A Longitudinal Survey on Canadian Emergency Physician Burnout

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Study objective: Since Canada eased pandemic restrictions, emergency departments have experienced record levels of patient attendance, wait times, bed blocking, and crowding. The aim of this study was to report Canadian emergency physician burnout rates compared with the same physicians in 2020 and to describe how emergency medicine work has affected emergency physician well-being.

Methods: This longitudinal study on Canadian emergency physician wellness enrolled participants in April 2020. In September 2022, participants were invited to a follow-up survey consisting of the Maslach Burnout Inventory and an optional free-text explanation of their experience. The primary outcomes were emotional exhaustion and depersonalization levels, which were compared with the Maslach Burnout Inventory survey conducted at the end of 2020. A thematic analysis identified common stressors, challenges, emotions, and responses among participants.

Results: The response rate to the 2022 survey was 381 (62%) of 615 between September 28 and October 28, 2022, representing all provinces or territories in Canada (except Yukon). The median participant age was 42 years. In total, 49% were men, and 93% were staff physicians with a median of 12 years of work experience. 59% of respondents reported high emotional exhaustion, and 64% reported high depersonalization. Burnout levels in 2022 were significantly higher compared with 2020. Prevalent themes included a broken health care system, a lack of societal support, and systemic workplace challenges leading to physician distress and loss of physicians from the emergency workforce.

Conclusion: We found very high burnout levels in emergency physician respondents that have increased since 2020. [Ann Emerg Med. 2024;83:576-584.]

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INTRODUCTION

Background

Burnout is a serious work-related syndrome involving emotional exhaustion and depersonalization, which leads to workforce depletion, medical errors, depression, and suicide.[1] Over the past 3 years, the coronavirus disease of 2019 (COVID-19) pandemic has taken a toll on health care. Physicians are reporting higher burnout and depression rates compared to prepandemic times.[2,3] The pandemic has had a disproportionate toll on women physicians and physicians who are parents, in terms of reduced work hours, work-family conflict, anxiety, and depression.[4-6]

Importance

Emergency physicians have been particularly affected by burnout with studies showing higher burnout rates among women emergency physicians compared with men.[7-9] Younger, less experienced emergency physicians have reported greater pandemic-associated burnout and greater posttraumatic stress compared with older physicians.[9-10] As Canada reopened from the COVID-19 pandemic, emergency departments (EDs) began to experience record challenges, including increased patient attendance, crowding, bed blocking, and increased wait times for assessment and admission.[11,12]

Goals of This Study

The aim of this study was to report Canadian emergency physician burnout rates in the fall of 2022 compared with burnout rates reported by the same physicians in 2020 and to describe how emergency medicine work conditions have affected physician well-being.

Editor's Capsule Summary

What is already known on this topic

Emergency physicians report high rates of burnout, with the recent COVID-19 pandemic and broader social affects adding threats.

What question this study addressed

In this longitudinal study of over 300 Canadian emergency physicians, how have rates of burnout changed over time?

What this adds to our knowledge

Burnout levels increased since the pandemic, with respondents citing structural issues including a fragmented health care system and challenging work environments.

How this is relevant to clinical practice

Broad interventions may be needed to address the growing strain on the emergency care workforce and to prevent attrition.

MATERIALS AND METHODS

This is a longitudinal, mixed methods study following a cohort of Canadian emergency physicians who enrolled into the study at the beginning of the pandemic in April 2020. The study was approved by the Hamilton Integrated Research Ethics Board. The current survey is reported in adherence with the Checklist for Reporting of Survey Studies guidelines and the Consolidated Criteria for Reporting Qualitative Research guidelines.[13-14]

