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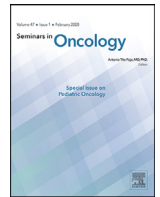
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Impact of the COVID-19 Pandemic on the Wellbeing of International Oncology and Hematology Fellows at the Princess Margaret Cancer Center (PMCC)

Carlos E. Stecca^a, Marie Alt^a, Di Maria Jiang^a, Glauca Michelis^b, Nazanin Fallah-Rad^a, Sharlene Gill^c, Mary Elliot^d, Srikala S Sridhar^{a,*}

^a Division of Medical Oncology and Hematology, Princess Margaret Cancer Centre, Toronto, ON, Canada

^b Department of Psychiatry Instituto de Psiquiatria, Florianopolis, SC, Brazil

^c BC Cancer Agency, Vancouver, BC, Canada

^d Division of Psychiatry, Princess Margaret Cancer Centre, Toronto, ON, Canada

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ABSTRACT

Background: The COVID-19 pandemic has led to significant disruptions across all levels of medical training. International fellows in subspecialty training programs are essential members of the frontline physician workforce, but may face additional and unique challenges as a result of being away from their home country. In this study, we aimed to understand the impact of the COVID-19 pandemic on the wellbeing of international fellows in the Hematology and/or Oncology fellowship program at the PMCC.

Methods: In collaboration with our staff psychiatrist, we conducted an online survey of hematology and/or oncology fellows at the PMCC from July 6 to August 10, 2020. The survey consisted of 60 questions divided into 4 sections: demographics, wellbeing assessment using the validated Short Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS), fellowship specific questions (personal and professional) and coping strategies using the validated brief COPE scale.

Results: Overall 24/52 (46%) fellows completed the survey: 21/24 were international fellows with 48% from Asia, 3/24 were Canadian fellows but away from home; 54% were male; 48% were aged 31–35 years; 65% were married, 48% had children. Mean SWEMWBS score was 21, indicating lower overall wellbeing than the general population who had a score of 23.6. Compared to their pre-COVID status, many reported a decline in their wellbeing (63%), sense of guilt for not being with their family (45%) or helping their country (41%), stress in personal relationships (26%), fatigue (50%), sleep disorders (38%) and loss of interest in daily activities (38%). Personal events were altered by almost 80%; and 20% planned to extend their fellowship. According to the Brief-COPE scale, during the pandemic, most fellows used more adaptive coping mechanisms (mean score 39.2) as opposed to maladaptive ones (mean score 21.8).

Conclusions: The ongoing COVID-19 pandemic has negatively affected the overall wellbeing of international fellows. Understanding the specific challenges and coping mechanisms used by international fellows may help institutions develop better targeted strategies to promote wellbeing, professional development and ensure high-quality patient care during unprecedented times like the COVID pandemic.

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Introduction

Clinical fellowship programs have been widely implemented to provide opportunities for physicians to obtain advanced and/or

specialized training. The Princess Margaret Cancer Centre (PMCC) in Toronto, Ontario, Canada offers a number of clinical and research fellowships in hematology and oncology that attracts physicians from all around the world. Although important from a career standpoint, moving from one country to another can be very difficult for a number of reasons. These include, but are not limited to, learning a new healthcare system, new language, different cultural customs and traditions and importantly separation from family, friends and social supports. In March 2020, the COVID-19 pandemic was declared. This had the potential to significantly ex-

* Corresponding author. Division of Medical Oncology and Hematology, University of Toronto, Medical Oncologist, Princess Margaret Cancer Center Chair, GU Medical Oncologists of Canada, 7-625 OPG, 610 University Avenue, Toronto, ON, Tel.: 416946-4501 × 2662; fax: 416-946-6546.

E-mail address: srikala.sridhar@uhn.ca (S.S. Sridhar).

acerbate existing challenges and introduce new challenges for international fellows.

