

2020 Breakthrough-Orama Seed Funding Scheme - Final Report

Project Title: Understanding and improving the mental health and wellbeing of doctors and medical students during the COVID-19 pandemic

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Background

The project included the following three broad aims:

1. To investigate and understand doctors' mental health and wellbeing during the COVID-19 pandemic.
2. To examine doctors' attitudes, intentions and actual behaviour towards seeking help for low wellbeing and mental health problems.
3. To explore doctors' attitudes to using wellbeing interventions focusing on building strengths and resilience compared to traditional interventions focusing on illness.

Given the widespread impact of the COVID-19 pandemic on health care workers generally, the scope of the project was extended a) beyond doctors to include all health care workers, and b) to offer the opportunity for health care workers to participate not only in a cross-sectional survey to assist in building new knowledge, but also an evidence-based intervention to directly improve their own mental health and wellbeing.

Ethics Approval

Ethics approval was obtained through the Southern Adelaide Local Health Network (SALHN) to offer the Be Well Plan (details provided below) to all staff members. This provided the opportunity to obtain cross-sectional data related to the first two aims of the study, as well as a practical and multi-functional means of addressing our third aim of exploring attitudes to wellbeing interventions.

As we will describe in the report below, recruitment from this phase of the project was not sufficient to fulfill the first two aims of understanding the mental health and wellbeing, and help-seeking attitudes and behaviours of health care workers. As such, we then attempted to obtain an ethics extension to the Central Adelaide Local Health Network (CALHN). However, as the process required Head of Unit approval from every department within CALHN, this was untenable.

To gather the necessary data from health care workers, we instead turned to the substantial participant pool in the Wellbeing Over Time Longitudinal study (described in further detail below). In addition to existing questions to assess mental health and wellbeing, an ethics amendment was approved through the Flinders University Human Research Ethics Committee to ask participants to indicate if they are a health care professional, and to include questions related to help seeking attitudes and behaviours, and health care specific COVID-19 related qualitative data. This garnered a larger sample of 266 health care workers from which we have distilled insights regarding the mental health and wellbeing of health care workers across Australia at this unique and challenging time.

The two-phase strategy of the study has had the benefit of gathering data during the height of the COVID-19 pandemic and during the ‘COVID normal’ stage, albeit from different data sources. The methodology and findings from the two study phases are outlined in the following report. Given that the Wellbeing Over Time sample is the larger sample and reflective of the current state of the health workforce, this data will be outlined first to provide an overview of aims 1 and 2 of the current project. The sample that signed up to participate in the Be Well Plan will then be presented with a primary focus on aim 3, and additional insights in to aims 1 and 2.

Wellbeing Over Time Sample

The Wellbeing Over Time sample consists of individuals who have previously completed the Be Well Tracker and consented to being contacted for future research. The Be Well Tracker is a 10-minute secure online measurement tool available through the Be Well Co website (<https://www.bewellco.io/>), which provides individuals with a confidential report providing insights into their personal mental health and wellbeing. Individuals may have completed the Be Well Tracker through their workplace, an affiliated organisation (e.g., volunteer group, support group, university) or directly through the Be Well Co website. Individuals who consented to be followed up were contacted to participate in the Wellbeing Over Time study in October 2022.

Within the Wellbeing Over Time sample, a total of 266 respondents indicated that they were health care professionals. Demographic information for this sample is provided in Table 1.

Table 1. Demographics of health professionals in the Wellbeing Over Time longitudinal study

		<i>n</i>	%
Age	18-24	6	3%
	25-34	52	20%
	35-44	58	22%
	45-54	67	25%
	55-64	72	27%
	65-74	8	3%
Gender	Female	221	83%
	Male	42	16%
	Transgender	1	<1%
	Prefer not to say	2	<1%
Profession	Medical Professional	20	8%
	Nurse	113	42%
	Allied Health	86	32%
	Non-registered health practitioner	4	2%
	Other (manager, administrator, support staff)	43	16%