The Longitudinal Study Population

At the outset of the COVID-19 pandemic, we launched a national longitudinal survey of Canadian emergency physicians. Emergency physicians were invited through email, social media, and professional societies (Network of Canadian Emergency Researchers, Society of Rural Physicians of Canada, the Canadian Association of Emergency Physicians, Association des médecins d'urgence du Québec, and Association des spécialistes en médecine d'urgence du Québec).[15] Both staff and resident emergency physicians were eligible to participate. Emergency physicians working in a country other than Canada were not eligible. Participants registered in April 2020, entering their demographic data at registration. Participants of the longitudinal study were invited to complete a weekly survey during the first 10 weeks of the pandemic and 2 follow-up surveys that were initiated in November 2020 and September 2022.[9,15]

The 2022 Survey

All 615 participants enrolled in the longitudinal study were invited by text or email (according to their stated preference) to complete a confidential survey on September 28, 2022. Two additional follow-up reminders were sent to nonresponders on October 5 and 13, 2022. Additionally, we advertised the survey using Twitter (@EmergWell).

The survey consisted of the Maslach Burnout Inventory Human Services Survey for Medical Personnel (Mind Garden, Inc).[16] The Maslach Burnout Inventory is a valid and reliable tool for measuring burnout.[16] The Maslach Burnout Inventory for medical personnel consists of 22 statements that are rated by the participant using a frequency scale with 7 options ranging from "never" to "every day." The Maslach Burnout Inventory does not produce a single "burnout" score; it measures the frequency of burnout components, including emotional exhaustion, depersonalization, and personal accomplishment. The survey ended with an optional open-ended question "*Is there anything you would like to tell us about your experiences? (For example, are you feeling differently now compared to over the past 2 years?).*" The survey was disseminated in both English and French, and participants were free to respond in either language.

Quantitative Analysis

The prespecified dual primary outcomes were emotional exhaustion and depersonalization levels among participants. Emotional exhaustion and depersonalization are considered to form the core of burnout. We did not report personal accomplishment because there is disagreement about whether personal accomplishment is a direct measure of burnout.[17] High emotional exhaustion was defined as a score 27 or more, and high depersonalization was defined as a score 10 or more.[18,19] Multivariate regression analysis was performed to identify associations with emotional exhaustion and depersonalization scores. Based on prior reported associations, the independent variables were prespecified as sex, age (as a continuous variable), training route, and family circumstances (living with children versus not).[9,15,20]

We previously surveyed study participants using the Maslach Burnout Inventory questionnaire between November 2020 and February 2021 (the results are reported elsewhere).[9] Study participants are identified by their unique study identifier. Using only participants who had completed both the 2022 and 2020 Maslach Burnout Inventory survey, a comparison of total score and average response per question was performed between the emotional exhaustion and depersonalization results

obtained among the same participants in 2020 and 2022. We used a paired *t* test. Analyses were performed using Stata version 13.1.

Qualitative Analysis

Two researchers (AT and DS, first and second year female medical students) performed a generic qualitative thematic analysis of the optional free-text question.[21] Reflexivity is an important aspect of qualitative research, which acknowledges the lens through which the research material is coded and interpreted. At the outset of the analysis, both researchers discussed their personal assumptions and beliefs around how the pandemic had affected the ED work environment to ensure reflexivity during the analytical process. Neither had started their medical clerkship or had worked in an ED. AT is a trained qualitative researcher with 5 years of experience and is an independent researcher. AT conducted emergency physician interviews on the effects of the pandemic in 2020 and performed qualitative analysis of the 2020 survey. DS has training in qualitative research methods and conducted qualitative analyses in 2 prior studies. The analysis was performed using Dedoose version 9 software (www.dedoose.com). Deidentified free-text answers were imported and analyzed in the language they were written (either French or English). A unique codebook (Appendix E1, available at http://www.annemergmed.com) was generated by the research team, where codes were allocated into common themes representing common emotions, stressors, challenges, and responses. Themes were presented to the investigator group (consisting of 6 emergency physicians who are qualitative researchers, quantitative researchers or wellness experts, a psychologist, a psychiatrist, and a methodologist) for a conceptual audit of the themes. Themes were further edited following journal editorial feedback.

