to determine if individual perception (annoyance and necessity) of the precautionary measures required at work significantly

contributed to burnout, irritability, and poor mental health over and above the fear of COVID-19. For each regression, Fear of COVID-19 was entered in the first block, and the predictor variables—Necessity Scale and Annoyance Factor—were entered in the second block. The following five outcome variables were assessed: Brief Irritability Scale (see Table 6), Patient Health Questionnaire-9 (see Table 7), Mental Health Index-5 (see Table 8), Burnout (work-related subscale; see Table 9), and Burnout (client-related subscale; see Table 10).

All assumptions were met for each multiple regression. Durbin-Watson statistics ranged from 1.654 to 2.016, confirming independence of residuals. There was homoscedasticity, as determined by visual inspections of plots of studentized residuals versus unstandardized predicted values. The assumption of linearity was met by examinations of partial regression plots and a plot of studentized residuals against the predicted values. There was no indication of multicollinearity, as assessed by tolerance values greater than 0.1. The assumption of normality was met by assessments of Q-Q Plots. Outliers were assessed by Mahalanobis and Cook's Distance; no outliers were removed.

Fear of COVID-19 was a significant predictor of all five dependent variables, accounting for between 10% and 19% of the variance. Contrary to expectations, factors designed to assess individuals' responses to precautionary measures (i.e., necessity and annoyance) did not significantly account for any additional variance (BITe: $\Delta R^2 = .034$; PHQ-9: $\Delta R^2 = .000$; MHI-5: $\Delta R^2 = .002$; CBI-W: $\Delta R^2 = .038$; CBI-C: $\Delta R^2 = .044$).

Exploratory Analyses

All exploratory analyses were conducted with an adjusted significance level using a Bonferroni correction. For exploratory analysis, significance is reported as $p < .02$.

Gender Differences

An independent-samples *t*-test was used to examine differences between male ($n = 15$) and female ($n = 93$) participants among all variables. As depicted in Figure 2, results indicated significant gender differences for burnout, irritability, and mental health. There were no significant differences for annoyance, necessity, or fear of COVID-19. Additionally, due to a violation of equal variances, a Welch's t-test was used to evaluate gender and mental health as assessed by MHI-5 and PHQ-9.

Prior Mental Health Differences

A *t*-test was used to evaluate differences between those who reported prior mental health challenges ($n = 56$) and those who did not ($n = 53$). Results indicated that those who experienced prior mental health challenges reported higher burnout, irritability, and poorer mental health (see Figure 3). There were no significant differences for annoyance or necessity.

Health Region Differences

Though there were not enough participants from each health region to conduct in-depth analysis for each region, exploratory analyses suggest that health regions may report meaningful differences. For example, health regions were grouped based on comparable Fear of COVID-19 scores, with Fraser Health ($M = 19.6$, $SD = 6.43$) and Vancouver Coastal ($M = 18.9$, $SD = 5.76$) forming one group, and Interior Health ($M = 16.4$, $SD = 8.53$), Island Health ($M = 12.5$, $SD = 4.95$) and Northern Health ($M = 12.2$, $SD = 4.07$) forming a second group. From this perspective, a 2 x 2 ANOVA shows significant differences in burnout scores between the health regions; Fraser/Vancouver Coastal reported higher work-related ($M = 58.5$, $SD = 21.8$) and client-related ($M = 53.2$, $SD = 23.5$) burnout, $F(107) = 17.1$, $p < .001$, than Interior/Island/Northern ($M = 34.7$, $SD = 22.1$; $M = 23.5$, $SD = 19.2$), $F(107) = 24.3$, $p < .001$.

Qualitative Analysis

A content analysis was conducted to evaluate the two qualitative questions: "Describe a challenging experience you've had at work, due to COVID-19" and "Describe a positive experience you've had at work, due to COVID-19." Notably, 20% of participants either left the *positive* field blank, or indicated *none* or *nothing*, in comparison to just 5% left blank for *challenges*.

Several core themes were identified; interestingly, many of the core themes for both challenging and positive experiences were related to interpersonal interactions. The challenges reported were primarily pertaining to the enforcement of COVID-19 precautionary measures and the resulting interpersonal conflict, issues with the use of precautionary measures, and the fear of becoming infected with the COVID-19 virus. Though many participants reported feeling annoyed with the use of the precautionary measures, the challenges due to enforcement of the precautionary measures were most prevalent. Many participants reported being victims of aggression, anger, or abusive behaviour in response to the enforcement. Some participants also reported fearing for their safety.

