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Identifying risk factors for burnout-driven turnover in Canadian healthcare workers during the Covid-19 pandemic

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Abstract

Background/objectives The COVID-19 pandemic has tested health systems worldwide, exposing significant weaknesses and vulnerabilities, particularly its toll on healthcare workers (HCWs). This study aimed to identify risk factors leading Canadian HCWs to consider leaving their positions due to stress or burnout during the pandemic.

Methods Data from the 2022 Survey on Healthcare Workers' Experiences During the Pandemic (SHCWEP) were analyzed using the Shanafelt and Noseworthy (2017) framework. We hypothesized that factors such as workload, work-life balance, resource availability, social and community support at work, and job environment—including organizational culture, values, and flexibility—could influence HCWs' intentions to leave due to stress or burnout. Multivariable logistic regression models were employed to identify significant risk factors for each HCW group.

Results The SHCWEP survey had a 54.9% response rate, with 12,139 HCWs participating. Of these, 3,034 HCWs (25%) expressed an intention to leave their current job, and within this group, 1,350 cited stress or burnout as their reason, representing 11% of the total participants and 44% of those intending to leave. Factors associated with HCWs considering leaving due to stress and burnout included being younger to middle-age, increased workload, longer working hours, financial difficulties, conflicts with colleagues or management, non-adherence to PPE/IPC protocols, and lack of professional emotional support.

Conclusion The findings underscore systemic issues exacerbated by the pandemic, highlighting the need for targeted interventions to address workload, organizational culture, and emotional support to mitigate stress and burnout and improve healthcare worker retention.

Keywords Burnout, COVID-19, Healthcare, Intention to leave work, Health systems, Canada, Healthcare services, Healthcare workers

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Introduction

The COVID-19 pandemic has significantly impacted healthcare systems worldwide, introducing unprecedented challenges that have strained resources, tested resilience, and exposed vulnerabilities in healthcare delivery [24]. One of the most pressing issues magnified by this crisis is the increased burden on healthcare workers (HCWs). Reports from the World Health Organization (WHO) and various studies highlight alarming levels of stress, burnout, and turnover among HCWs during the pandemic [19, 24] Burnout—defined by emotional exhaustion, depersonalization, and reduced personal accomplishment—has long been a critical concern among healthcare professionals [10, 17], significantly affecting the performance and sustainability of health systems.

Healthcare worker burnout and staff turnover were significant challenges even before the pandemic, with many health systems worldwide struggling to address them. For example, a pre-pandemic study of physicians at a cardiovascular center in Canada reported that 65.4% experienced burnout and 54.3% faced high distress [15]. The pandemic served as a significant stressor, amplifying and exposing these pre-existing vulnerabilities in health systems. It intensified these issues as healthcare workers faced prolonged high-stress environments, escalating workloads, and insufficient resources [22].

Recent studies have reported a significant increase in burnout among healthcare workers (HCWs) during the pandemic, leading to heightened turnover intentions [14, 22]. In Canada, a survey of 2,079 public health workers during the pandemic revealed a staggering 78.7% burnout rate, linked to factors such as harassment, unsafe working conditions, redeployment, and lack of support. Burnout in this group was strongly associated with a higher likelihood of job resignation or early retirement [19]. Similarly, a study of 313 clinicians in the United States found a strong correlation between burnout and intention to leave work, with odds significantly increased by compromised integrity (odds ratio 2.8–3.2) [9]. Common risk factors, including excessive workload, poor work-life balance, and emotional exhaustion, have been consistently identified as primary drivers of burnout and turnover intentions in other studies [4, 5, 11].

Job vacancies in healthcare settings surged during the pandemic, exacerbating the strain on healthcare professionals and health systems. The increase in workload for HCWs was evident as 86.5% of healthcare workers reported increased work-related stress during this period [21]. In 2021, more than one-fifth of the health sector workforce (236,000) reported working overtime, with average weekly totals of 8.2 hours of paid overtime and 5.8 hours of unpaid overtime—the highest in nearly a decade [6]. These challenges have significantly contributed to healthcare workers expressing intentions to leave their positions due to stress or burnout. Understanding the factors influencing these intentions is crucial for addressing workforce retention and fostering a sustainable healthcare system post-pandemic.

This study aims to address a critical gap by investigating the specific risk factors contributing to Canadian healthcare workers' (HCWs) intentions to leave their current positions due to stress or burnout during the COVID-19 pandemic. The research utilizes secondary data from the 2022 Survey on Healthcare Workers' Experiences During the Pandemic (SHCWEP). While the dataset does not include direct questions about experiencing stress or burnout, it focuses specifically on the intention to leave due to stress or burnout.

To guide our hypothesis regarding the factors influencing the intention to leave work due to stress or burnout, we employed a framework adapted from Shanafelt and Noseworthy [18]. This framework highlights the key drivers of burnout and engagement among healthcare workers. It identifies burnout as being driven by factors such as high workload and job demands, insufficient resources, poor work-life integration, limited control and flexibility, weak organizational culture and values, and inadequate social support and community [18].

While the framework does not explicitly address the intention to leave work due to stress or burnout, we hypothesize that the factors influencing healthcare workers' intentions to leave are closely aligned with the underlying causes of their burnout as evidenced by the strong link between burnout and intention to leave work in the literature. Therefore, the hypothesis proposed in this study is that healthcare workers in Canada who experience higher workloads, insufficient access to personal protective equipment (PPE), inadequate infection prevention and control (IPC) training, and limited emotional support are significantly more likely to express intentions to leave their positions due to stress or burnout compared to those who report satisfaction with these factors.

The findings of this study can inform interventions to foster a resilient healthcare workforce capable of effectively addressing future challenges. Given that the pandemic exacerbated an already critical issue impacting health systems, including Canada's, these insights are particularly relevant for tackling healthcare worker retention in the post-pandemic era.

Methods

Data source

This study used secondary data obtained from the 2022 Survey on Healthcare Workers' Experiences During the Pandemic (SHCWEP), conducted between September 2, 2021, and November 12, 2021, across 10 provinces in Canada. The survey was designed to capture healthcare

workers' experiences since the onset of the COVID-19 pandemic, with a focus on their health, work-life balance, and exposure to workplace risks during the pandemic.