One of the most important measures implemented to control the COVID-19 pandemic, was social distancing. Although very effective, it has had a significant impact on the mental health and well-being of society as a whole. This impact may be even more profound for international fellows adjusting to a new country and at the same time being concerned about the health and wellbeing of their loved ones back in their home countries.

The primary aim of this fellow-led project was to identify and describe first hand experiences and key challenges faced by international fellows at the PMCC during the COVID-19 pandemic. We were also interested to understand how fellows were coping and to explore potential strategies that did or could have improved the overall fellowship experience during the pandemic. By sharing this data, we hope to provide guidance and tools that may help to improve mental health and well-being during the current pandemic, and importantly help us to be better equipped and prepared in the future.

Methods

This survey study was deemed exempt by the Institutional Review Board of the University Health Network (UHN) as it fell within the scope of minimal risk research and participation was completely voluntary.

Sample and data collection

The survey consisted of 60 questions, divided into 4 key parts including demographics, wellbeing assessment, fellowship specific questions (personal and professional), and coping strategies (see supplementary appendix). For the wellbeing assessment, the validated Short Warwick Edinburgh Wellbeing Scale (SWEMWBS) was used, after approval by the scale's creator. This scale uses 7 of the 14 statements present on the original scale which relate more to functioning than feeling. For the assessment of coping mechanisms, we used the Brief COPE scale, a validated self-report questionnaire consisting of 28 items to identify different coping mechanisms (supplementary appendix). In addition, there were open-ended questions about strategies that could be implemented by the fellowship programs to help better support fellows during the pandemic.

Each of the 52 fellows, defined as physicians who have completed medical training and residency and are now in a subspecialty training program, was sent a link to an online survey by SurveyMonkey on July 6, 2020, with 5 reminders for the non-responders sent until August 10, 2020. Completion of the survey was voluntary and all responses were anonymous.

Data interpretation

The scoring by the SWEMWBS was done by summing the scores obtained for each of the items, to give a final raw score that was transformed into metric scores using a conversion table provided by the SWEMWBS developers. The final scores ranged from 7 to 35, reflecting the following: ≤ 17 probable depression, 18–20 possible depression, 21–27 average mental wellbeing and ≥ 28 high mental wellbeing.

The Brief COPE scale, proposed by Carver in 1997 [1], is a 28 item self-report questionnaire designed to measure effective and ineffective ways to cope with a stressful life event. Coping was defined broadly as an effort to minimize distress associated with negative life experiences [1]. The questions are divided into 14 subscales: self-distraction, denial, substance use, self-blame, behavioral disengagement, venting, emotional support, use of informa-

Table 1
Demographics.

Gender	Male	54.2%
Age	Female	45.8%
	26-30y	13%
	31-35y	47.8%
	36-40y	17.4%
Marital Status	>40y	21.8%
	Married	65.3%
	Common-Law	8.7%
	Single	26%
Children	No Children	52.2%
	Children	47.8%
Start year of fellowship	2017	8.7%
	2018	21.7%
	2019	47.9%
	2020	21.7%
Country/Continent	Canada	13%
	Oceania	4.35%
	South America	13%
	Central America	4.35%
	Asia	47.8%
	Europe	17.4%

tional support, active coping, positive reframing, planning, humor, acceptance and religion. The first 6 subscales are considered as maladaptive coping approaches, with scores in the range of 12 to 48, and the other 8 subscales are described as adaptive approaches with scores in the range of 16 to 64.

Results

The survey was sent to all 52 fellows working at the PMCC on July 6, 2020, and reminder e-mails were sent on July 13, July 20, July 27, August 3 and August 10, 2020, resulting in a total of 24 (46.1%) respondents.

Demographics

Most of the respondents were men (54%), between the ages of 31–35 (48%); 65% were married and 49% had children. Overall, 48% started their program in 2019, 21/24 fellows were international with 48% from Asia (Table 1). There were 3 fellows from other Canadian provinces who also completed the survey. They were included in the analysis because we believe the challenges, they faced during the pandemic may be similar to international fellows, since the COVID-19 restrictions in Canada and imposed by the institution limited travel even between Canadian provinces.