RESULTS

2022 Survey Results

In 2022, survey data were collected between September 28 and October 28, 2022. The response rate among those registered in the longitudinal study was 381 (62%) of 615. There were 5 additional participants who responded to the survey advertised on social media. Three participants were excluded from the analysis because they did not complete the full Maslach Burnout Inventory and did not answer the free-text question, leaving 383 completed Maslach Burnout Inventory surveys. Respondent demographics are presented in Table 1 (left-hand column). There was at least one participant in every province and territory in Canada, except the Yukon. The median age was 42 years, and there was a relatively even split between men and women (49% versus 51%). Sixty-six percent had children living at home, 36% were Canadian Royal College/American board trained, and 45% were Canadian College of Family Medicine trained.

Two hundred twenty-five respondents (59%) had high emotional exhaustion, and 245 of respondents (64%) had high depersonalization scores. Two hundred eighty-two (74%) respondents had either high emotional exhaustion and/or high depersonalization scores. After adjustment for age, living with children, and route of emergency training, being a woman was a predictor of higher emotional exhaustion (adjusted odds ratio [OR] 4.5, 95% confidence interval [CI] 1.9 to 7.2). Increased age was a predictor of lower depersonalization (each additional year of age adjusted OR −0.16; 95% CI −0.24 to −0.08). No additional correlations were observed.

Of the 383 responders to the 2022 survey, 309 of 383 respondents also completed our 2020 survey (Figure E1, available at http://www.annemergmed.com). The demographics of participants completing both Maslach Burnout Inventory surveys were similar to the demographics of those completing the 2022 survey (Table 1, right-hand column). Among the 309 participants who completed both surveys, emotional exhaustion and depersonalization scores increased between 2020 and 2022 (Table 2). The average response to emotional exhaustion questions increased by 0.6 points (95% CI 0.5 to 0.7; responses range from "never" = 0 to "every day" = 6). The average response to depersonalization questions increased by 0.5 points (95% CI 0.4 to 0.6).

Qualitative Analysis Results

In the 2022 survey, 180 (47%) of 383 of respondents answered the question *"Is there anything you would like to tell us about your experiences? (For example, are you feeling differently now compared to over the past 2 years?)."* Thematic analysis of free-text responses revealed 5 themes explaining the causes and effects of burnout: the health care system is broken, societal disinterest, work challenges, physician distress, and wanting to leave emergency medicine. Table 3 lists the themes and subthemes and provides example quotes.

The most prevalent theme was that the health care system is broken. Participants witnessed health care standards deteriorating, feeling the additional burden to make up for system inadequacies, sensing a lack of control over health care provision, and worrying about the future of health care in Canada. Participants talked about

Table 1. Demographics of participants.

Descriptor	All 2022 Survey Responders N (%) or Median (IQR) N = 383	Participants Who Responded to Both the 2022 and 2020 Surveys† N (%) or Median (IQR) N = 309
Sex		
Male	187 (48.8)	152 (49.2)
Female	194 (50.7)	156 (50.5)
Missing	2 (0.5)	1 (0.3)
Age, y	42 (36-51)	43 (37-51)
Stage of career		
Staff	356 (93.0)	290 (93.9)
Resident	25 (6.5)	18 (5.8)
Missing	2 (0.5)	1 (0.3)
Years of experience (mean, SD)		
Staff (since completing residency)	12 (5-20)	13 (6-21)
Residents (years of training)*	4 (3-4)	4 (3-5)
Province of practice		
Ontario	202 (53.0)	174 (56.5)
Québec	52 (13.7)	40 (13.0)
British Columbia	44 (11.6)	34 (11.0)
Alberta	19 (5.0)	14 (4.6)
Manitoba	19 (5.0)	13 (4.2)
Nova Scotia	15 (3.9)	12 (3.9)
Saskatchewan	10 (2.6)	7 (2.3)
New Brunswick	10 (2.6)	7 (2.3)
Newfoundland and Labrador	7 (1.8)	4 (1.3)
Prince Edward Island	1 (0.3)	1 (0.3)
Northwest Territories	1 (0.3)	1 (0.3)
Nunavut	1 (0.3)	1 (0.3)
Missing	2 (0.5)	1 (0.3)
Shifts worked per month at pandemic start	12 (10-14)	12 (9-14)
Shift spread at pandemic start		
Even spread	234 (61.4)	188 (61.0)
More days	48 (12.6)	35 (11.4)
More evenings	65 (17.1)	52 (16.9)
More nights	34 (8.9)	33 (10.7)
Missing	2 (0.5)	1 (0.3)
Immunosuppressed	11 (2.9)	6 (1.9)
Lives alone	33 (8.7)	27 (8.8)
Lives with someone else	348 (91.3)	281 (91.2)
Partner	334 (87.2)	269 (87.1)
Children	254 (66.3)	206 (66.7)
Parents	13 (3.4)	10 (3.2)
Other family	10 (2.6)	9 (2.9)
Roommates	8 (2.1)	6 (1.9)
Partner is health care worker	119 (31.1)	95 (35.3)

