The Mental Health Impact of the COVID-19 Pandemic on Nurse Practitioners in British Columbia

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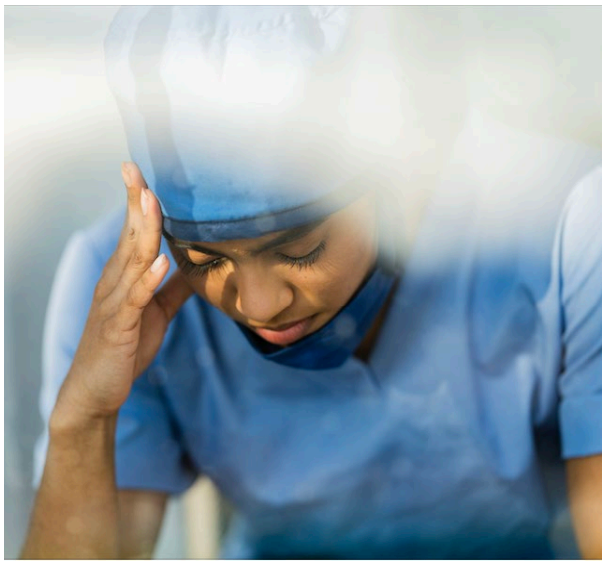

ABSTRACT

Objective: Focusing on Nurse Practitioners (NPs) working in British Columbia, the study objectives were to examine the impact working during the pandemic had on NPs' mental health and quality of work life.

Research Design: This was a mixed–methods study using an online cross-sectional survey and integrating closed- and open-ended survey data.

Main Outcome Measures: The survey consisted of three validated questionnaires: the Impact of Event Scale–Revised, the Depression, Anxiety, and Stress Scale, and the Professional Quality of Life Scale (ProQoL), as well as four optional open-ended questions.

Results: 51 NPs from across British Columbia participated in the study. 27% of participants experienced symptoms of PTSD at the time of the survey, 75% reported moderate to high burnout, and 49% experienced moderate to high secondary traumatic stress. The qualitative analysis revealed three main themes: (1) mental health challenges arising from stressful work environments, (2) frustration with failed leadership, and (3) a desire to continue to show up for their patients and colleagues.

Conclusion: NPs have experienced higher than usual rates of burnout and secondary traumatic stress, and have struggled with a wide variety of workplace issues that are increasing the burden on their professional quality of life and wellbeing. These results afford an opportunity to raise awareness and promote changes to practice.

KEYWORDS: Nurse Practitioner, Mental Health, Pandemic, Survey

Introduction

After its discovery in late 2019, COVID-19 created a public health emergency experienced worldwide (Mahase, 2020; Wang et al., 2020). The effect of this pandemic has been felt far and wide by patients, families, and healthcare providers alike. Since the World Health Organization (WHO) declaration of a global pandemic, healthcare workers have been grappling with the adverse effects of practicing in a time of uncertainty (Crowe et al., 2021; Mahase, 2020; Wang et al., 2020). Numerous studies have now documented the psychological burden felt by healthcare providers, particularly nurses, since the beginning of the pandemic (AlAteeq et al., 2020; Alharbi, Jackson, Usher, 2020; Gomez et al., 2020; Havaei et al., 2021; Shaukat, Ali, Razzak, 2020; Vizhen et al., 2020).

Nurse practitioners (NPs) are advanced practice nurses working in various clinical settings, from community-based primary care and specialty clinics to acute care hospital wards. NPs are critical members of the healthcare system that deliver quality care to various patient populations, including those impacted directly by the COVID-19 virus and patients indirectly affected because of the rapidly changing service delivery model's responses to the pandemic (Rosa et al., 2020). NPs have worked throughout the pandemic to ensure the care needs of patients have been met; however, little is known about the effect of working during the pandemic on their mental well-being. This study aimed to examine the impact of working as an NP during the COVID-19 pandemic on NPs' mental health and quality of work life.

Methods

Study Design

This was a mixed-methods study using an online cross-sectional survey and integrating closed- and open-ended survey data. We surveyed NPs across British Columbia, Canada, from February 2022 to April 2022. This period was considered to be the fourth wave of the pandemic. This study was approved by the Fraser Health Research Ethics Board (Ethics # 2022015). The first page of the online survey on the platform Checkbox explained that proceeding with questionnaire completion constituted implied consent. No identifying data was collected from participants.

Setting and Sample

In Canada, a public healthcare system provides universal coverage for medically necessary healthcare services. For this study, NPs working in an NP role during the COVID-19 pandemic in British Columbia were invited to participate. A study invitation was emailed to all NP members through the Nurses and Nurse Practitioners of British Columbia Association and multiple NP provincial leadership teams. The invitation to participate contained a link to the online survey.

