

## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	A Cross-sectional Survey on Physician Burnout During the COVID-19 Pandemic in Vancouver, Canada: The Role of Gender, Race and Sexual Orientation
<b>AUTHORS</b>	Khan, Nadia; Palepu, Anita; Dodek, Peter; Salmon, Amy; Leitch, Heather; Ruzycski, Shannon; Townson, Andrea; Lacaille, Diane

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Ivan Buljan Sveuciliste u Splitu Medicinski fakultet
<b>REVIEW RETURNED</b>	09-Mar-2021

<b>GENERAL COMMENTS</b>	<p>The authors have performed an interesting study. However, some details need to be added before the study is published.</p> <p>P5R1 There is no Introduction subheading</p> <p>P7R3: There are no references on literature based on which the survey was developed. Also, the subheading is Questionnaire, and the text is describing survey. Also, the piloting needs to be described in details. How many physicians participated, what were the changes.</p> <p>P9R17 If there were no limitations on time to respond, how did you decide to stop collecting the data?</p> <p>In Results subsection, when stating percentages, please accompany them with frequencies. Also, in Results, you state that participants reported burnout, but I did not find in the article what was the cutoff for the burnout diagnosis.</p> <p>Work to life conflict was assessed using only one item. I think this needs to be emphasized in discussion.</p>
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<b>REVIEWER</b>	Roger Ho National University of Singapore, Department of Psychological Medicine
<b>REVIEW RETURNED</b>	24-Mar-2021

<b>GENERAL COMMENTS</b>	<p>I have the following comments for the authors to address and I am happy to review this paper again.</p> <p>1) Although this paper was conducted at the University of British Columbia. I found some of the specialties not a recognized specialty</p>
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	<p>by the Royal College of Physicians and Surgeons of Canada. What is social medicine? Should it be called respiratory medicine instead of respirology. Respirology is a name of a journal.</p> <p>2) In the introduction and in the discussion, please compare the prevalence of burnout in this study during the COVID-19 pandemic with burnout prior to the pandemic. The following is a landmark burnout study:</p> <p>Prevalence of Burnout in Medical and Surgical Residents: A Meta-Analysis. <i>Int J Environ Res Public Health</i>. 2019 Apr 26;16(9):1479. doi: 10.3390/ijerph16091479. PMID: 31027333; PMCID: PMC6539366.</p> <p>3) Under Figure 1, the authors showed that respiratory medicine has the highest burnout rate. This is similar to a recent study that found surgeons who specialize in head and neck region reported high level of stress during the pandemic. Please discuss the findings of the following study and draw conclusion between physicians and surgeons.</p> <p>Psychological Health of Surgeons in a Time of COVID-19: A Global Survey. <i>Ann Surg</i>. 2021 Jan 22. doi: 10.1097/SLA.0000000000004775. Epub ahead of print. PMID: 33491983.</p> <p>4) The authors mentioned "strategies to reduce burnout are needed urgently." Please specify the strategies. I recommend to talk about online psychotherapy such as Internet Cognitive Behavior Therapy. The authors can discuss the following:</p> <p>The most evidence-based treatment is cognitive behaviour therapy (CBT), especially Internet CBT that can prevent the spread of infection during the pandemic.</p> <p>Use of Cognitive Behavior Therapy (CBT) to treat psychiatric symptoms during COVID-19: Ho CS et al Mental Health Strategies to Combat the Psychological Impact of COVID-19 Beyond Paranoia and Panic. <i>Ann Acad Med Singapore</i>. 2020;49(3):155-160.</p> <p>Cost-effectiveness of iCBT: Zhang MW et al Moodle: The cost effective solution for internet cognitive behavioral therapy (I-CBT) interventions. <i>Technol Health Care</i>. 2017;25(1):163-165. doi: 10.3233/THC-161261. PMID: 27689560.</p> <p>Internet CBT can treat psychiatric symptoms such as insomnia: Soh HL et al Efficacy of digital cognitive behavioural therapy for insomnia: a meta-analysis of randomised controlled trials. <i>Sleep Med</i>. 2020 Aug 26;75:315-325. doi: 10.1016/j.sleep.2020.08.020. Epub ahead of print. PMID: 32950013.</p> <p>5) The authors should discuss the role of female gender in poor mental health such as depression prior to the pandemic. The findings of female physicians reported higher levels of burnout was expected based on previous epidemiological study:</p> <p>Prevalence of Depression in the Community from 30 Countries between 1994 and 2014. <i>Sci Rep</i>. 2018;8(1):2861. Published 2018</p>
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## VERSION 1 – AUTHOR RESPONSE

Reviewer: 1 Dr. Ivan Buljan, Sveuciliste u Splitu Medicinski fakultet

P5R1 There is no Introduction subheading

Thank you we added this.

P7R3: There are no references on literature based on which the survey was developed. Also, the subheading is Questionnaire, and the text is describing survey.

Also, the piloting needs to be described in details. How many physicians participated, what were the changes.