IQR, interquartile range; *SD*, standard deviation.
*Residency training is either 3 or 5 years in length.
†In total, 416 physicians participated in the 2020 survey.

Table 2. Comparison between Maslach Burnout Inventory survey results recorded in 2020 and 2022.*

N = 309	2020 Mean (SD)	2022 Mean (SD)	Mean Difference (95% CI)
Emotional exhaustion			
Total score	24.4 (12.4)	29.7 (13.1)	5.3 (4.3-6.4)
Question average score	2.7 (1.4)	3.3 (1.5)	0.6 (0.5-0.7)
Depersonalization			
Total score	10.8 (6.9)	13.2 (7.4)	2.4 (1.8-3.0)
Question average score	2.2 (1.4)	2.6 (1.5)	0.5 (0.4-0.6)

*Survey responses include the following: 0 = never, 1 = a few times a year or less, 2 = once a month or less, 3 = a few times a month, 4 = once a week, 5 = a few times a week, 6 = every day.

disappointment in the system, lack of resources, lack of staff, working in a "horrible," unsafe environment, minimal hospital support and lack of government acknowledgment of this crisis. They had feelings of anger toward hospital administration or the government.

> "We don't have the human resources in Canada currently to care for our aging population, and there doesn't seem to be any proactive measures to address this, or the collapse of the system. It is morally distressing to watch elderly patients dropped off at the emergency room, with nowhere else to go, languish in our corridors, end up sicker than when they arrived as they wait for placement, and in some cases die from neglect. We are asleep at the wheel, and we are headed for a crash." (Record ID 777)

Participants commented on societal disinterest with feelings that the public did not care about the health care crisis, no one cared, and there was nowhere to vent. Patients were demanding more of their health care providers, and there was frustration with societal disinformation.

> "The number of abusive patients is increasing all the time. It is unfathomable that it is the front-line workers who have been showing up for our population throughout the pandemic that get the brunt of people's frustrations with our broken health care system. Everyone deserves better. Patients, and nurses and doctors, we all deserve better." (Record ID 115)

Daily shifts were plagued with work challenges. Some participants blamed these new problems on primary care access, the rise of virtual care, delays to see specialists, and the concept that patients can be sent to the ED for care, regardless of the problem. Participants described increased workload with longer or more frequent ED shifts. Many described deteriorating clinical care with bed blocks, hallway medicine, longer wait times, crowding, and high patient volumes. There was little satisfaction with patient care.

> "I feel like the entire system is collapsing and we in emerge are supposed to soak up all the failures …… I feel awful about trying to provide good care for my patients in the hallway, and constantly feel like I can't do a good job anymore and it makes me feel like a terrible doctor." (Record ID 720)

> "There are fewer and fewer opportunities to feel like I'm doing my job well." (Record ID 675)

Participants described personal distress, including moral injury, pessimism, depression, hopelessness, powerlessness, and feeling used, unappreciated, and less resilient. Many participants described fatigue and burnout. Comments included feeling that there is too much stress to handle, needing to reduce shifts to cope, noting a lack of insight into the extent of personal burnout, and acknowledging that coworkers are burnt out. This affected personal life, family relationships, the ability to feel joy, and personal health.