The survey employed a stratified, cross-sectional survey designed to capture the experiences of healthcare workers across Canada during the COVID-19 pandemic. The sampling frame was derived from the 2016 Canadian Census and Postsecondary Student Information System (PSIS), targeting individuals identified as healthcare workers or those recently enrolled in healthcare education programs. Stratification was based on province and occupation group, defined using the National Occupation Classification (NOC) or the Classification of Instructional Programs (CIP). A simple random sample was selected within each stratum, achieving a response rate of 54.9% (12,246 respondents from 22,293 eligible participants).

The SHCWEP collected data on a variety of topics, including demographic characteristics, job types, workplace settings, personal protective equipment (PPE) usage, infection prevention and control (IPC) practices, and the impacts of COVID-19 on personal health and work life. The present study specifically focuses on healthcare workers' intention to leave their positions due to burnout, using a subset of variables derived from a conceptual framework developed by Shanafelt and Noseworthy [18] (Fig. 1) and other relevant literature on healthcare worker burnout.

Conceptual framework

The Shanafelt and Noseworthy framework identifies key drivers of burnout and engagement across seven critical areas affecting physician well-being: workload and job demands, control and flexibility, work-life integration, social support and community at work, organizational culture and values, efficiency and resources, and meaning in work. These factors are known to influence burnout among healthcare professionals, with excessive workload, lack of control, and poor work-life balance being significant contributors [18].

Our study focuses on the intention of Canadian healthcare workers to leave their jobs due to stress and burnout, rather than directly examining burnout itself. However, given the well-established link between burnout and turnover intentions in the literature, we assumed that the factors driving both phenomena would be closely related. Supporting this assumption, a recent mixed-method systematic review of 43 studies identified psychological stress as one of the five primary drivers of healthcare workers' intentions to leave their jobs during the COVID-19 pandemic [12]. Building on this evidence, we hypothesized that the factors outlined in the [18] framework would similarly help explain healthcare workers' intention to leave due to stress and burnout.

Specifically, the hypothesis in this paper- based on this framework and supported by evidence in the literature- is that Canadian healthcare workers who experience higher workloads, insufficient access to personal protective equipment (PPE), inadequate infection prevention and control (IPC) training, and limited emotional support

Fig. 1 Shanafelt model: key drivers of burnout and engagement in physicians. Reprinted from Shanafelt TD and Noseworthy JH. Executive Leadership and Physicians Well-being: Nine Organizational Strategies to Promote Engagement and Reduce Burnout. Mayo Clin Proc. 2017 January; 92(1): 129 146 with permission from Elsevier

are significantly more likely to express intentions to leave their positions due to stress or burnout compared to those who report satisfaction with these factors.

Characteristics of the subsample and variables analyzed

Inclusion criteria

For inclusion in the analysis, respondents had to answer 'Less than 6 months', '6 months to less than a year', or '1 to 2 years' to the question asking, 'How long are you planning to stay in your current job? Only participants who met this criterion were included in the study sample. A total of 3,034 participants reported intentions to leave within two years. By excluding those who are planning to stay longer (e.g., 3+ years), we intended to focus on individuals who might be more immediately at risk of leaving due to burnout or stress. and formed the subsample.

Dependent variable

The dichotomous outcome variable indicates whether participants attributed their intention to leave their job to stress or burnout (coded as 1) or to other reasons (coded as 0). This was derived from the question: *"What are the reasons that you might consider leaving or changing your job?"* The possible reasons included retiring, job stress or burnout, lack of job satisfaction, concerns about physical or mental health and safety, concerns about household members' health, financial concerns, long-term impacts of COVID-19 on the healthcare system, other career opportunities, and other reasons.

Independent variables

The dataset included several key variables capturing the occupational and pandemic-related experiences of respondents. The Occupation Classification variable categorizes respondents into four groups: Physicians, Nurses, Personal Support Workers or Care Aides, and Other (which is excluded from the analysis). The Years in Current Occupation variable indicates the number of years the respondent has worked in their current occupation, with categories for <10 years, 10 to 19 years, and 20+ years. The COVID-19 Impact on Work-Life Balance variable addresses the impacts of the COVID-19 pandemic, including difficulty balancing caregiving responsibilities (Yes/No) and difficulty meeting financial obligations (Yes/No). The Income Change During COVID-19 variable identifies whether the respondent experienced a loss or increase in income (Yes/No). The Workplace COVID-19 Contact variable represents the type of contact the respondent had with others at their primary job location since March 2021, with categories for contact with suspected or confirmed COVID-19 cases, contact with those not suspected of COVID-19, and no contact with others.

The PPE Access variable assesses access to personal protective equipment (PPE), such as N95 or KN95 respirator masks, with response options ranging from "Not needed for job" to "Never available when needed." The PPE and IPC Policies variables assess the availability of training, adherence to PPE and infection prevention control (IPC) policies, and the availability of professional emotional support during the pandemic, with response options from "Strongly agree" to "Strongly disagree." Finally, the Job Setting variable categorizes the type of job setting, including acute care, long-term care, outpatient and ambulatory care, and community/home care.

Covariates

The variables included in the analysis are categorized as follows: Age Group, with categories '18 to 34 years', '35 to 44 years', '45 to 54 years', and '55 years and older'; Gender, classified as 'Male' and 'Female'; and Visible Minority, categorized as 'Visible minority' and 'Not a visible minority'. The variable Number of Household Members is grouped into '1', '2', '3', and '4 or more people', while Province or Region includes 'Atlantic provinces', Quebec, Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia.

Statistical analysis

To account for sampling design, nonresponse, and demographic variations, weights were adjusted through multiple stages: initial weight calculation, nonresponse adjustments, and post-stratification. The weighting process ensured that the survey results were representative of the Canadian healthcare workforce during the pandemic.

Independent variables were initially filtered using chi-square tests for independence on the full subsample, applying a broad significance level ($p < 0.25$) to identify potentially relevant factors. This approach ensured that no key predictors were prematurely excluded. Each variable had varying degrees of missing data, ranging from 0.1% to 11.1%. Multiple imputation by chained equations (MICE) was employed, generating 30 imputed datasets over 20 iterations. Subsets of the data sample were created for each healthcare worker group (Physicians, Nurses, and Care Aides), excluding the "Other" category due to its heterogeneity.