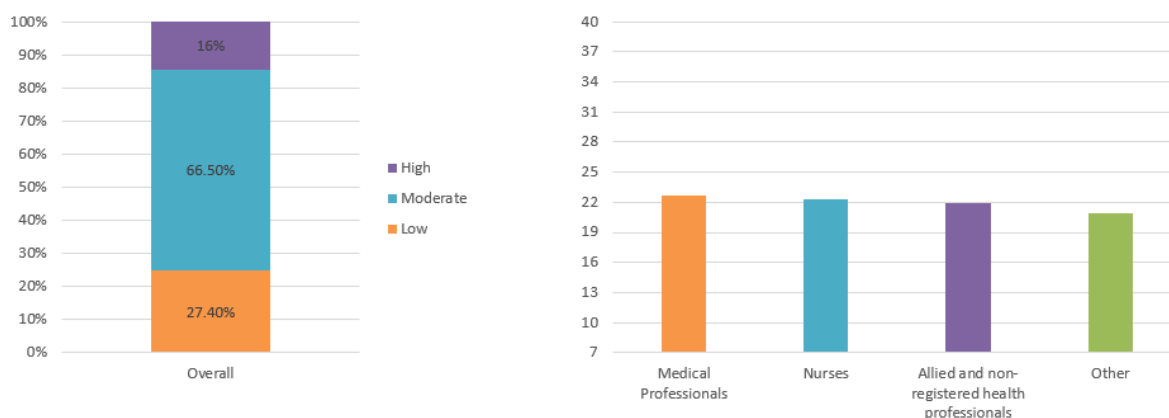
Results

Descriptive statistics have been used to provide an overview of the mental health and wellbeing of the sample, including insights into the different professional groups. Due to the very small number of non-registered health practitioners, this group has been combined with allied health professionals. Statistics described here are descriptive only and further parametric and non-parametric statistical analyses of between group differences is required to determine statistical significance.

Wellbeing

Wellbeing was measured using the Short Warwick-Edinburgh Mental Well-Being Scale (Stewart-Brown et al., 2009). The mean score for the sample fell within the moderate wellbeing range ($M = 21.97$, $SD = 3.61$). When examined by professional grouping, medical professionals reported the highest levels of wellbeing (Figure 1). No medical professionals reported low wellbeing and 85% reported high wellbeing. This contrasted with both the allied and non-registered health professionals and 'other' (non-clinical) professional groups in which approximately a third reported low wellbeing (32% and 38.5% respectively) and less than 5% reported high wellbeing for both groups.

Figure 1. Wellbeing ratings for the total sample (left) and means for profession groups (right)

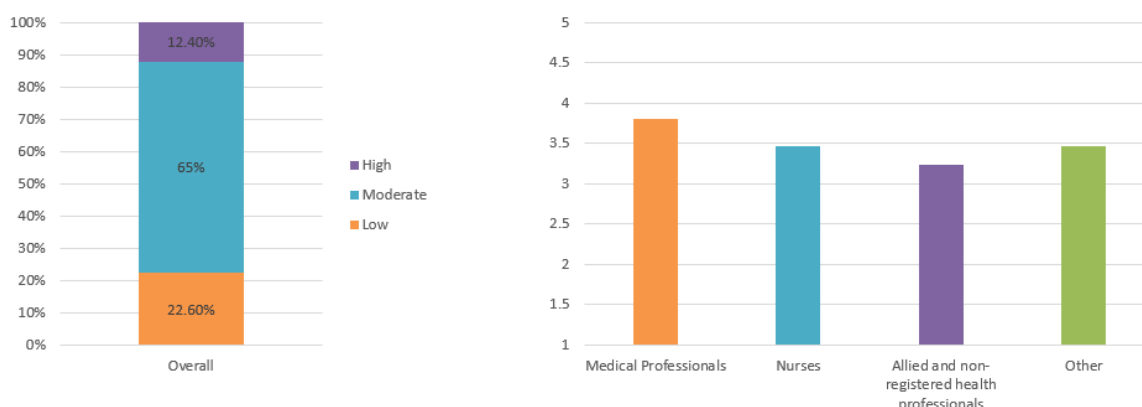


Resilience

Resilience was measured using the Brief Resilience Scale (Smith et al., 2008) which focusses on the ability to bounce back from stressful events. Mean resilience for the overall sample fell in the normal range ($M = 3.42$; $SD = 0.75$).

As depicted in Figure 2, medical professionals reported the highest resilience of all the professional groups. No medical professionals reported low resilience and 20% reported high resilience. In contrast, the allied and non-registered health professional group demonstrated the lowest resilience with 32.2% falling in the low resilience category and only 5.6% in the high resilience category.