Wellbeing scale

The final mean value, after using the conversion table, among all responders was 21.0. For married participants the mean score was 21.4; for those with children it was 21.0; and for single fellows the mean score was the lowest, at 19.6 (Fig. 1).

Fellowship specific questions- personal

When asked how often their wellbeing had been affected during the pandemic, 62.5% responded either "often" or "all of the time" and when asked about wellbeing before the pandemic, the majority responded that their wellbeing was not or rarely affected (58%). The majority of responders admitted feeling guilty some of the time for not being with their family (46%), and for not helping their country (42%) during the pandemic. Regarding financial status, 29% said they were often or always concerned about money. When inquired about stress in their relationship 26% of the fellows described it as being an issue "often" or "all of the time." Among

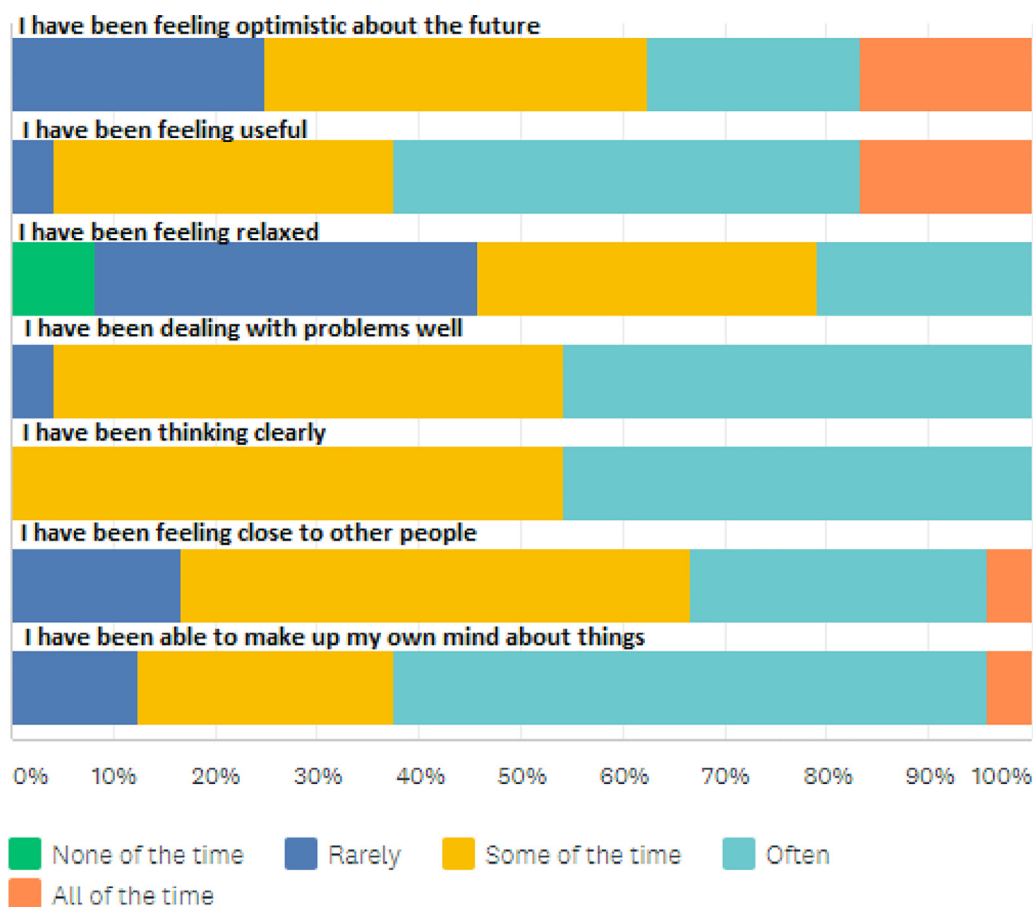


Fig. 1. Short Warwick-Edinburgh Mental Wellbeing Scale.

the fellows who were parents, 36% admitted to frequently being concerned about the lack of childcare.