> "I feel used and abused. Powerless. Stuck in a system that offers us no support and more importantly no resources to help our patients." (Record ID 454)

The comments also articulated how many individuals have been wanting to leave emergency medicine. The manifestations of this theme included comments mentioning retiring, quitting, regretting choosing the profession, feeling uncertain about continuing a career in emergency medicine, watching coworkers leave, seeing emergency medicine as a dying specialty, feeling like they did not sign up for this, and accepting that this is the new normal.

> "This is awful. Worst in 20 years. With no light; just darkness. I don't know how I'll survive in emergency medicine other than it's what I'm trained to do. I would not have chosen this career if I knew it would be like this. Three years ago, I knew I could spend my whole career in emergency medicine – not sure now." (Record ID 386)

> "I still love the essence of emergency medicine: caring for patients and having the privilege of making their scary, horrible day a bit better. The environment is drowning me slowly, and it's increasingly difficult to come up for air. After 23 years in the ED, I don't think I'll last another year. I'm done." (Record ID 278)

Table 3. Summary of themes.

Theme	Subthemes	Example quotes
The health care system is broken	Inadequate health care system Health care system is deteriorating Understaffed Difficult work environment Lack of institutional and government support	I am dreading the winter. With hospitals full and an anticipated wave of COVID/flu this winter with no public health measures in place I feel we have been abandoned. Or more accurately, thrown in the lion's den with a dandelion as our only weapon. Our governments have shown their utter callousness and emerg staff and paramedics will be bearing the brunt of their failures with absolutely no support. I need a system that cares about its providers and patients, and less shifts. (Record ID 60) I think the hardest part is the moral distress of watching the quality of care we're able to provide deteriorate due to short-staffing and lack of treatment spaces. The new reality is trying to treat patients in makeshift hallway spaces and waiting rooms with fewer staff and resources than we had 2 years ago. It often feels like the rest of the system uses the ED as a safety net, but we have no safety net to decant to and we end up helplessly watching patients and colleagues suffer in a system that doesn't seem to care. (Record ID 801)
Societal disinterest	No one seems to care More abuse/anger/demands from patients Negative feelings toward the public	The public, who once told us we were heroes, are now sending complaints to colleges and hospitals at never-before-seen numbers. There seems to be no recognition of the shortages we are facing with our practices, the wait times. There is zero tolerance for us to perform as human beings in an imperfect world. (Record ID 41)
Work challenges	ED takes the brunt of the pandemic burdens Increased workload Deteriorating clinical care	Overall, I feel more discouraged – few resources, online / virtual care, lack of primary care. In emergency, we take the brunt of all of this. We see people in person, every visit every day… In addition, we get asked for solutions and blamed for lack of resources – for the most part, things that we are totally unable to change. (Record ID 775) We are losing docs. We are working so short; our shifts have gotten longer to cover the hours. And we have reduced the number of shifts, but the number of patients coming to the ER is just increasing and so is their complexity. We have gone from 8 shifts a day model to 6 and we are talking about going to 5 (!!!), which is just unsafe. We are a tertiary centre and we have talked about closing an emergency room as we try and figure out how we can safely function. (Record 115) The thing I find hardest clinically is that my own meter of what is excellent care is wavering. (Oh well, can't do a glucometer now… probably OK; can't get a CT tonight, doesn't matter what I am missing anyway because ORs are packed tonight so even if it's surgical they would be waiting anyway) – that is deeply corrosive to my sense of why I trained so hard for this job. (Record ID 194)
Physician distress	Extreme burnout and fatigue Emotional distress/damage Detrimental impact on personal life and well-being	Work in the ED always had moments of levity and comradery. Now everyone is so burned out you see it constantly in the faces of beleaguered colleagues and there are now seldom moments of levity. In fact, we more often reach out now, when a colleague is struggling to say 'it's okay, you can do this'. It's that bad. Just get through the shift. And the next. And the next. (Record ID 748) I'm so tired of people talking about burnout. What I am feeling isn't burnout. It's moral injury. No amount of 'self-care' is going to get my patient to OR on time today when they need it, or a bed to be in, or a nurse to take care of my orders, or more docs to do this job, or computers to function with the EHR we now have, etc. It's not lack of self-care, it's being handicapped and unable to provide patients the level of care I am trained to provide, and that patients need and deserve. (Record ID 115) I suspect my family relationships suffer, though I pay close attention to keeping things as 'normal' as possible, and I continue to have excellent support from my family. How much longer that can last is a large concern to me. (Record ID 40)