The SHCWEP categorized healthcare workers into four main occupational groups: Physicians, Nurses, Care Aides, and Other Healthcare Workers. The "Other" category included a diverse range of roles, such as administrative staff, allied health professionals, and technicians, making it less specific and more difficult to analyze consistently. Therefore, this study focused on the three well-defined groups (Physicians, Nurses, and Care Aides) to ensure clarity and comparability of findings.

For each occupational group, binary logistic regression models were fitted to the imputed datasets using automated backward selection. Variables retained in 50% or

Table 1 Descriptive Statistics of all healthcare workers intending to leave their current job, *n*=3,034

Characteristic	Leaving current job	Leaving current job due to stress/ burnout
Age		
18 to 34 years	738	455 (61%)
35 to 44 years	484	318 (65%)
45 to 54 years	353	219 (62%)
55 and older	1453	355 (24%)
Sex		
Female	2,370	1,103 (46%)
Male	651	240 (36%)
Occupation		
Physicians	500	160 (32%)
Nurses	1,138	609 (53%)
Care aids	625	240 (38%)
Other	771	341 (44%)
Province		
British Columbia	429	197 (45%)
Alberta	363	182 (50%)
Saskatchewan	303	156 (51%)
Manitoba	361	165 (45%)
Ontario	361	173 (47%)
Quebec	307	103 (33%)
Atlantic Provinces (NB, NL, NS, PE)	910	374 (41%)

more of the models were included in the final regression models, which were then applied to all imputed datasets. Coefficients and standard errors were pooled across the 30 imputed datasets using Rubin's rules to derive the final [13]. Statistical significance was set at an alpha level of 0.05. Analyses were conducted using R version 4.3.0, leveraging the "mice" and "survey" packages, and forest plots were created using Tableau 2023.3 [23].

Results

Of the total survey sample, 12,139 healthcare workers across Canada participated. Among them, 3,034 (24.9%) indicated they intended to leave their current job within two years, with 1,350 (44% of those intending to leave) citing stress or burnout as the reason. Table 1 presents the descriptive statistics for survey respondents intending to leave their current job.

Figure 2 shows the results of the model examining factors associated with physicians' intentions to leave work due to burnout. Physicians who experienced financial difficulty since the onset of the COVID-19 pandemic had significantly higher odds of intending to leave their job due to stress/burnout (aOR 3.95; 95% CI 1.28 – 12.2). Additionally, those who faced an increased workload had significantly higher odds of intending to leave due to

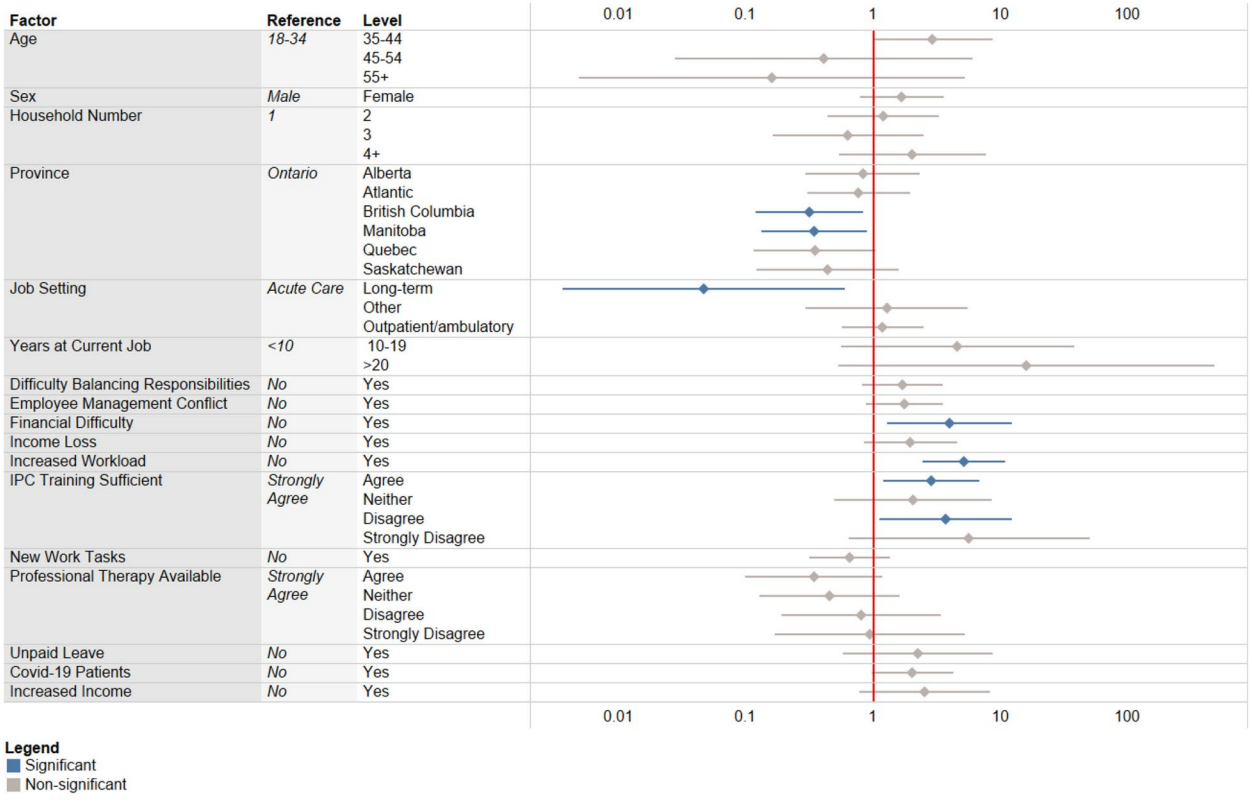

Fig. 2 Physicians intending to leave their job due to stress/burnout

stress/burnout (aOR 5.16; 95% CI 2.46 – 10.9). Physicians who agreed slightly (aOR 2.84; 95% CI 1.19 – 6.78) or disagreed (aOR 3.69; 95% CI 1.11 – 12.30) that their IPC training was sufficient also had significantly higher odds of intending to leave due to stress/burnout compared to those who strongly agreed.

Physicians practicing in British Columbia (aOR 0.32; 95% CI 0.12 – 0.84) and Manitoba (aOR 0.34; 95% CI 0.13 – 0.89) had significantly lower odds of intending to leave due to stress/burnout compared to those in Ontario. Those working in long-term care settings had significantly lower odds of intending to leave due to stress/burnout than those in acute care (aOR 0.047; 95% CI 0.003 – 0.601).