Fellowship specific questions-professional

Half of the participants agreed that the weekly schedule of their fellowship program had changed considerably. However, most believed that there were little or no changes to the on-call periods during the pandemic (79%). Overall, 42% also believed their clinical work had suffered major changes, while 50% thought the same about their research projects. Most were satisfied with the way their fellowship had been conducted during the pandemic.

Half of the survey participants admitted experiencing lack of energy and fatigue. Sleep disorders and loss of interest and pleasure in daily activities were described by 38%, 29% described weight alterations, and 20% reported agitation. When asked if any of these symptoms were present before the pandemic, 46% responded affirmatively.

Due to the pandemic, personal events had to be postponed or cancelled by almost 80% of the fellows. Based on the PMCC directive to work from home where possible, the majority (66%) of fellows started working from home at least one day a week, however, 34% continued to come to the office and/or hospital every day. For 5 (21%) fellows, the total duration of the fellowship program was extended due to the pandemic.

Coping mechanisms

The most common coping mechanisms described was video conferencing with family and friends, focusing on research

projects, cooking more frequently, doing physical exercise and planning weekly routines in advance. Yoga, meditation, reading, streaming television shows and movies were also described. Overall, 13% of the fellows admitted to smoking/drinking more often as another way of coping during the pandemic (Fig. 2).

Regarding the Brief-COPE scale, we observed a mean score of 21.9 (ranging from 13 to 38) for the maladaptive coping strategies, the most relevant one being self-distraction, and a mean score of 39.2 (28–52) for the adaptive ones, mainly represented by planning, positive reframing and acceptance strategies (Fig. 3).

Discussion

In this study led by our fellows, we were able to assess the wellbeing and coping strategies of predominantly international hematology and oncology fellows at one of the largest cancer centers in Canada during the first wave of the COVID-19 pandemic. This has particular relevance as it sheds further light on the important topic of physician wellbeing.

Most of the fellows in the study stated that their wellbeing was frequently affected during the pandemic. This is probably due to a combination of factors including feeling guilty for not being physically close to their families and not being able to provide a service in their own country. Similar findings were also reported in a survey of international radiation oncology fellows [2]. Other factors affecting well-being included concerns about financial status, relationship stress, and lack of childcare. Although not specifically addressed in our survey, significant changes in the work environment, social isolation, covering COVID triage clinics, and constant fear of catching COVID (before the availability of vaccines)