Data Collection and Analysis

We collected online survey data with three validated questionnaires: the Impact of Event Scale–Revised (IES – R), the Depression, Anxiety, and Stress Scale (DASS – 21), and the Professional Quality of Life Scale (ProQoL) (Creamer, Bell, Falilla, 2002; Lovibond, Lovibond, 1995; Stamm, 2012). We also included four open-ended, free-text optional questions.

The three validated questionnaires have demonstrated strong reliability and validity when used in previous nursing studies, including two studies conducted by the principal investigator (Crowe et al., 2021; Crowe et al., 2022). Used in the past to assess the effect of a public health crisis, the IES–R measures the psychological impact of an event, providing a brief snapshot in time of the participant's response to a crisis, and capturing symptoms of post-traumatic stress disorder (PTSD) (Wang et al., 2020; McAlonan et al., 2007; Weiss, 2007). This 22-item scale asks participants to reflect on how difficult a statement was in the past seven days, with response options ranging from not at all (0 points) to extremely (4 points) (Creamer et al., 2002). All 22 items are summed; a score of under 24 indicates no clinical concern, 24 to 32 indicates the presence of some PTSD symptoms, 33 to 36 indicates a cut-off for a probable diagnosis of PTSD, and a score of more than 37 indicates significant symptoms (Creamer et al., 2002).

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Also used in previous pandemic research, the DASS – 21 measures symptoms of depression, anxiety, and stress (Wang et al., 2020; McAlonan et al., 2007). The 21-item questionnaire asks participants to reflect on how a specific statement applied to them over the past week, with response options ranging from did not apply to me (0 points) to applied most of the time (3 points) (Lovibond, Lovibond, 1995). The three sub-scale scores are summed and interpreted for depression [normal (0 to 9), mild (10 to 13), moderate (14 to 20), severe (21 to 27), and extremely severe (over 28)], anxiety [normal (0 to7), mild (8 to 9), moderate (10 to 14), severe (15 to 19), and extremely severe (over 20)] and stress [normal (0 to 14), mild (15 to 18), moderate (19 to 25), severe (26 to 33), and extremely severe (over 34)] (Lovibond, Lovibond, 1995).

The ProQoL measure was chosen as it includes the constructs of compassion satisfaction, burnout, and secondary traumatic stress (Stamm, 2012). It is commonly used to measure the negative and positive effects of helping others who experience suffering and trauma (Stamm, 2012). The 30-item ProQoL asks respondents to reflect on their experiences over the past 30 days, with response options ranging from never (1 point) to very often (5 points) (Stamm, 2012). The three subscales are each summed and interpreted as compassion satisfaction [low (22 or less), average (22 to 41 points), and high compassion satisfaction (42 or more points)], burnout [low (22 or less points), average (23 to 41 points), and high burnout (42 or more points)], and secondary traumatic stress [low (22 or less points), average (23 to 41 points), and high secondary trauma (42 or more points)] (Stamm, 2012). Due to the small sample size, no further statistical analysis was possible to examine subgroup differences (e.g., differences between practice settings, age groups, and years of experience) for each questionnaire.

Following the three questionnaires, we included optional open-ended, free-text questions asking participants to (1) briefly describe how the pandemic has impacted them professionally and / or personally, (2) describe their positive experiences, (3) describe their negative experiences, and (4) if they could share something about this experience with the public or leadership, what would it be? The responses were analyzed using an inductive thematic approach that involved open coding of the participants' comments, the creation of a coding framework, grouping and regrouping data into larger categories, and the eventual construction of overarching themes that described the participants' experiences. All investigators completed the process until consensus was achieved, and manuscript preparation was guided by the consolidated criteria for reporting qualitative research (COREQ) checklist (Norwell et al., 2017; Tong, Sainsbury & Craig, 2007).

Results

Participant Demographics

In total, 51 NPs participated in the study (Table 1). The participants ranged from 29 to 64 years of age, with years as an NP ranging from 1 to 23 years and a mean of 4.15 years in their current position. The majority (96%) were directly employed by a British Columbian provincial health authority, with similar representation from acute care and the community.

Table 1: Demographics (N = 51)

Type of employment:	Health Authority – 49 (96%) Private – 2 (4%)
Type of setting:	Community – 25 (49%) Acute Care / Hospital – 22 (43%) Other – 4 (8%)
Age:	Range: 29 to 64 years Mean: 43 years
Gender:	Female – 47 (92%) Male – 4 (8%)
Number of years spent in healthcare:	Range: 7 to 36 years Mean: 19.9 years
Number of years as an NP:	Range: 1 to 23 years Mean: 7.4 years
Years in current position:	Range: 0.1 to 16 years Mean: 4.15 years
Employment type:	Full-time: 38 (75%) Part-time: 12 (24%) Casual: 1 (2%)

Questionnaire (IES – R, DASS – 22, and ProQoL) Results

The IES – R responses indicated that 27% of participants experienced symptoms of PTSD at the time of the survey, while 73% were below the cut-off for PTSD symptoms (Table 2). This is not diagnostic of PTSD but represents a snapshot in time.