For nurses, as shown in Fig. 3, experiencing conflict with management (aOR 1.67; 95% CI 1.07 – 2.61), an increased workload (aOR 2.46; 95% CI 1.30 – 4.64), and increased stress at work (aOR 3.79; 95% CI 1.67 – 8.59) were all significantly associated with a higher likelihood of intending to leave their jobs due to stress/burnout. Nurses who disagreed with whether IPC measures were enforced/maintained had significantly higher odds of intending to leave due to stress/burnout (aOR 3.67; 95% CI 1.17 – 11.50). Conversely, nurses who neither agreed nor disagreed about having sufficient IPC training had significantly lower odds of intending to leave due to stress/burnout compared to those who strongly agreed (aOR 0.24; 95% CI 0.09 – 0.61). Those who disagreed (aOR 3.80; 95% CI 1.42 – 10.10) or strongly disagreed (aOR 5.38; 95% CI 1.82 – 15.80) with having professional therapy available had a higher odds of intending to leave due to stress/burnout.

Age and province of work were also significant factors. Nurses aged 35–44 (aOR 0.38; 95% CI 0.17 – 0.87)

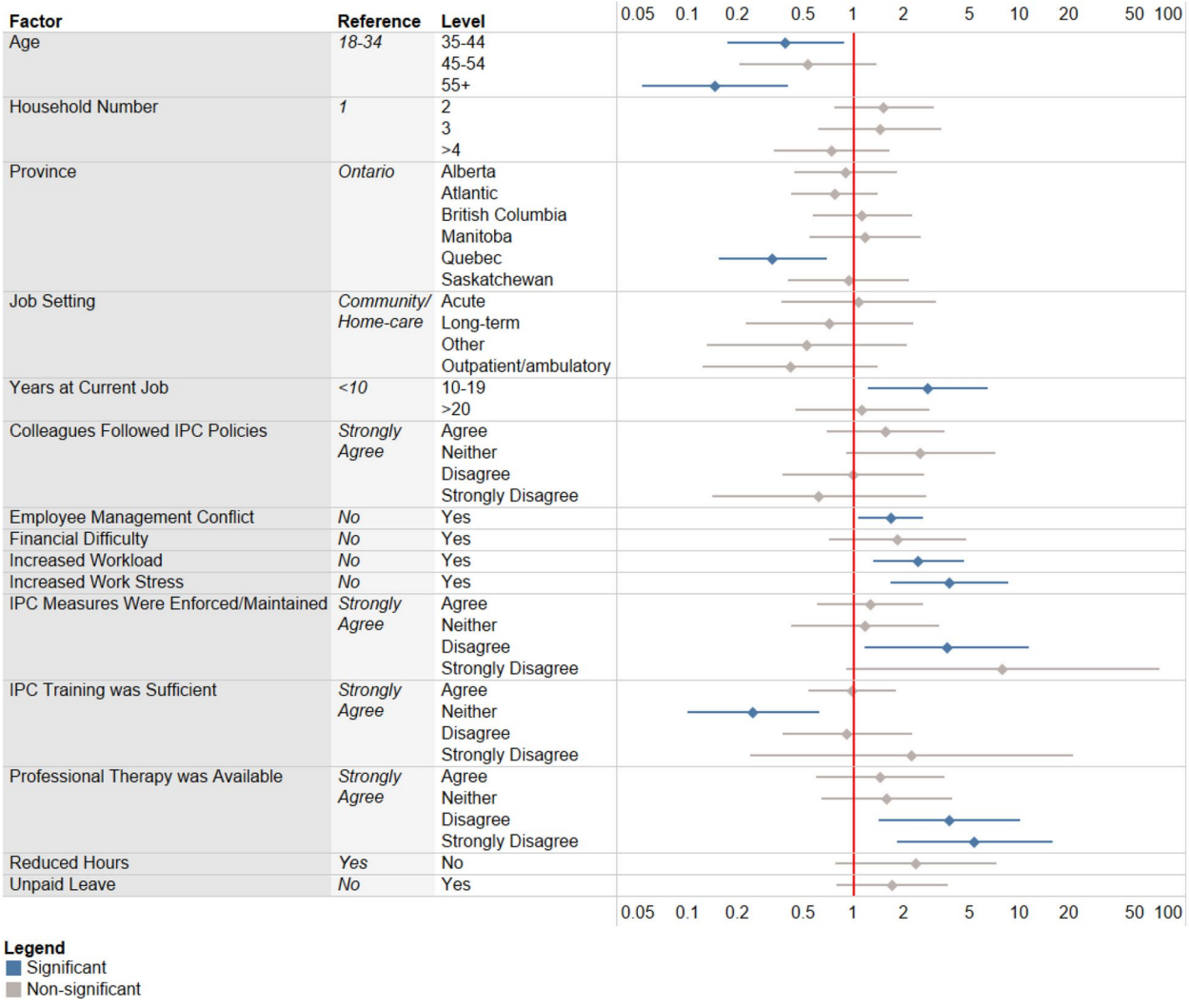

Fig. 3 Nurses intending to leave their job due to stress/burnout

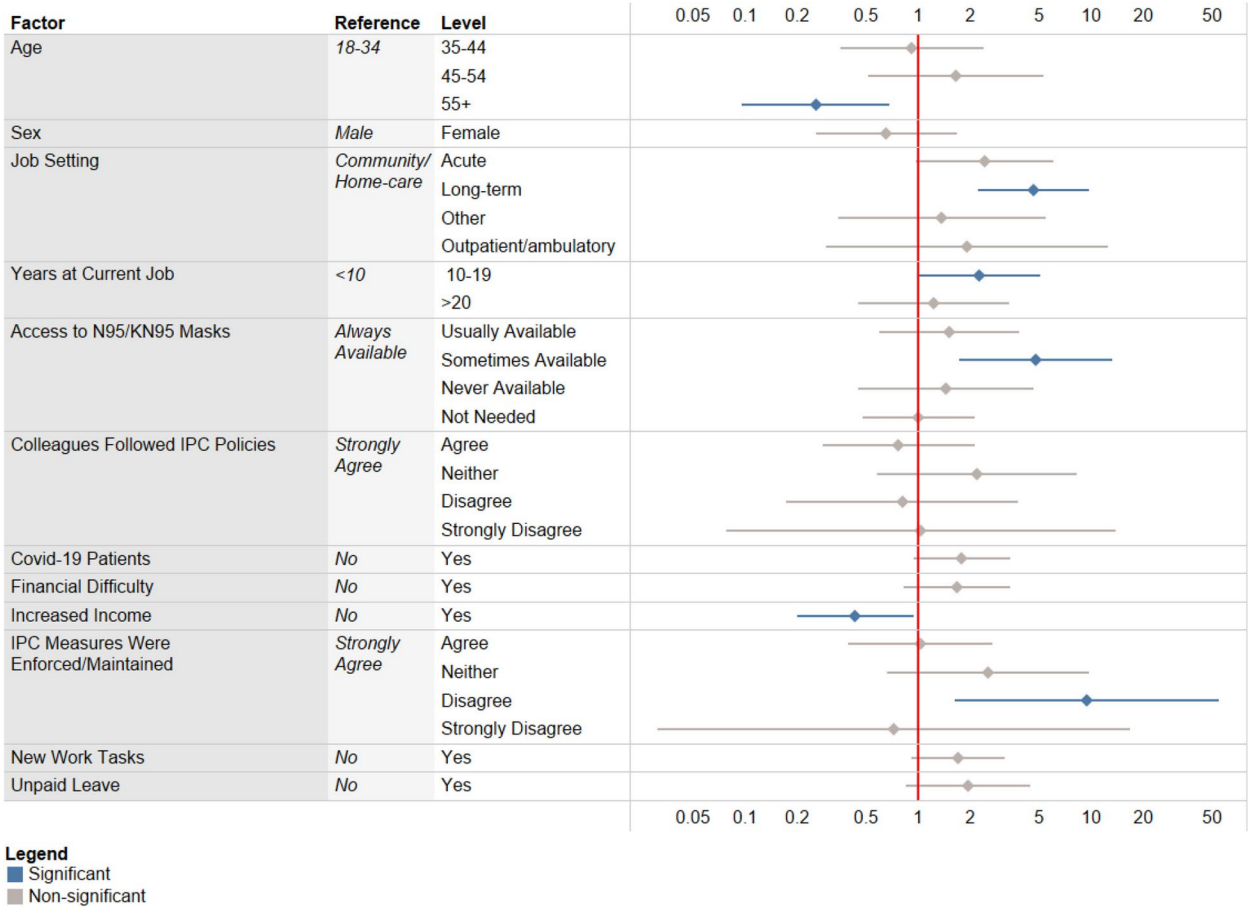

Fig. 4 Health care aids intending to leave their job due to stress/burnout

and 55+ (aOR 0.14; 95% CI 0.05 – 0.39) had significantly lower odds of intending to leave due to stress/burnout compared to those aged 18–35. Nurses practicing in Quebec had significantly lower odds than those in Ontario (aOR 0.32; 95% CI 0.15 – 0.68). Those who had been working at their current job for 10–19 years had significantly higher odds of intending to leave due to stress/burnout compared to those who had worked less than 10 years (aOR 2.79; 95% CI 1.21 – 6.41).

Figure 4 presents the results for health care aides. Those who reported that N95/KN95 masks were only sometimes available had increased odds of intending to leave due to stress/burnout compared to those who said these masks were always available (aOR 4.74; 95% CI 1.72 – 13.10). Experiencing an increase in income significantly decreased the odds of intending to leave due to stress/burnout (aOR 0.43; 95% CI 0.19 – 0.93). Health care aides who disagreed with whether IPC measures were enforced/maintained at their workplace had significantly higher odds of intending to leave work compared to those who strongly agreed (aOR 9.30; 95% CI 1.61 – 53.8).