Thank you. We included the following references for the development of the survey: references # 10-12 were cited for the Maslach Burnout Inventory, reference #13 for the work to life conflict question and intervention questions were drawn from references #14-16. We changed the subheading to Survey. We added further detail to the number of physicians participating in the piloting and the nature of the changes.

P9R17 If there were no limitations on time to respond, how did you decide to stop collecting the data?

We did not specify any time limit on the survey invitation to potential participants. As there were no further responses being returned for a >2 months from the last survey response, we closed the data collection.

In Results subsection, when stating percentages, please accompany them with frequencies.

Also, in Results, you state that participants reported burnout, but I did not find in the article what was the cutoff for the burnout diagnosis.

Thank you. I added (n/N) to the percentages in the results section. The presence of physician burnout was defined as emotional exhaustion scores  $\geq 27$  or depersonalization scores  $\geq 10$  (noted in page 5, first paragraph). I have further clarified these definitions.

Work to life conflict was assessed using only one item. I think this needs to be emphasised in discussion.

Thank you I have added this point in the discussion.

Reviewer: 2 Dr. Roger Ho, National University of Singapore

Comments to the Author:

I have the following comments for the authors to address and I am happy to review this paper again.

1) Although this paper was conducted at the University of British Columbia. I found some of the specialties not a recognized specialty by the Royal College of Physicians and Surgeons of Canada. What is social medicine? Should it be called respiratory medicine instead of respirology. Respirology is a name of a journal.

Thank you, Social Medicine is a newly named Division that was previously referred to as the Division of AIDS. The division members include many social scientists and Internal Medicine physicians focused on Addiction Medicine. The research is focused on social determinants of health and this name was approved through a rigorous process at the UBC Faculty of Medicine. There are other Divisions of Social Medicine in the US and Europe. You are correct that this is not an official RCPSC specialty but is a Division in our Department. I will add an explanation in the table as I agree that this is an unknown name. Respiriology is also used to describe Respiratory Medicine.

2) In the introduction and in the discussion, please compare the prevalence of burnout in this study during the COVID-19 pandemic with burnout prior to the pandemic. The following is a landmark burnout study:

Prevalence of Burnout in Medical and Surgical Residents: A Meta-Analysis. *Int J Environ Res Public Health*. 2019 Apr 26;16(9):1479. doi: 10.3390/ijerph16091479. PMID: 31027333; PMCID: PMC6539366.

Thank you I included this reference in the introduction and discussion.

3) Under Figure 1, the authors showed that respiratory medicine has the highest burnout rate. This is similar to a recent study that found surgeons who specialize in head and neck region reported high level of stress during the pandemic. Please discuss the findings of the following study and draw conclusion between physicians and surgeons.

Psychological Health of Surgeons in a Time of COVID-19: A Global Survey. *Ann Surg*. 2021 Jan 22. doi: 10.1097/SLA.0000000000004775. Epub ahead of print. PMID: 33491983.

Thank you for highlighting this recent publication that I am including in the discussion. Overall there was no significant difference in burnout between the Divisions in Medicine including Respiriology as Respiriology had a low response rate.

4) The authors mentioned "strategies to reduce burnout are needed urgently." Please specify the strategies. I recommend to talk about online psychotherapy such as Internet Cognitive Behavior Therapy. The authors can discuss the following:

The most evidence-based treatment is cognitive behaviour therapy (CBT), especially Internet CBT that can prevent the spread of infection during the pandemic.

Thank you – I added this reference in the discussion section and including online CBT as an effective tool for reducing burnout.

Use of Cognitive Behavior Therapy (CBT) to treat psychiatric symptoms during COVID-19: Ho CS et al *Mental Health Strategies to Combat the Psychological Impact of COVID-19 Beyond Paranoia and Panic*. *Ann Acad Med Singapore*. 2020;49(3):155-160.

Cost-effectiveness of iCBT:

Zhang MW et al *Moodle: The cost effective solution for internet cognitive behavioral therapy (I-CBT) interventions*. *Technol Health Care*. 2017;25(1):163-165. doi: 10.3233/THC-161261. PMID: 27689560.

Internet CBT can treat psychiatric symptoms such as insomnia:

Soh HL et al Efficacy of digital cognitive behavioural therapy for insomnia: a meta-analysis of randomised controlled trials. Sleep Med. 2020 Aug 26;75:315-325. doi: 10.1016/j.sleep.2020.08.020. Epub ahead of print. PMID: 32950013.

5) The authors should discuss the role of female gender in poor mental health such as depression prior to the pandemic. The findings of female physicians reported higher levels of burnout was expected based on previous epidemiological study:

Thank you I added this point and reference in the discussion.

Prevalence of Depression in the Community from 30 Countries between 1994 and 2014. Sci Rep. 2018;8(1):2861. Published 2018 Feb 12. doi:10.1038/s41598-018-21243-x

#### VERSION 2 – REVIEW

<b>REVIEWER</b>	Roger Ho National University of Singapore, Department of Psychological Medicine
<b>REVIEW RETURNED</b>	10-Apr-2021
<b>GENERAL COMMENTS</b>	I recommend publication.