Figure 2. Resilience ratings for the total sample (left) and means for profession groups (right)

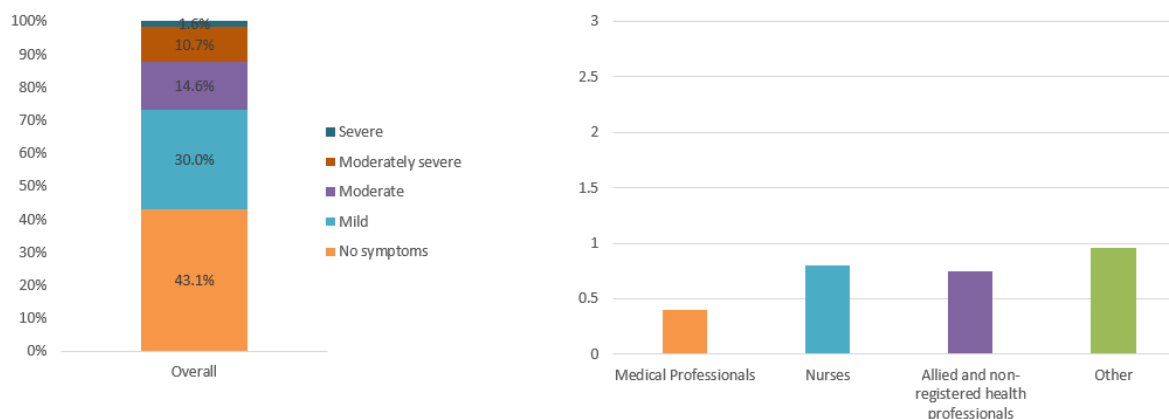


Depression

Depressive symptoms were measured using the 7 item Patient Health Questionnaire (PHQ-7) (Kroenke et al., 2001) which has clear cut offs for levels of symptom severity. The average score for total sample fell within the mild range for depression symptoms ($M = 0.80$; $SD = 0.67$). When categorised by the proportion of individuals within each clinical severity level, over half of participants (57%) reported some depressive symptomology, and over a quarter (27%) fell within or above the moderate range of symptoms.

Examination by professional grouping indicated that medical professionals experienced the lowest levels of depressive symptoms, and the non-clinical professionals ('other' grouping) reported the highest levels of symptomology (see Figure 3). Of note, almost 70% of medical professionals reported no depressive symptoms, compared to 34% and 32% of allied and non-registered professionals and 'other' professionals respectively; and no medical professionals reported symptomology in the moderately severe to severe range, compared to 24.4% of the 'other' professionals falling within this concerning range.

Figure 3. Depression severity ratings for the total sample (left) and means for profession groups (right)



Anxiety

Anxiety was assessed using the Generalised Anxiety Disorder-7 (GAD-7) (Spitzer et al., 2006). The scale has established clinical cut offs for severity ratings: minimal anxiety; mild anxiety; moderate anxiety and severe anxiety. The mean for the overall sample fell in the mild anxiety category ($M = 0.80$; $SD = 0.67$).

Similar to the pattern observed with symptoms of depression, medical professionals reported the lowest levels of anxiety, and the 'other' non-clinical staff reported the highest levels as presented in Figure 4. No medical professionals reported severe anxiety and 75% reported minimal anxiety, in contrast to the 'other' group in which 23% reported severe anxiety and 35% reported minimal symptoms.

Stress

Stress was measured using the 4-item Perceived Stress Scale (Cohen et al., 1983). There are no clinical cut offs available for this scale. The mean for total sample was 1.44 ($SD = 0.76$). The lowest mean score was observed in the medical professional group ($M = 1.13$; $SD = 0.82$) and the highest in the 'other' group ($M = 1.83$; $SD = 0.84$) as presented in Figure 5.

Figure 4. Anxiety severity ratings for the total sample (left) and means for profession groups (right)