Table 3. Continued.

Theme	Subthemes	Example quotes
Wanting to leave emergency medicine	Leaving Regret choosing emergency medicine Job is difficult	Feeling more burnt out and taking me longer to recover from shifts. Want to quit as I feel it is the only answer to decrease the stress. (Record ID 748) I am completely discouraged by the state of our health care system as a whole and I have no hope for change in the near future. Although I still love emergency medicine as much as the first day I started, I wish I could leave my job and retire today. (Record ID 216)

CT, computed tomography; *EHR*, electronic health record.

LIMITATIONS

As for all survey research, responder bias is likely. We cannot report a response rate for the original creation of the longitudinal cohort because we used multiple methods to enroll participants (including social media). In addition, we do not know how many emergency physicians read the invite to participate. In 2016, the Canadian Association of Emergency Physicians and Royal College of Physicians and Surgeons of Canada estimated that there were around 6,500 physicians practicing as emergency physicians in Canada, so our survey included only a small portion of all Canadian emergency physicians.[22] We cannot generalize our findings to all Canadian emergency physicians. However, it seems the cohort did not preferentially enroll burned out physicians because we reported low burnout levels (<20%) in the summer of 2020 when reported experiences differed from those captured in the 2022 survey.[15,23] We did not measure the proportion of participants who had already left the profession or retired since cohort inception, which limits our understanding of how this might have affected the lower response rate of 62% in the 2022 survey. Preferential loss of participants because of burnout could lead to underreporting of burnout measures. Only 47% of respondents chose to answer our free-text question, and we do not know whether the thematic findings are representative of those who did not answer the question.

DISCUSSION

This longitudinal Canadian emergency physician survey found that most physicians responding to our fall 2022 survey were experiencing high levels of burnout. Furthermore, the burnout levels had increased between the winter of 2020/2021 and fall 2022. We identified 5 themes explaining extreme burnout and fatigue, moral distress and injury, and loss of the physician workforce.

Our qualitative data provide important insights into the potential sources of burnout and moral distress, which were similar among participants and included inadequate resources, crowding, high patient volumes, hallway medicine, staff shortages, and political inaction to address this emergency. Our data also provide insight toward future outcomes: loss of emergency physicians from the workforce and adverse physician mental health and adaptation strategies, such as changing to part-time work, taking burnout leave, and prioritizing external factors (eg, family and wellness) over work.

Before the pandemic, Lim et al[20] reported even higher rates of burnout among Canadian emergency physician survey respondents. Our findings are consistent with a large American survey that reported increasing burnout rates among physicians.[2] Burnout was associated with being an emergency physician, a woman, and younger.[2] The effect of gender on Maslach Burnout Inventory scores is consistent with previous studies, where women physicians experiencing burnout tend to score particularly high on the emotional exhaustion parameter.[24] Although concordant, our burnout findings appear more severe than those reported among unselected Canadian physicians in 2021, and our findings are discordant with a Canadian health care worker survey reporting that burnout levels peaked in spring 2021.[3,25] These differences might be explained by our study being focused on solely emergency physicians. As Canada opened restrictions, the ED workload has increased beyond expectations with hallway medicine being the new norm and unprecedented numbers of patients requiring complex care.