Age was also a significant factor, with those aged 55+ having significantly lower odds than those aged 18–34 for intending to leave their job due to stress/burnout (aOR 0.25; 95% CI 0.09 – 0.67). Working in long-term care compared to community/home care was associated with a significantly increased odds of intending to due to stress/burnout (aOR 4.61; 95% CI 2.19 – 9.69). Those who had worked at their current job for 10–19 years compared to less than 10 years had significantly higher odds of intending to leave due to stress/burnout (aOR 2.25; 95% CI 1.01 – 5.05).

Discussion

The COVID-19 pandemic has placed an unprecedented burden on Canadian healthcare workers, with a notable impact on their well-being. Our study, based on the 2022 Survey on Healthcare Workers' Experiences During the Pandemic, revealed that nearly one in four (24.9%) of the 12,139 healthcare workers surveyed across Canada—equating to 3,034 individuals—planned to leave their current job within two years. Of those, a striking 44% (1,350 workers) pointed to stress or burnout as

the driving factor behind their decision. This finding is consistent with global trends [3, 7, 16] and underscores the urgent need to address burnout and stress among healthcare workers, which drive them to leave their jobs and significantly undermine the sustainability and resilience of health systems. This research uniquely focused on identifying how various risk factors affect different healthcare worker groups in Canada, particularly examining the intention to leave due to burnout rather than burnout itself.

Workload and work-life balance

Using "intention to leave due to stress and burnout" as a proxy for burnout, consistent with the Shanafelt and Noseworthy framework, excessive workload emerges as a primary contributor to physicians and nurses considering leaving their jobs due to stress and burnout. This finding aligns with existing literature, which highlights that work overload can triple the risk of burnout in healthcare settings [2]. Additionally, work-life imbalance plays a significant role in influencing burnout-related intentions to leave. During the pandemic, financial strain amplified these intentions among physicians, whereas increased income served as a protective factor for healthcare aides. A pre-pandemic study from Switzerland similarly found that work-life imbalance was strongly associated with burnout, particularly among physicians, while effort-reward imbalance was the key factor driving intentions to leave the profession, especially among other healthcare workers [8]. These findings emphasize that many of these issues, while exacerbated by the pandemic, existed long before it and must be addressed to reduce burnout and stress among healthcare workers, ultimately improving retention.