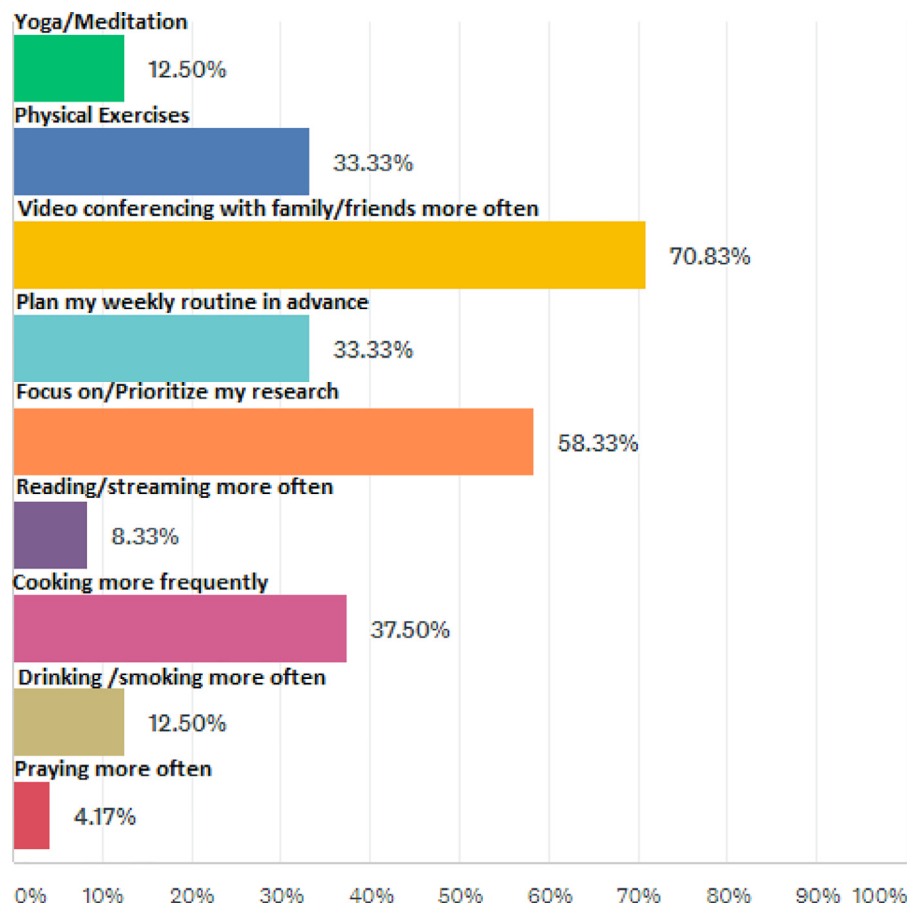


Fig. 2. Coping strategies.

also likely led in part to decreased wellbeing. These concerns echo those expressed by other health care providers surveyed during the pandemic [3].

In our survey the observed mean score of SWEWS was 21.0, which represents the lower end of the average mental wellbeing scores which range from 21 to 27, and suggests a possible negative emotional impact caused by the pandemic, even though we do not have a pre-pandemic baseline assessment. A similar study conducted among 17 radiation-oncology trainees during the pandemic, demonstrated that burnout features in the domains of disengagement and exhaustion were present in 71% and 64%, respectively. But, importantly they also described evidence of resilience in 47%, as they felt that positive alterations brought about by the pandemic outnumbered the negative ones. In addition, good institutional leadership along with the rapid implementation of virtual care helped them to feel more energized [2]. Still regarding the SWEWS, we detected a slight difference in the score between married (21.6) and single fellows (19.6). Although the difference is small, it generates a hypothesis that possibly having a partner during the pandemic may have had a protective effect, but this would need to be validated in a larger sample. Interestingly, this result is in keeping with a study on wellbeing among married and unmarried individuals that reported the association of marriage with overall perception of higher degree of wellbeing [4].

Although participants felt that their fellowship had changed during the pandemic, most agreed that the hospital and university were able to guarantee a safe working environment both mentally and physically. Clear, quick and regular communications from hospital management about strategies to limit spread of COVID-

19, COVID-19 protocols, and the number of positive cases admitted at the hospitals in the network, sent fellows a positive message that the situation was being managed as best as possible, and improved the sense of safety. Other important strategies, contributing positively to wellbeing, included the fact that personal protective equipment was widely available and training was provided to all fellows on how to manage patients with positive or suspected COVID infections. Importantly, this training was tailored to every possible scenario from the clinic to emergency situations such as a protected code blue. This guidance was particularly appreciated by the fellows, as this was all happening at a time of great uncertainty surrounding COVID-19.

With regards to professional questions, almost half of the fellows agreed that their clinical work had suffered major changes, which was expected given the changes in the delivery of clinical care. Most in-person visits were converted to phone calls, but interestingly, more than half stated that the changes were not significant. This is an optimistic view of the situation which is possibly linked to their sense of purpose and feeling valued. In a study conducted by *Pilar et al*, radiation oncology trainees reported that good leadership that encouraged culture change, more time to develop research projects and rapid implementation of virtual care were seen as silver-linings of the pandemic [2].