Physician burnout is a patient safety risk, is associated with low-quality care, and runs against the Quintuple Aim of a sustainable health care system.[26,27] Burnout is associated with poor physician mental health and loss of workforce.[1] Both moral distress and loss of the workforce were identified in this study, suggesting an established negative cycle of burnout causing physician loss and further causing workforce burnout. Emergency physician loss is already a crisis for the Canadian health care system because it has led to understaffed and closed EDs. Emergency physicians who remain in the profession report working in an unsustainable system with few resources, providing low-quality care to large numbers of patients.

To move forward from here requires broad and sweeping changes in health care generally and in emergency medicine specifically. Shanafelt et al has described this future state as "Wellness 2.0" where physicians are considered humans rather than heroes.[28] If emergency medicine is to have a future, progress must be made on all 3 categories of the Stanford model of professional sustainability: efficiency of practice initiatives, building a culture of wellness, and personal resilience. The most effective strategies will focus on the former 2 categories by reducing workplace violence, eliminating access blocks, ensuring adequate staffing and flexible scheduling, providing sabbatical programs, offering options for personal/health leaves, reducing administrative burden, and developing collaborative models of leadership.

The need for longitudinal, high-quality surveillance data can assist and inform policy makers and create a case for supportive initiatives. Interventional studies using the highest quality indicators are needed to objectively help influence physician health and well-being.

In conclusion, this study found most participating emergency physicians are experiencing high burnout levels, and burnout levels have worsened over the past 2 years. Participants identified major contributors to their distress to be a broken health care system, the lack of political or societal support, and systemic workplace challenges, which are mediators of moral distress and lead to loss from the workforce. Our findings are a clear call for immediate government action to address the collapse of the emergency care system and for organizations to redress the negative impact experienced by emergency physicians when institutional support is lacking.

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Data sharing statement: Data are available on request to the corresponding author.

All authors attest to meeting the four ICMJE.org authorship criteria: (1) Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND (2) Drafting the work or revising it critically for important intellectual content; AND (3) Final approval of the version to be published; AND (4) Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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REFERENCES

1. Dyrbye LN, Thomas MR, Massie FS, et al. Burnout and suicidal ideation among U.S. medical students. *Ann Intern Med*. 2008;149(5):334-341.
2. Shanafelt TD, West CP, Dyrbye LN, et al. Changes in burnout and satisfaction with work-life integration in physicians during the first 2 years of the COVID-19 pandemic. *Mayo Clin Proc*. 2022;97(12):2248-2258.
3. National physician health survey. 2022. Canadian Medical Association. Accessed January 1, 2023. https://www.cma.ca/sites/default/files/2022-08/NPHS_final_report_EN.pdf
4. Frank E, Zhao Z, Fang Y, et al. Experiences of work-family conflict and mental health symptoms by gender among physician parents during the COVID-19 pandemic. *JAMA Netw Open*. 2021;4(11):e2134315.
5. Delaney RK, Locke A, Pershing ML, et al. Experiences of a health system's faculty, staff, and trainees' career development, work culture, and childcare needs during the COVID-19 pandemic. *JAMA Netw Open*. 2021;4(4):e213997.
6. Harry EM, Carlasare LE, Sinsky CA, et al. Childcare stress, burnout, and intent to reduce hours or leave the job during the COVID-19 pandemic