Resources and work environment

Inadequate resources and operational inefficiencies seem to have added to the stress levels of healthcare workers during the pandemic, especially regarding PPE availability and IPC practices. Physicians who felt they did not receive sufficient IPC training were more likely to consider leaving due stress and burnout, while inconsistent access to N95/KN95 masks increased intention to leave due stress and burnout among healthcare aides. Similarly, a study in Jordan examined factors influencing healthcare providers' intention to leave their jobs during the COVID-19 pandemic and found that concerns about the availability of personal protective equipment (PPE) were a contributing factor to healthcare providers' intention to leave their jobs during the COVID-19 pandemic [1].

Social support and community

Strong social support and organizational cohesion can help reduce burnout risks. Healthcare workers who felt that IPC measures were not consistently enforced were more likely to consider leaving due to stress and burnout, suggesting the importance of supportive work environments Additionally, access to professional therapy appeared to be important, as nurses without such access were more likely to express intentions to leave due to burnout. This finding highlights the value of comprehensive mental health support systems within healthcare settings. Consistent with our findings, a study from the USA also showed that a better work environment was associated with reduced burnout and leave intention among nurses [11].

Organizational culture and values

Conflict between employees and management, which may reflect challenges in organizational culture, was associated with a higher likelihood of intending to leave work due to stress and burnout among nurses in our study. Additionally, moral distress from value conflicts within the workplace appeared to increase intention to leave due to burnout. This finding is consistent with several recent studies [9, 20, 25]. Specifically, a study of 572 healthcare workers in Quebec found that exposure to psychosocial stressors at work increased the likelihood of moral injury by 2.22 to 5.58 times [25]. Efforts to improve organizational culture and align ethical values with workforce needs could be beneficial for reducing healthcare workers intending to leave due to burnout and stress.

Setting differences

The work setting had a notable influence on leave intentions. Physicians in long-term care settings were less likely to consider leaving due to stress and burnout, compared to those in acute care, while healthcare aides showed the opposite trend. This highlights how different work environments can impact burnout in various healthcare roles. The importance of work setting has long been recognized in the literature. A recent study of 313 critical care (CC) and non-critical care (non-CC) clinicians revealed that CC nurses reported the highest rates of burnout (76%) and that burnout was strongly correlated with intention to leave work [9].

Provincial and demographic differences

Provincial disparities in leave intentions were evident, with physicians in British Columbia and Manitoba having lower odds of intending to leave due to burnout and stress compared to those in Ontario, reflecting regional differences in healthcare system contexts and support. Age and experience also played a significant role, as younger healthcare workers were more likely to report

intentions to leave their jobs due to burnout and stress, underscoring the diverse needs of different demographic groups.

Policy implications

Our findings suggest several policy interventions and organizational strategies that could help mitigate burnout and improve retention among healthcare workers. These suggestions are context-dependent and may vary in importance based on specific healthcare settings and regional needs.

Firstly, implementing strategies to manage workload effectively, such as offering flexible scheduling options and workload adjustments, could alleviate burnout risks among healthcare professionals. Promoting a supportive work environment that emphasizes work-life balance and strengthens social support mechanisms may also enhance overall well-being.

Additionally, ensuring sufficient resource allocation and maintaining rigorous adherence to infection prevention and control (IPC) protocols during public health crises are recommended to safeguard healthcare worker health and safety. These measures are critical in providing a secure and supportive environment for healthcare professionals.

Furthermore, enhancing access to professional emotional support services within healthcare settings, including counseling and therapy tailored to the unique stressors faced by healthcare workers, could foster resilience and promote mental well-being.

These policy recommendations aim to create environments that sustain healthcare workforce morale and effectiveness, potentially leading to improved patient care outcomes. They should be adapted and prioritized based on local healthcare contexts and ongoing assessments of healthcare worker needs.

Strengths and limitations

This study's strengths lie in its timeliness and relevance, addressing the issue of intention to leave due to stress and burnout among healthcare workers. Using a large, representative sample of over 12,000 Canadian healthcare workers and the structured Shanafelt and Noseworthy framework, it provides robust, hypothesis-driven insights into systemic and individual risk factors. The paper offers nuanced analysis across occupations, provinces, and demographic groups, highlighting actionable interventions such as workload management, enhanced PPE access, and emotional support. By integrating findings with existing literature and presenting practical policy recommendations, the study contributes valuable guidance for fostering a resilient and sustainable healthcare workforce.

However, the study also has several limitations. First, the timing of the survey administration introduces potential recall bias, as participants were asked to reflect on their experiences over a 1.5-year period. Second, the SHCWEP survey employed a stratified sampling approach and included both self-administered and interviewer-assisted components, facilitating robust data collection. While this method ensures precision within strata, the non-probabilistic sampling frame may limit generalizability to broader healthcare worker populations.

Relying on secondary data limited our ability to examine certain constructs due to the absence of corresponding survey questions. For example, there were no separate questions specifically assessing stress and burnout, which prevented us from analyzing these factors independently or understanding their connection to the intention to leave work. Hence, the dependent variable—intention to leave due to stress or burnout—was used as a proxy for burnout, as the survey did not directly measure burnout among participants. While this is not a direct assessment, it was the closest available indicator in the data. The dataset also lacked information on "control and flexibility" in the work environment, making it impossible to evaluate the relationship between limited control, inflexible job roles, and the intention to leave due to burnout.

Conclusions

Healthcare workers (HCWs) in Canada are significantly impacted by burnout, worsened by the COVID-19 pandemic. The 2022 Survey on Healthcare Workers' Experiences During the Pandemic provided valuable insights into factors influencing intentions to leave work due to burnout. Our study highlights that workload, work-life balance, social support, and organizational culture are key contributors, with notable provincial differences and heightened vulnerability among younger nurses and healthcare aides.

Aligned with a systemic approach to clinician well-being, our findings emphasize the need for tailored organizational changes and policy interventions to improve work environments, reduce administrative burdens, and enhance mental health support. Mitigating burnout requires multifaceted strategies tailored to specific groups to improve healthcare worker retention and strengthen health system resilience.

In conclusion, addressing HCW intention to leave due to burnout necessitates ongoing adaptation and targeted policies to foster supportive work cultures and sustain a resilient workforce, ultimately improving patient care outcomes.