Conversely, support and encouragement from both customers and employers were commonly reported as positive experiences. Participants reported supportive gestures such as people being polite, telling jokes, or simply being thanked. Additional positive themes highlighted a better workplace in terms of reduced workload, better hours (e.g., no late-night hours), and physical environment (e.g., cleanliness, quieter).

Discussion

This study assessed the mental health impact of COVID-19 precautionary measures on the customer service population in BC. The service industry is the largest industry in Canada (Statistics Canada, 2017a), encompassing most British Columbian workers; approximately half a million of which are employed in food service or retail (WorkBC, 2020). Notably, this population primarily consists of female employees, young adults, and low-income earners (Statistics Canada, 2017a; WorkBC, 2020), which also describes the population characteristics that are experiencing the highest psychological distress from the COVID-19 pandemic (Chaturvedi et al., 2021; Fisher et al., 2020; Warren et al., 2021). Therefore, due to the nature of the customer-facing role and the risks associated, customer service employees are an important population to assess, with the goal of understanding and easing any additional stressors that may be plaguing this vital group.

The sample characteristics were representative of the target population: primarily female and young adults (reporting a mean age of 27.9 years old). As well, with over 50% of participants indicating that they have experienced prior mental health challenges, the sample characteristics also align with the high-risk populations for COVID-related psychological distress, as highlighted in previous research (Chaturvedi et al., 2021; Fisher et al., 2020; Warren et al., 2021). Further, the data collected in this study corroborates the previous research findings; for example, women reported significantly higher irritability, burnout, and depressive symptoms (as measured by the PHQ-9) than men. Likewise, those individuals who reported prior mental health challenges also reported significantly higher COVID-19 anxiety, burnout, irritability, and poorer mental health (as assessed by the PHQ-9 and MHI-5) than their counterparts. It is particularly noteworthy that the sample demonstrated heightened levels of mental distress and burnout as compared to pre-COVID-19 scale norms.

As expected, and consistent with prior research, the fear of COVID-19 was a significant predictor of poor mental health (Şimşir et al., 2021), irritability, and burnout. Şimşir and

colleagues (2021) conducted a meta-analysis linking fear of COVID-19 with high rates of anxiety and depression and the findings were consistent with this research. As predicted, a relationship was found between fear of COVID-19 and necessity, which suggests that as an individual's fear of COVID-19 increases, they will deem the precautionary measures as more necessary.

As predicted, significant relationships were found between annoyance and irritability, and work-related burnout, indicating that the more the employee perceives the precautionary measures negatively, the more mental distress they will experience. This corresponds with Fisher and colleagues (2020) research which indicated that those who perceived the restrictions as less negative, displayed greater mental health. Finally, a positive relationship was observed between necessity and fear of COVID-19, and customer-related burnout implying that those who believed the precautionary measures to be highly necessary were also experiencing high burnout and high fear of COVID-19.

Contrary to predictions, perception of the precautionary measures did not significantly account for any of the variance over and above the fear of COVID-19. Indeed, individuals did experience annoyance associated with the precautionary measures and there were some variations in terms of how necessary individuals felt they were. However, these factors were not critical in predicting mental health outcomes.

Because personality is associated with mental health (Góngora et al., 2017), individual differences may have contributed to the outcome, but these were not assessed in the current study. Using the regression model, only a small amount of the variance of the dependant variables was accounted for; however, upon analysis of the qualitative data, a potential missing piece of the puzzle was found: interpersonal interactions. Two of the four core themes identified during the content analysis were entirely based on interactions with other people. Many participants reported enforcement of the precautionary measures as a challenge that often resulted in customer perpetrated workplace incivility, which then enhanced emotional labour; both of which are contributing factors to burnout (Hochschild, 1983/2012; Maslach & Leiter, 2016; Sliter et al., 2010). In contrast, many customer service employees also reported positive interpersonal interactions, noting that a simple gesture of kindness could make their day better. This meaningful interpersonal data was represented in both challenging and positive

experiences and provides a more comprehensive understanding of what the customer service employee population is experiencing.