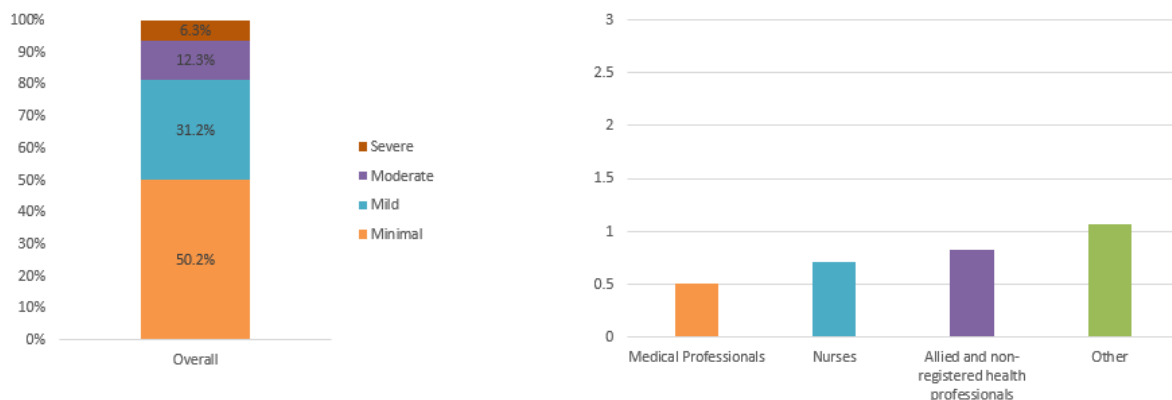
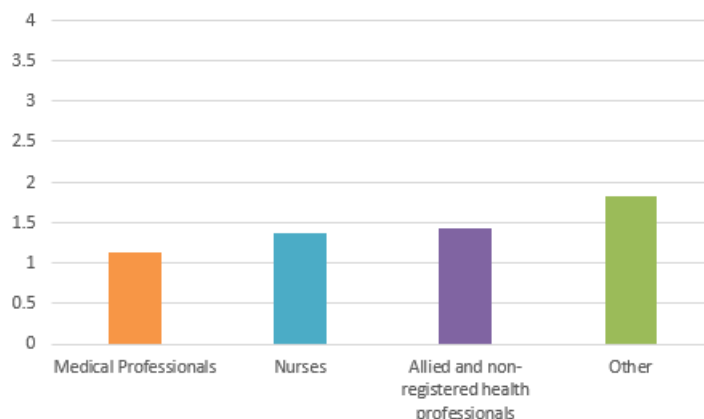


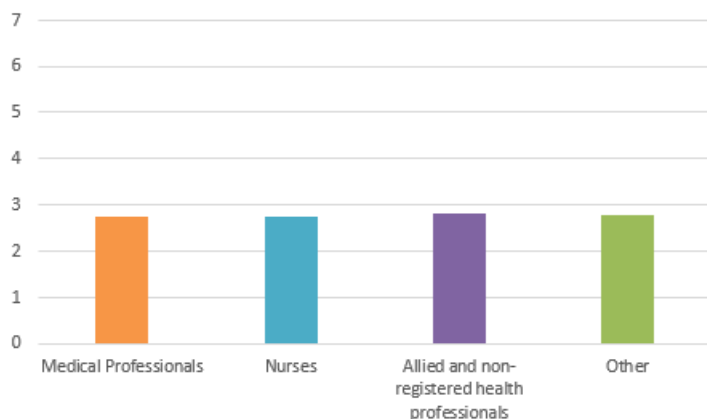
Figure 5. Mean stress scores for each profession group



Burnout

Participants were asked to rate their level of burnout on a scale from 0 (no symptoms of burnout) to 7 (completely burnt out). The mean for the total sample was 2.78 ($SD = 1.09$). Responses ranged from 1 to 5, no participants rated their burnout at the highest levels (6-7). Ratings were similar across professional groups (see Figure 6).

Figure 6. Mean burnout scores for each profession group



Help-Seeking for Mental Health Issues

A mental health diagnosis was received by 13% of participants in the previous 12 months. The vast majority (91%) of these participants sought help for their mental health as outlined in Table 2.

All participants that endorsed help-seeking reported seeking help from a professional health provider. On average, individuals sought help from 3 different sources (ranging from 1 to 8).

Only 3 participants reported that they did not seek help for their mental health issue. Of these, all 3 cited *practical barriers* to seeking help (e.g., time, distance, finances) and two of these reported *previous negative experiences* seeking help and *not thinking it would help* as barriers to help-seeking for their recent mental health issues.

Table 2. Types of mental health issues experienced in previous 12 months and help sought

Mental health issue experienced (<i>n</i> = 35)	<i>n</i>	%
Depression	22	63
Anxiety	25	71
Substance use disorder	1	3
Eating disorder	2	6
Post Traumatic Stress Disorder	7	20
Other	3	9

Sought help (<i>n</i> = 32)	<i>n</i>	%
GP	23	66
Mental health professional	28	88
Employee Assistance Program	6	19
Website	4	13
Helpline	3	9
App	8	25
Intimate partner	10	31
Friend	12	38
Parent	3	9
Other relative / family member	4	13
Other	3	9

The Be Well Plan Sample

The opportunity to participate in the Be Well Plan was offered to all SALHN employees in the latter half of 2021. Data was collected from SALHN employees at two time-points: pre and post completing the Be Well Plan. Data was gathered at a pivotal time during the pandemic – as the state was shifting away from its COVID-zero approach. Pre-intervention data was collected in mid-November 2021, immediately prior to the interstate borders to the eastern states reopening on November 23rd; and 5 weeks later, late December when the state was experiencing an outbreak of more than 100 cases per day.