Results obtained through the Brief-COPE scale showed that in general the fellows have been using more adaptive mechanisms (approach coping) as opposed to mal-adaptive ones (avoidant coping), as previously described. As expected, approach coping is associated with better responses to adversity and is more effective at dealing with anxiety. A Saudi Arabian study from 2018 by *Alosaimi*

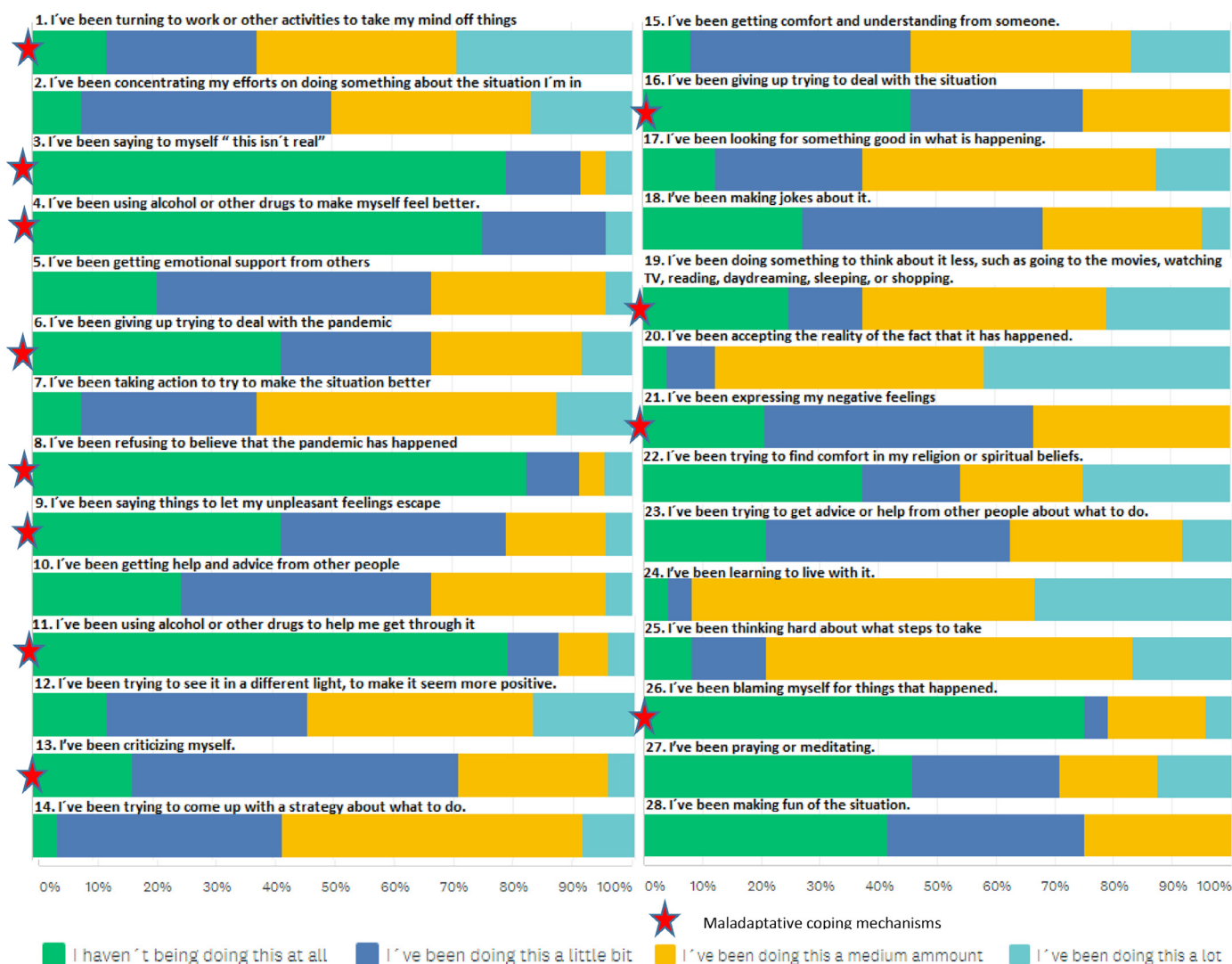


Fig. 3. Brief-COPE scale.

et al [5] assessing stress among 582 physicians, which used the same scale to evaluate coping mechanisms has also demonstrated a predominance of approach coping strategies.