Appendix

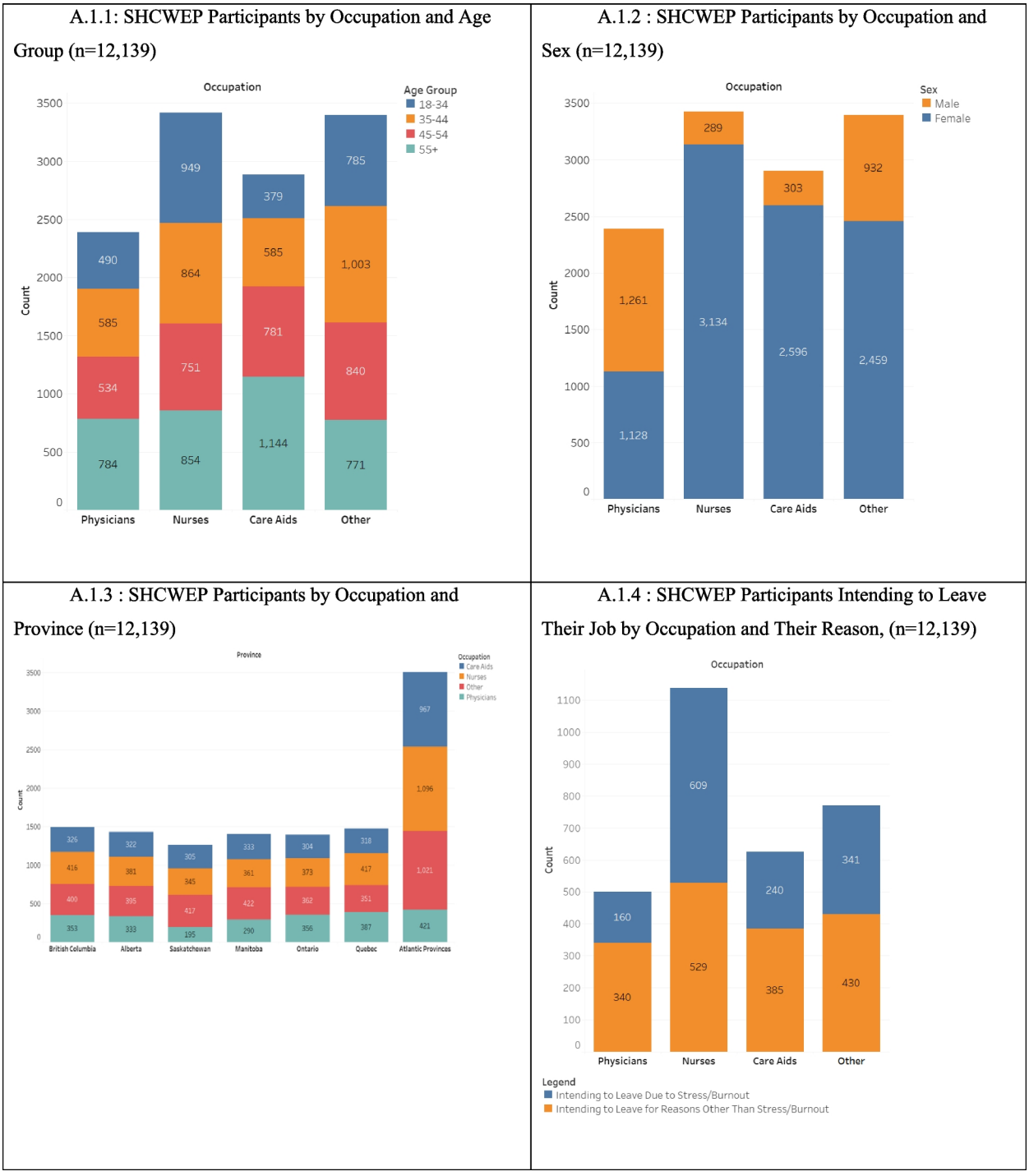

Fig. 5 Sample description

Table 2 Multivariate logistic regression analysis assessing Canadian physician intending to leave their current job due to stress/burnout

		95% Confidence Interval	
Characteristic	**Odds Ratio**	**Lower**	**Upper**
Age (Ref: 18–34)			
35–44	2.92	0.99	8.60
45–54	0.41	0.03	5.97
55+	0.16	0.004	5.22
Gender (Ref: Male)			
Female	1.67	0.78	3.55
Household Number (Ref: 1)			
2	1.2	0.44	3.27
3	0.63	0.16	2.46
4+	2.03	0.54	7.67
Province (Ref: Ontario)			
Alberta	0.83	0.29	2.31
British Columbia	**0.32***	**0.12**	**0.84**
Saskatchewan	0.44	0.12	1.57
Manitoba	**0.34***	**0.13**	**0.89**
Quebec	0.35	0.12	1.04
Atlantic Provinces (NB, NL, NS, PE)	0.76	0.30	1.94
Job Setting (Ref: Acute Care)			
Long-term	**0.047***	**0.003**	**0.601**
Outpatient/ambulatory	1.18	0.563	2.47
Other	1.27	0.295	5.49
Years in current occupation (Ref: < 10 years)			
10 to 19 years	4.58	0.55	37.9
20 years or more	15.9	0.53	478.0
Difficulty Balancing Responsibilities (Ref: No)			
Yes	1.69	0.82	3.51
Employee-Management Conflict (Ref: No)			
Yes	1.75	0.87	3.53
Financial Difficulty (Ref: No)			
Yes	**3.95***	**1.28**	**12.2**
Income Loss (Ref: No)			
Yes	1.96	0.85	4.52
Increased Workload (Ref: Yes)			
No	**5.16*****	**2.46**	**10.9**
IPC Training was Sufficient (Ref: Strongly Agree)			
Agree	**2.84***	**1.19**	**6.78**
Neither	2.05	0.496	8.49
Disagree	**3.69***	**1.11**	**12.30**
Strongly Disagree	5.66	0.63	50.30
New Work Tasks (Ref: No)			
Yes	0.65	0.31	1.35
Professional Therapy Available (Ref: Strongly Agree)			
Agree	0.341	0.099	1.18
Neither	0.455	0.128	1.62
Disagree	0.806	0.191	3.40
Strongly Disagree	0.940	0.168	5.27
Unpaid Leave (Ref: No)			
Yes	2.24	0.58	8.59
Contact with COVID-19 Patients (Ref: No)			
Yes	2.03	9.66	4.26
Increased Income (Ref: No)			
Yes	*2.51*	0.771	8.18

Results are based on multivariable logistic regression accounting for complex survey weights