Ultimately, though the precautionary measures can be perceived as annoying, perception of the precautionary measures is not a main contributing factor to the mental distress that customer service employees are experiencing. Instead, it appears that fear of the physical illness and negative interpersonal interactions may be more psychologically detrimental. Nonetheless, the customer service population experiences symptoms of burnout and struggle with mental health at levels even higher than they have historically.

Limitations and Future Directions

Due to the novelty of the COVID-19 pandemic, there are broad gaps in the current literature. This created a limitation as there was little relevant research to draw upon for this study. Additionally, although sufficient power was achieved to detect a medium effect size, the small sample size was not sufficiently powered to detect a small effect size; this may explain why some variables did not reach significance. Further, participant self-selecting could create selection-bias in favor of participants who engage in online survey research; additionally, because all measures were self-reported, there is a potential for response bias. Finally, as the pandemic response (e.g., restrictions and precautionary measure requirements) may vary geographically, the findings may not be generalizable outside of Canada or North America.

The qualitative results highlight interpersonal interactions as an important factor to be examined in future research. Negative interpersonal interactions may be captured by the concept of workplace incivility and should be evaluated. Likewise, positive interpersonal interactions may also be considered as a potential moderating variable. As burnout was a predominant finding in this study, additional risk factors for burnout may also be assessed, such as lack of support, fairness, or employer support (Maslach & Leiter, 2016). Future research should evaluate the impact of precautionary measures on those with prior mental health challenges and investigate differences among health regions while considering these additional variables. Finally, additional research may also explore ways to mitigate workplace burnout and reduce psychological distress due to the COVID-19 pandemic.

Conclusion

The customer service population in BC is experiencing high levels of psychological distress and burnout during the COVID-19 pandemic. The mental health of this population is,

in part, impacted by the fear of COVID-19. However, what also appears to impact mental well-being is the duty to enforce the precautionary measures and restrictions in the workplace, and subsequently the unfavorable responses from customers. Use of the precautionary measures, though perceived as somewhat annoying, are generally viewed as necessary and do not seem to impact this population's psychological well-being.

While beyond the scope of this study, the data suggest that to mitigate mental health issues, employers should take an active position in ensuring a physically and psychologically safe working environment for all employees. During this time, employers may express appreciation, encourage employee engagement, and swiftly respond to concerns. Additionally, providing greater support and reducing the burden of rule enforcement may reduce burnout in employees.

The CMHA emphasized the degree to which the pandemic is taking a toll on the mental health of Canadians (Eaton, 2020); therefore, the expressions of anger and irritability are not entirely unexpected, but they are detrimental. This is a time that Canadians need not find adversaries in one another, but a time to maintain kindness and support for each other. We should remember that what we say and how we act can be monumental—we are all in this together.

Tables

Table 1

Demographic of Participants

	n	%
Ethnicity (*n* = 108)		
Caucasian	53	49
South Asian	24	22
South East Asian	4	4
Latin American	4	4
Korean	3	3
Arab	3	3
Chinese	3	3
Filipino	3	3
Other	11	10
Education (*n* = 109)		
Less than high school diploma	2	2
High school diploma	22	20
Some university	72	66
Bachelor's degree	10	9
Master's / Doctorate degree	3	3
Health Region (*n* = 109)		
Fraser Health	72	66
Vancouver Coastal Health	20	18
Interior Health	9	8
Northern Health	6	6
Island Health	2	2

Table 2

Results from an Exploratory Factor Analysis of the Annoyance Factor

Annoyance Factor item	Factor loading
	1
Overall, the precautionary measures that I am required to use at work make me uncomfortable.	**.76**
Overall, the precautionary measures that I am required to use at work make my job duties more difficult.	**.74**
Overall, the precautionary measures that I am required to use at work cause me stress.	**.73**
Overall, the precautionary measures that I am required to use at work bother me physically.	**.73**
Overall, the precautionary measures that I am required to use at work annoy me.	**.65**
Overall, the precautionary measures that I am required to use at work make my job less appealing.	**.62**

Note. N = 109. Factor loadings above .40 are in bold.