among US health care workers. *JAMA Netw Open*. 2022;5(7):e2221776.
7. Nguyen J, Liu A, McKenney M, et al. Impacts and challenges of the COVID-19 pandemic on emergency medicine physicians in the United States. *Am J Emerg Med*. 2021;48:38-47.
8. Petrino R, Riesgo LG-C, Yilmaz B. Burnout in emergency medicine professionals after 2 years of the COVID-19 pandemic: a threat to the healthcare system? *Eur J Emerg Med*. 2022 Aug 1;29(4):279-284.
9. Mercuri M, Clayton N, Archambault P, et al. Canadian emergency medicine physician burnout: a survey of Canadian emergency physicians during the second wave of the COVID-19 pandemic. *CJEM*. 2022;24(3):288-292.
10. Marco CA, Larkin GL, Feeser VR, et al. Post-traumatic stress and stress disorders during the COVID-19 pandemic: survey of emergency physicians. *J Am Coll Emerg Physicians Open*. 2020;1(6):1594-1601.
11. Critical conditions in Canadian emergency departments are due to lack of human resources and timely access to hospital beds 2022. Canadian Association of Emergency Physcians. Accessed January 1, 2023. https://caep.ca/wp-content/uploads/2022/07/CriticalCondition-Jul7.pdf
12. Drummond A. State of Emergency: Inside Canada's ER Crisis. *Macleans*. 2022. https://macleans.ca/longforms/er-doctor-healthcare-crisis-canada/
13. Sharma A, Minh Duc NT, Luu Lam Thang T, et al. A Consensus-Based Checklist for Reporting of Survey Studies (CROSS). *J Gen Intern Med*. 2021;36(10):3179-3187.
14. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*. 2007;19(6):349-357.
15. de Wit K, Mercuri M, Wallner C, et al. Canadian emergency physician psychological distress and burnout during the first 10 weeks of COVID-19: A mixed-methods study. *J Am Coll Emerg Physicians Open*. 2020;1(5):1030-1038.
16. Maslach C, Jackson SE, Leiter MP. Maslach Burnout Inventory Manual. Mind Garden, Inc., 1996-2018.
17. Lheureux F, Truchot D, Borteyrou X, et al. The maslach burnout inventory – Human services survey (mbi-hss): factor structure, wording effect and psychometric qualities of known problematic items. *Trav Hum*. 2017;80:161-186.
18. Dyrbye LN, West CP, Satele D, et al. Burnout among U.S. medical students, residents, and early career physicians relative to the general U.S. population. *Acad Med*. 2014;89(3):443-451.
19. Lin M, Battaglioli N, Melamed M, et al. High prevalence of burnout among US emergency medicine residents: results from the 2017 national emergency medicine wellness survey. *Ann Emerg Med*. 2019;74(5):682-690.
20. Lim R, Aarsen KV, Gray S, et al. Emergency medicine physician burnout and wellness in Canada before COVID19: A national survey. *CJEM*. 2020;22(5):603-607.
21. Braun V, Clarke V. What can "thematic analysis" offer health and wellbeing researchers? *Int J Qual Stud Health Well-being*. 2014 Oct 16;9:26152.
22. Final report of the collaborative working group on the future of emergency medicine in Canada. Emergency medicine training and practice in Canada: celebrating the past and evolving for the future. Canadian Association of Emergency Physicians. Accessed January 1, 2023. https://caep.ca/wp-content/uploads/2017/07/cwg0001_cwg-em_report_-_executive_summary_-_english_-_singles_-_web1.pdf
23. Tran A, Wallner C, de Wit K, et al. Humans not heroes: Canadian emergency physician experiences during the early COVID-19 pandemic. *Emerg Med J*. 2023;40(2):86-91.
24. Purvanova RK, Muros JP. Gender differences in burnout: A meta-analysis. *J Vocati Behav*. 2010;77(2):168-185.
25. Maunder RG, Heeney ND, Hunter JJ, et al. Trends in burnout and psychological distress in hospital staff over 12 months of the COVID-19 pandemic: a prospective longitudinal survey. *J Occupl Med Toxicol*. 2022;17(1):11.
26. Shanafelt TD, Balch CM, Bechamps G, et al. Burnout and medical errors among American surgeons. *Ann Surg*. 2010;251(6):995-1000.
27. Nundy S, Cooper LA, Mate KS. The quintuple aim for health care improvement: a new imperative to advance health equity. *JAMA*. 2022;327(6):521-522.
28. Shanafelt TD. Physician well-being 2.0: where are we and where are we going? *Mayo Clin Proc*. 2021;96(10):2692-2693.