*$p<0.05$; **$p<0.01$; ***$p<0.001$

Table 3 Multivariate logistic regression analysis assessing nurses intending to leave their current job due to stress/burnout

		95% Confidence Interval	
Characteristic	**Odds Ratio**	**Lower**	**Upper**
Age (Ref: 18–34)			
35–44	**0.387***	**0.172**	**0.871**
45–54	0.527	0.203	1.37
55+	**0.144*****	**0.052**	**0.397**
Household Number (Ref: 1)			
2	1.52	0.761	3.02
3	1.44	0.613	3.37
4+	0.73	0.329	1.65
Province (Ref: Ontario)			
Alberta	0.896	0.439	1.83
British Columbia	1.12	0.563	2.24
Saskatchewan	0.929	0.399	2.17
Manitoba	1.17	0.538	2.55
Quebec	**0.323****	**0.153**	**0.685**
Atlantic Provinces (NB, NL, NS, PE)	0.765	0.420	1.39
Job Setting (Ref: Community/Homecare)			
Acute	1.070	0.364	3.150
Long-term	0.716	0.224	2.290
Outpatient/ambulatory	0.414	0.122	1.400
Other	0.520	0.129	2.090
Years in current occupation (Ref: < 10 years)			
10 to 19 years	**2.790***	**1.210**	**6.410**
20 years or more	1.130	0.444	2.870
Colleagues Followed IPC Policies (Ref: Strongly Agree)			
Agree	1.57	0.692	3.560
Neither	2.54	0.904	7.130
Disagree	0.93	0.374	2.640
Strongly Disagree	0.615	0.139	2.730
Employee-Management Conflict (Ref: No)			
Yes	**1.670***	**1.070**	**2.610**
Financial Difficulty (Ref: No)			
Yes	1.840	0.713	4.760
Increased Workload (Ref: Yes)			
No	**2.46****	**1.300**	**4.640**
Increased Work Stress (Ref: No)			
Yes	**3.790****	**1.670**	**8.590**
IPC Measures were Enforced/Maintained (Ref: Strongly Agree)			
Agree	1.260	0.601	2.630
Neither	1.170	0.417	3.260
Disagree	**3.670***	**1.170**	**11.50**
Strongly Disagree	7.970	0.900	70.50
IPC Training was Sufficient (Ref: Strongly Agree)			
Agree	0.982	0.536	1.800
Neither	**0.247****	0.098	0.610
Disagree	0.910	0.371	2.240
Strongly Disagree	2.230	0.235	21.20
Professional Therapy Available (Ref: Strongly Agree)			
Agree	1.45	0.594	3.530
Neither	1.59	0.642	3.930
Disagree	**3.80****	1.423	10.10
Strongly Disagree	**5.38****	1.827	15.80
Reduced Hours (Ref: Yes)			
No	2.370	0.778	7.240
Unpaid Leave (Ref: No)			
Yes	1.710	0.785	3.710

Results are based on multivariable logistic regression accounting for complex survey weights

*$p<0.05$; **$p<0.01$; ***$p<0.001$

Table 4 Multivariate logistic regression analysis assessing Canadian health care aides intending to leave their current job due to stress/burnout

		95% Confidence Interval	
Characteristic	**Odds Ratio**	**Lower**	**Upper**
Age (Ref: 18–34)			
35–44	0.914	0.354	2.360
45–54	1.640	0.513	5.260
55+	**0.255*** **	0.095	0.677
Gender (Ref: Male)			
Female	0.654	0.255	1.680
Job Setting (Ref: Community/Homecare)			
Acute	2.42	0.97	6.04
Long-term	**4.61*** **	**2.19**	**9.69**
Outpatient/ambulatory	1.90	0.29	12.4
Other	1.36	0.34	5.39
Years in current occupation (Ref: < 10 years)			
10 to 19 years	**2.25***	**1.01**	**5.05**
20 years or more	1.23	0.45	3.35
Access to N95/KN95 Masks (Ref: Always Available)			
Usually Available	1.51	0.59	3.82
Sometimes Available	**4.74*** **	**1.72**	**13.10**
Never Available	1.43	0.48	4.59
Not Needed	1.00	0.47	2.11
Colleagues Followed IPC Policies (Ref: Strongly Agree)			
Agree	0.768	0.28	2.11
Neither	2.17	0.57	8.17
Disagree	0.81	0.17	3.76
Strongly Disagree	1.03	0.07	13.7
Contact with COVID-19 Patients (Ref: No)			
Yes	1.78	0.93	3.40
Financial Difficulty (Ref: No)			
Yes	1.68	0.82	3.40
Increased Income (Ref: No)			
Yes	**0.43***	**0.19**	**0.93**
IPC Measures were Enforced/Maintained (Ref: Strongly Agree)			
Agree	1.02	0.39	2.67
Neither	2.52	0.65	9.68
Disagree	**9.30***	**1.61**	**53.8**
Strongly Disagree	0.72	0.03	16.5
New Work Tasks (Ref: No)			
Yes	1.69	0.91	3.14
Unpaid Leave (Ref: No)			
Yes	1.93	0.85	4.38

Results are based on multivariable logistic regression accounting for complex survey weights

*p<0.05; **p<0.01; ***p<0.001

Authors' contributions
T.O. conducted the analyses in this study and served as the lead author of the manuscript. M.F. supervised the research study from design to implementation and played a major role in writing the manuscript. E.C. led the literature review. M.S. participated in the interpretation of the results. T.B. contributed to writing the discussion. C.F. supervised the data analysis and contributed to its execution. All authors participated in writing the manuscript. All authors have reviewed and approved the final version of the manuscript.

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Data availability
The data that support the findings of this study are available from Statistics Canada, but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of Statistics Canada. The data are made available to participating Canadian Universities.

Declarations

Ethics approval and consent to participate
This study utilized secondary de-identified data obtained from Statistics Canada. As per Statistics Canada's established policies, all their surveys undergo ethics approval and consent procedures, which are outlined in the following document: https://www.statcan.gc.ca/en/microdata/data-centres/faq/mitigation. This study was conducted in accordance with the ethical principles outlined in the *Declaration of Helsinki* (WMA Declaration of Helsinki).

Consent for publication
Not applicable. Given that the data were fully de-identified and made available through Statistics Canada, ethics approval from our institution was not required, in accordance with national regulations and institutional policies.

Competing interests
The authors declare no competing interests.

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