Table 2: Impact of Event Scale – Revised (IES – R) N (%)

Less than 24 – Below cut-off for PTSD	37 (73%)
24 to 32: Presence of some symptoms of PTSD	7 (13%)
33 to 38: Probable diagnosis of PTSD	1 (2%)
39 or above: Significant symptoms of PTSD	6 (12%)

Similarly, participants reported low levels of depression, anxiety, and stress. The majority reported normal or no signs of depression (84%), anxiety (96%), or stress (96%) (Table 3). However, the participants reported moderate to high burnout (75%) and moderate to high secondary traumatic stress (49%) (Table 4). Despite these results, 92% of participants reported moderate to high compassion satisfaction.

Qualitative Results

A majority (78%) of participants elected to write comments in response to the open-ended questions. The comments ranged from brief single-line answers to lengthy detailed paragraphs. Despite some of the positive findings from the questionnaires, the comments depicted the tremendous toll the pandemic has taken on NPs in British Columbia. The impact of the pandemic on NPs centered on three themes, including (1) mental health challenges arising from stressful work environments, (2) frustration with failed leadership, and (3) a desire to continue to show up for their patients and colleagues.

Mental Health Challenges arising from Stressful Work Environments

The NPs described the stressful environments they were and are working within and how this has impacted their mental health. Their mental health challenges stemmed

Table 3: DASS - 21

	Depression		Anxiety		Stress	
	Scores	N (%)	Scores	N (%)	Scores	N (%)
Normal	0 – 9	43 (84%)	0 – 7	49 (96%)	0 – 14	49 (96%)
Mild	10 – 13	5 (10%)	8 – 9	0	15 – 18	1 (2%)
Moderate	14 – 20	3 (6%)	10 – 14	1 (2%)	19 – 25	1 (2%)
Severe	21 – 27	0	15 – 19	0	26 – 33	0
Extremely Severe	28+	0	20+	1 (2%)	34+	0

Table 4: ProQoL

	Compassion Satisfaction N (%)	Burnout N (%)	Secondary Traumatic Stress N (%)
Low – 22 or less	4 (8%)	13 (25%)	26 (51%)
Moderate – 23 to 41	35 (69%)	36 (71%)	23 (45%)
High – 42+	12 (23%)	2 (4%)	2 (4%)

from feeling overwhelmed, initially with the fear of the unknown when COVID-19 first began. They reported initial distress with accepting personal risk when caring for COVID-19 patients and concerns over infecting their own families. Then, the changing processes in their clinical practice and delivery of care (e.g., implementing new personal protective equipment and changing to virtual care) were disruptive and challenging to navigate, further compounding feelings of being overwhelmed and stressed at work. The NPs described how more recently, they were tasked with providing COVID-19 vaccine-related patient education and dispelling misinformation. The NPs reported their dismay with conspiracy theories, vaccine misinformation, difficulties coping with personal safety issues, and concerns over protests and verbal abuse. One participant wrote,

> *"Personally, I feel the public who are non-vaccinate[d] have a huge disregard how they impact staff and others. It saddens me that a year ago they would honk horns at 7 pm for all the work we do and now [they are] interrupting and blocking care."*

Several participants expressed the negative impact of isolation, loneliness, and disconnection on their mental health. Several also described feeling overwhelmed, exhausted, and burnt out, citing the continuation of above-normal work demands due to lack of primary care providers and a sicker patient population despite declining COVID-19 case numbers.

Frustration with Failed Leadership

Frustration with failed leadership was evident in numerous NP accounts; however, the cause varied. NPs reported experiencing unequal treatment both within the NP community but also in comparison to similar work conducted by their physician counterparts. They described doing more work than their colleagues who were either similarly compensated (other NPs) or receiving substantially higher compensation (physicians). Subsequently, they felt disrespected, underappreciated, undervalued, disappointed, and frustrated with the leadership of their health authorities and the provincial government that accepted this. One NP shared her frustration:

> *"NPs need to be paid more. While it's not only about the money, but it's exhausting to know that I could take a private role, and work with easier patients and make more money through the PCN [primary care network] than I can working with highly acute or vulnerable patients. This isn't fair, and it isn't right and it makes me and my team feel undervalued. Also, it's extremely frustrating that private providers, [PCN NPs, private NPs and private physicians] have the option to just work from home forever, and only work virtually. This results in these private providers telling patients to come and see us in employed clinics... and it's so disheartening to see our patients suffer from this."*

Many NPs commented on the increased demands that were largely uncompensated, unrecognized, and that had become an expectation, as evidenced by the comments:

> *"Professionally, I feel undervalued, profoundly unpaid, and overworked. I don't feel seen or heard, even though I keep showing up to care for patients"*

and

> *"I feel that my employer has not acknowledged the amount that I have gone over and above to care for people. Feel very burned out"*.