Table 3

Results from an Exploratory Factor Analysis of the Necessity Scale

Necessity Scale item	Factor loading
All the precautionary measures that my employer has put in place are essential for the personal health and safety of other people.	**.86**
All the precautionary measures that my employer has put in place are essential for my own personal health and safety.	**.86**
Masks (or face shields) are necessary even if physical distancing is available.	**.79**
The precautionary measures do more harm, than they do good. (R)	**.72**
All the precautionary measures that my employer has put in place are effective in preventing the spread of COVID-19.	**.71**
All the precautionary measures that my employer has put in place are effective in preventing the spread of COVID-19.	**.69**

Note. N = 109. Factor loadings above .40 are in bold. One reverse-scored item is indicated with an (R).

Table 4

Descriptive Statistics of All Measures

	M	SD
Fear of COVID-19 (Range 7-35)	18.70	6.60
Annoyance Factor (Range 1-5)	2.80	0.95
Necessity Scale (Range 1-5)	4.27	0.73
Brief Irritability Test (Range 5-30)	16.40	5.66
Mental Health Index -5 (Range 0-100)	44.70	20.2
Patient Health Questionnaire -9 (Range 0-27)	8.58	6.58
Copenhagen Burnout Inventory (work-related) (Range 0-100)	54.80	23.4
Copenhagen Burnout Inventory (client-related) (Range 0-100)	48.60	25.1

Table 5

Correlational Matrix

Variable	1 Annoyance	2 Necessity	3 FCV-19S	4 BITe	5 MHI-5	6 PHQ-9	7 CBI-W	8 CBI-C
1 Annoyance	–							
2 Necessity	-.31*	–						
3 FCV-19S	.09	.29**	–					
4 BITe	.20*	-.03	.34**	–				
5 MHI-5	.00	-.11	-.42**	-.74**	–			
6 PHQ-9	.02	.13	.44**	.68**	-.78**	–		
7 CBI-W	.20*	.11	.33**	.63**	-.65**	.64**	–	
8 CBI-C	.13	.23*	.35**	.40**	-.43**	.41**	.73**	–

Note. FCV-19S = Fear of COVID-19 Scale; BITe = Brief Irritability Test; MHI-5 = Mental Health Index -5; PHQ-9 = Patient Health Questionnaire; CBI-W = Copenhagen Burnout Inventory (work-related); CBI-C = Copenhagen Burnout Inventory (client-related).

*p = .05, **p = .01

Table 6

Fear of COVID-19 and Precautionary Measures: Irritability (BITe)

Model		Coefficients				95% Confidence Interval	
		B	*SE*	β	*t*	Lower	Upper
1	(Constant)	11.0	1.55	--	7.10	7.91	14.0
	Fear of COVID	.29	.08	.34	3.74**	0.14	0.45
2	(Constant)	11.4	3.95	--	2.88	3.54	19.2
	Fear of COVID	.30	.08	.35	3.69**	0.14	0.47
	Annoyance	.82	.57	.14	1.42	-0.32	1.95
	Necessity	-.68	.78	-.09	-0.88	-2.23	0.86

Note. Model 1 summary: $F(1, 107) = 14.0$, $p < .001$; adjusted $R^2 = .11$. Model 2 summary: $F(3, 105) = 6.15$, $p = .001$; adjusted $R^2 = .13$.

*$p < .05$, **$p < .001$

Table 7

Fear of COVID-19 and Precautionary Measures: Depressive Symptoms (PHQ-9)

Model		Coefficients				95% Confidence Interval	
		B	*SE*	β	*t*	Lower	Upper
1	(Constant)	.31	1.71	--	0.18	-3.08	3.70
	Fear of COVID	.44	.09	.44	5.12**	0.27	0.61
2	(Constant)	.76	4.46	--	0.17	-8.09	9.60
	Fear of COVID	.45	.09	.45	4.80**	0.26	0.63
	Annoyance	-.14	.65	-.02	-0.22	-1.42	1.14
	Necessity	-.02	.88	-.003	-0.03	-1.77	1.72

Note. Model 1 summary: $F(1, 107) = 26.3$, $p < .001$; adjusted $R^2 = .19$. Model 2 summary: $F(3, 105) = 6.15$, $p < .001$; adjusted $R^2 = .18$.