Even prior to the pandemic, the crisis of physician burnout has been well recognized and is a cause for concern not only among more experienced physicians but also among residents and even medical students [6,7]. In a study from 1991 assessing burnout syndrome amongst 598 oncologists, almost 60% had experienced burnout [8]. In a survey of 1700 medical oncologists working in a community practice in the US, Allegra et al showed that nearly 62% had symptoms of burnout [9]. More recently, data from the American Society of Clinical Oncology reported that 45% of their members have reported experiencing burnout-related symptoms [10,11].

For some physicians, wellbeing was already affected prior to the pandemic and may have been further compromised by the pandemic [12]. Oncologists may be particularly vulnerable to COVID-19-related distress. This is not only because of their concern for their own health but also due to their patient's vulnerability to infection, the need to possibly suspend or delay anti-cancer treatment, and the inherent risks of decreasing chances of cure, and the expected increase in mortality associated with cancer, attributed to treatment delays [13,14]. A recent study by *Lu et al* revealed that

during the pandemic, medical staff have experienced a higher incidence of fear, anxiety and depression when compared to administrative staff. Professionals at higher risk were working in the departments of respiratory, emergency medicine, intensive care and infectious diseases [15]. On the other hand, it has also been argued that the pandemic has brought an increased sense of altruism and restored some of the elements of autonomy, competency and relatedness, intimately associated with intrinsic motivation, which could reduce the risk of burnout [7]. In a study from Wuhan comparing burnout frequency among oncology healthcare workers on the frontline and those in the usual wards during COVID-19, a lower frequency of burnout was seen in frontline staff. This could be explained by the fact that frontline workers may have a better sense of control over the situation and that more attention and recognition was paid to those working directly with symptomatic patients. Workers in the usual wards may not have had the same sense of control and may not have experienced the same degree of gratitude [16]. Oncology and hematology fellows would be included in the second group, as most of them are not directly involved in the frontline care of COVID patients. Therefore, based on the premise previously stated, they could be facing a higher risk of burnout.

The study has several limitations. These include the limited sample size, and the fact that only half of the fellows responded to the questionnaire, causing a possible selection bias. Moreover, this survey was conducted in a single cancer center, which does not have its own emergency room, and where the number of COVID 19 cases were low since the beginning of the pandemic. More robust and multicentric studies would help us to better understand the real impact of the pandemic on the wellbeing of international fellows. To this end, a follow-up study, among international fellows across the wider Department of Medicine, at the University of Toronto is being planned.

Conclusions

This survey, conducted early in the ongoing COVID-19 pandemic among international fellows, demonstrated lower wellbeing scores than the estimates for the general population. Understanding the specific challenges and coping mechanisms of international fellows may help institutions develop better targeted strategies to promote their overall wellbeing, professional development and high-quality patient care during unprecedented times such as the COVID-19 pandemic.

Conflict of interest

Carlos Stecca, No Relationships to Disclose. Di Maria Jiang, Consulting or Advisory Role – Bayer. Marie Alt, No Relationships to Disclose. Mary Elliott, No Relationships to Disclose. Nazanin Fallah-Rad, No Relationships to Disclose. Glaucia Michelis, No Relationships to Disclose. Srikala S. Sridhar, Consulting or Advisory Role – Astellas Pharma (Inst); AstraZeneca (Inst); Bayer (Inst); Bristol-Myers Squibb (Inst); Immunomedics (Inst); Janssen (Inst); Merck (Inst); Pfizer (Inst); Roche/Genentech (Inst); Sanofi (Inst)

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:[10.1053/j.seminoncol.2022.09.002](https://doi.org/10.1053/j.seminoncol.2022.09.002).

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