NPs in British Columbia are a growing workforce that many still feel are invisible and under-appreciated by multiple levels of leadership. One NP shared,

> *"There has been little to no recognition by senior leadership of the role nurse practitioners have played in the pandemic response. We are invisible to the organization. We need a public and health system campaign to show people our value. NPs have been in BC for over 15 years and we are still under-recognized."*

Other NPs commented on their disappointment at the higher provincial and federal government levels, which they believed failed in handling the multiple waves of the pandemic. The NPs expressed confusion and frustration with the inconsistent public health rules and the government's approach to the pandemic. These inconsistencies, in turn, created more chaos and animosity within their practices. They also expressed their disappointment in government leadership who failed to engage with NPs and instead engaged only with physicians.

Desire to Continue Showing Up for Their Patients and Colleagues

The third theme in NP comments was their desire to continue showing up for their patients and colleagues. While the pandemic had many negative impacts across healthcare, such as distress, feeling overwhelmed, unclear leadership, and resource shortages, many NPs also reported a sense of pride in the NP community as they developed new and innovative solutions to support their patients. Many described a sense of accomplishment in being a part of history and the shared experience of responding to the COVID-19 pandemic. Others wrote about newfound provincial collaborations that arose out of necessity but continue to be of tremendous value. One nurse shared,

> *"seeing my colleagues unite and band together in some trying and difficult circumstances was very humbling. The public displays of support were amazing. I've made some great personal friends and created lasting personal bonds out of working with colleagues during adversity in a professional capacity."*

Others shared that the pandemic forced them to re-evaluate their professional priorities, enabling them to create more time for themselves, set boundaries around their work, and ultimately better work-life balance, reducing their overall stress.

Discussion

The impact the COVID-19 pandemic has had on the well-being of healthcare workers continues to be felt in the two and a half years since it began (AlAteeq et al., 2020; Crowe et al., 2021; Crowe et al., 2022; Havaei et al., 2021). This study provides insights into the unique experiences of NPs from various practice settings in British Columbia. While our study did not demonstrate the same degree of stress, anxiety, depression, or symptoms of PTSD that previous studies with other healthcare providers have reported, our study reported moderate to high burnout and secondary traumatic stress levels. Complementing this data were the narrative descriptions of the mental health toll experienced by NPs due to the increased stressful work environments they found themselves working in, along with their sense of failed leadership. Unlike in previous studies, the NPs in our study described a positive association with providing care during the COVID-19 pandemic; they describe a sense of pride and desire to continue showing up for their patients and colleagues.

There is a paucity of data published about general NP practice as a whole, in terms of burnout, professional quality of life, and mental health implications of practice currently. Before the pandemic, one study reported NP burnout to be approximately 25%, whereas other general nursing studies have found moderate to high burnout rates (Abraham et al., 2021; Austin, Saylor & Finlay, 2017; Sacco et al., 2015). Studies conducted during the pandemic with registered nurses reported higher levels of burnout and secondary trauma (Crowe et al., 2021; Crowe et al., 2022). Our survey findings identifying high levels of burnout and secondary traumatic stress provide evidence of the pandemic-related strain shouldered by NPs. While the rates reported in our study are not as high as in other groups, the level of burnout in these NPs was still consistently higher than pre-pandemic levels. The differences identified between registered nurses and the NP group may be partly due to the wide variety of practice settings where NPs work (e.g., community to acute hospital). The participants worked in various settings, some virtual, while others worked directly with COVID-19 patients, which likely impacted the overall results. The timing of the data collection was also important to consider. The data was collected two years after the beginning of the pandemic, and many early stressors had started to ease (e.g., more information available, development of the vaccines).

Overall, the findings of this study provide an overview of the impact the pandemic has had on British Columbian NPs' mental health working in a variety of settings. Not only have they experienced higher than usual rates of burnout and secondary traumatic stress, but they have also struggled with a wide variety of workplace issues that are increasing the burden on their professional quality of life and well-being. These results afford an opportunity to raise awareness and promote changes to practice.

Strengths and Limitations

The strengths of this study lie in the representation of a professional group that is often underrepresented in the literature. There is little published on the overall well-being of NPs. The high response rate to the optional qualitative questions is another strength of the study in that the richness of the data extended and complemented the survey results, providing a deeper understanding of the experiences of NPs. A limitation of the study was the sample size. Self-selection might have resulted in NPs with specific experiences (good or bad) deciding to respond. Although the NP population in British Columbia is growing, it is still a relatively small group with a wide variety of practice settings.

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