*$p < .05$, **$p < .001$

Table 8

Fear of COVID-19 and Precautionary Measures: Mental Health (MHI-5)

Model		Coefficients				95% Confidence Interval	
		B	SE	β	t	Lower	Upper
1	(Constant)	79.0	5.33	--	14.8	68.6	89.6
	Fear of COVID	-1.27	.27	-.42	-4.72**	-1.80	-0.74
2	(Constant)	74.5	13.9	--	5.36	47.0	102
	Fear of COVID	-1.30	.29	-.43	-4.50**	-1.87	-0.73
	Annoyance	.91	2.01	.04	0.45	-3.09	4.90
	Necessity	.60	2.74	.02	0.22	-4.83	6.02

Note. Model 1 summary: $F(1, 107) = 22.2$, $p < .001$; adjusted $R^2 = .16$. Model 2 summary: $F(3, 105) = 7.36$, $p < .001$; adjusted $R^2 = .15$.
*$p < .05$, **$p < .001$

Table 9

Fear of COVID-19 and Precautionary Measures: Burnout (CBI work-related)

Model		Coefficients				95% Confidence Interval	
		B	SE	β	t	Lower	Upper
1	(Constant)	2.33	.26	--	9.05	1.82	2.84
	Fear of COVID	.05	.01	.33	3.55*	0.02	0.07
2	(Constant)	1.38	.66	--	2.10	0.08	2.68
	Fear of COVID	.04	.01	.28	2.92*	0.01	0.07
	Annoyance	.21	.10	.21	2.15*	0.02	0.39
	Necessity	.12	.13	.09	0.90	-0.14	0.37

Note. Model 1 summary: $F(1, 107) = 12.6$, $p = .001$; adjusted $R^2 = .10$. Model 2 summary: $F(3, 105) = 5.86$, $p = .001$; adjusted $R^2 = .14$.
*$p < .05$, **$p < .001$

Table 10

Fear of COVID-19 and Precautionary Measures: Burnout (CBI client-related)

Model		Coefficients				95% Confidence Interval	
		B	*SE*	β	*t*	Lower	Upper
1	(Constant)	1.96	.27	--	7.14	1.41	2.50
	Fear of COVID	.05	.01	.35	3.82**	0.03	0.08
2	(Constant)	.46	.70	--	0.67	-0.92	1.84
	Fear of COVID	.04	.01	.27	2.88*	0.01	0.07
	Annoyance	.18	.10	.17	1.78	-0.02	0.38
	Necessity	.28	.14	.20	2.05*	0.01	0.55

Note. Model 1 summary: $F(1, 107) = 14.6$, $p < .001$; adjusted $R^2 = .11$.
Model 2 summary: $F(3, 105) = 6.85$, $p < .001$; adjusted $R^2 = .14$.
*p < .05, **p < .001

Figures

Figure 1

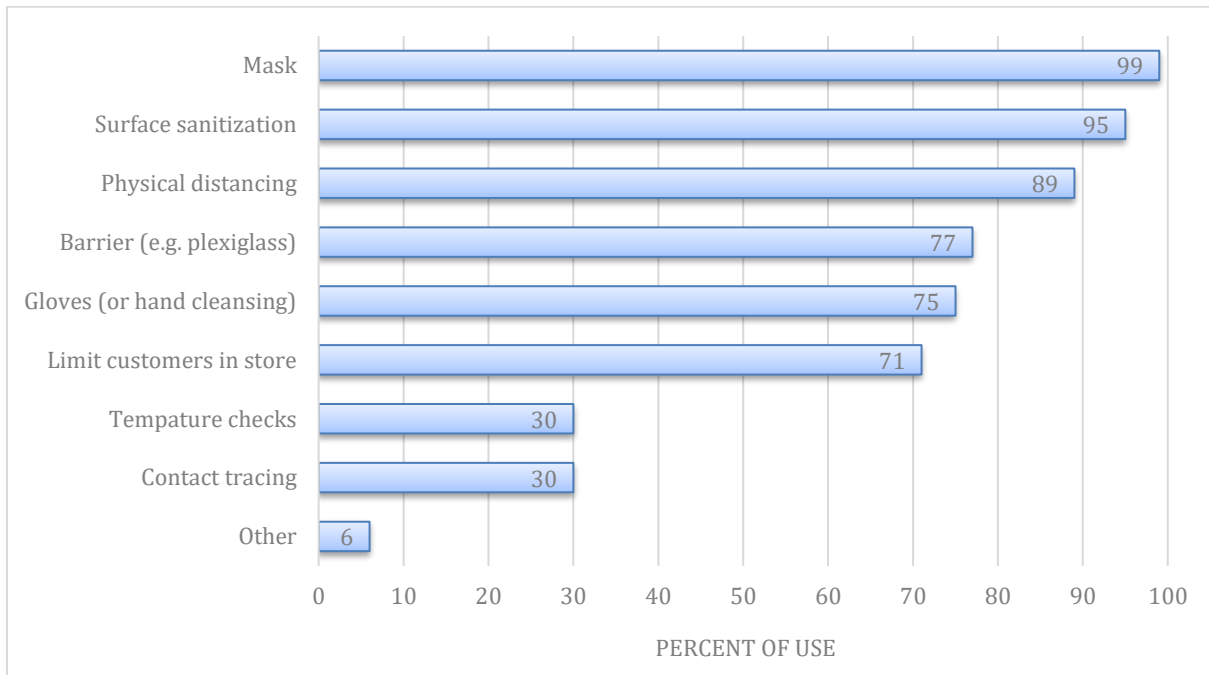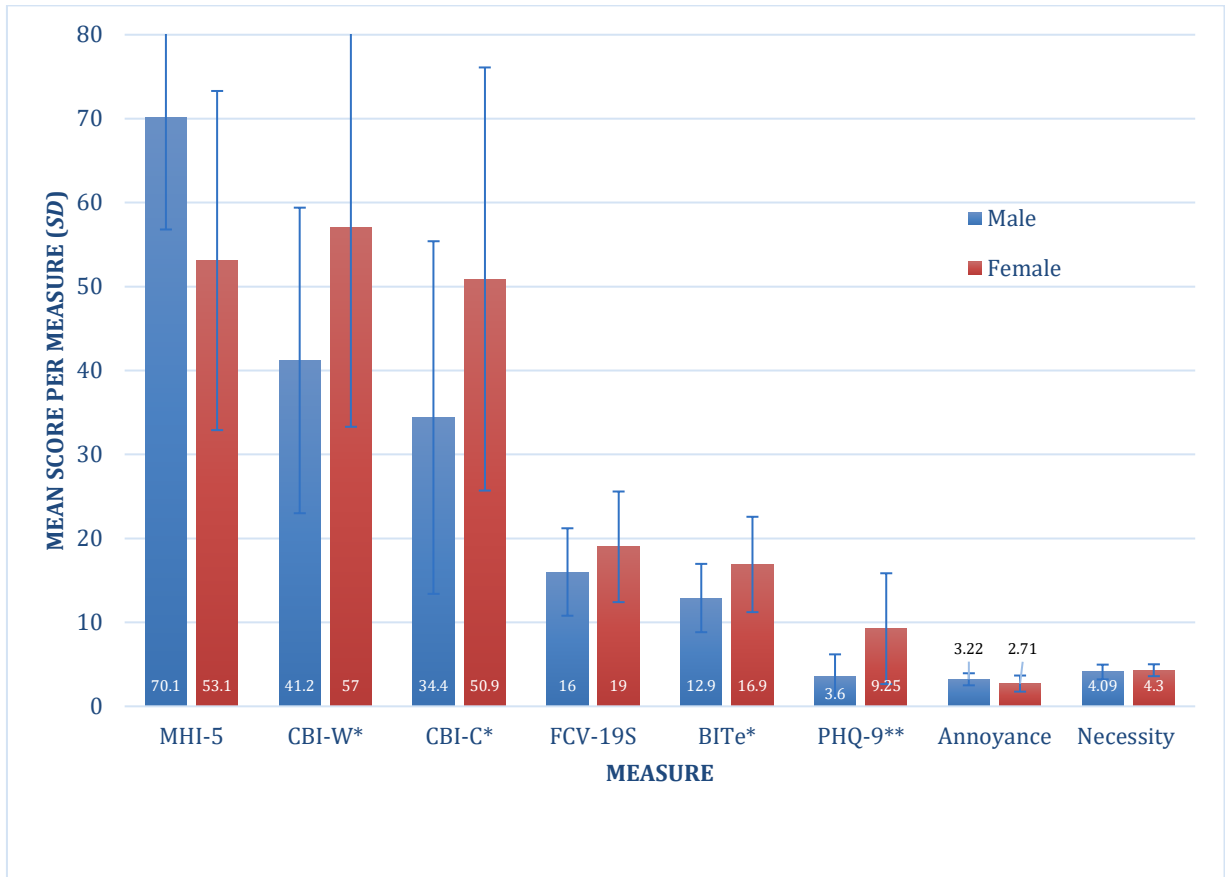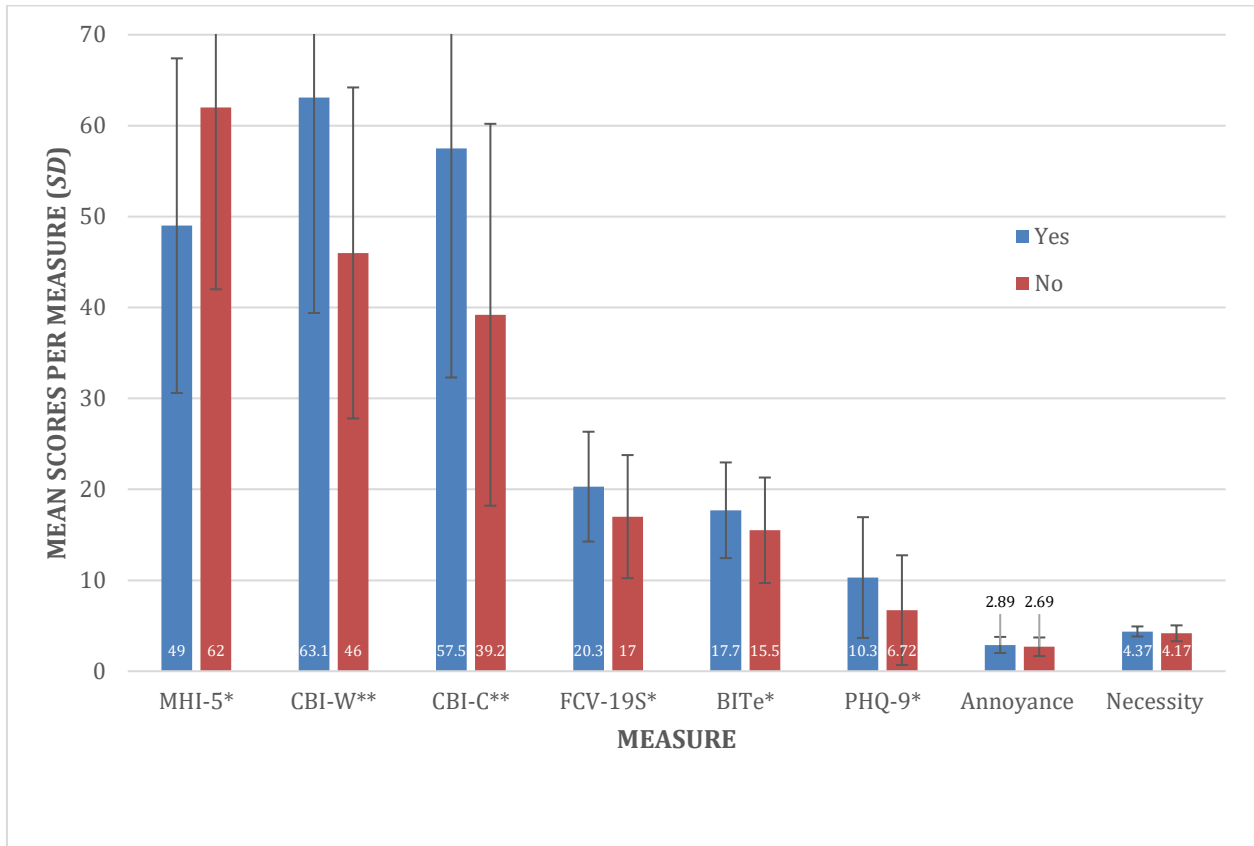*Employee Use of Precautionary Measures in the Workplace (%)*

Figure 2

t-*test Analysis: Gender Differences*

Note. * *p* < .02, ** *p* < .001. See *Measures* for scale ranges.

Figure 3

t-*test Analysis: Prior Mental Health Challenges*

Note. Yes, indicates that prior mental health challenges were reported. * *p* < .02, ** *p* < .001. See
Measures for scale ranges.

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