The Be Well Plan

The Be Well Plan is an evidence-based mental health and wellbeing program (Fassnacht et al., 2022; Van Agteren et al., 2021) which helps participants identify psychological and behavioural strategies that aim to improve mental states of wellbeing. In the program, participants create their own, personalised wellbeing plan including activities that they identify as beneficial during participation in the program. All activities in the Be Well Plan are evidence-based and were selected from an extensive meta-analysis of psychological interventions to improve mental wellbeing conducted by members of the project team. It was designed using a rigorous intervention development framework (Intervention Mapping) and relied on co-design principles.

Over the course of 5 sessions, participants develop core knowledge on the science of wellbeing, work on developing helpful psychological techniques and experiment with different activities. Rather than giving all participants the same activities, participants work on determining the ones that are relevant to their own unique circumstances. At the end of the program participants walk away with their own unique Be Well Plan.

The Be Well Plan was designed to be delivered in various formats. In this study, both an interactive live-facilitated version and a static pre-recorded version were offered. Based on their

preference and availability, participants choose to do either the interactive facilitated version of the Be Well Plan intervention or the static version of the program which includes pre-recorded videos and resources on a webpage. A full description of the Be Well Plan and content for each session is described in van Agteren et al. (2021).

Recruitment and Uptake

Uptake of the Be Well Plan speaks to aim 3 of the project, namely health care workers attitudes to using wellbeing interventions focusing on building strengths and resilience compared to traditional interventions focusing on illness.

Recruitment was facilitated by the SALHN Chief Workforce Officer. The Be Well Plan was offered to all SALHN employees via email and flyers on pinboards for those who do not have email access within the organisation. In total, 57 employees completed an initial Expression of Interest in which they specified their preference for either weekly in-person sessions or pre-recorded online sessions moving through the material at their own pace. Overall, 21 indicated a preference for in person participation, and 36 for pre-recorded online sessions. After following up those that opted for the in-person format, 7 confirmed their availability and manager approval. Based on this uptake, the in-person option was not feasible and therefore pre-recorded sessions and materials were provided to all participants.

Of the 57 people that expressed interest in the BWP, 47 completed baseline and were thus provided with the pre-recorded videos and workbook. In total, 41 (87%) accessed and watched at least some part of the Be Well Plan. Of these, 15 (37%) participants completed the equivalent of at least one session, and 12 (29%) participants also completed the post-intervention measures allowing analysis of pre-post outcomes of the pre-recorded Be Well Plan.

Findings

An overview of the sample related to the first two study aims is provided, followed by results from analyses of pre-post outcome measures from the Be Well Plan intervention. The sample of participants was predominately female, Caucasian, with the majority from the nursing field. An outline of the demographics is provided in Table 3.

Table 3. Demographic information for health professionals recruited to the Be Well Plan (n = 47)

		n	%
Age	18-24	0	0
	25-34	5	11%
	35-44	10	21%
	45-54	21	45%
	55-64	10	21%
	65-74	1	2%
Gender	Female	44	94%
	Male	3	6%
Profession	Medical Professional	3	6%
	Nurse	25	53%
	Allied Health	8	17%
	Non-registered health practitioner	1	2%
	Other (manager, administrator, support staff)	10	21%

The sample of participants were clearly experiencing high levels of burnout and uncertainty; for example,

- **42%** anticipated that their role would change once the border reopened;
- **51%** reported experiencing symptoms of burnout;
- **53%** reported that their mental health had worsened since the announcement that the borders were reopening;
- **49%** had experienced a mental health issue in the previous 12 months.

However, this was also a generally healthy group of participants who had self-selected to commit the necessary time to engage in a program to improve their mental health and wellbeing. The group was characterised by:

- Good physical health:
 - o **83%** rated their health as good, very good or excellent;
 - o **72%** rated their diet as good, very good or excellent;
 - o **77%** reported engaging in moderate exercise 3 times per week or higher.
- High levels of work engagement:
 - o **70%** reported feeling enthusiastic about their work often, very often or always;
 - o **77%** reported feeling immersed in their work, often, very often or always;
 - o Overall mean score of **6.5** (rated 1 -10) for satisfaction with job;
 - o Overall mean score of **6.9** (rated 1 -10) for satisfaction with workplace relationships.

The majority (78%) of those that had experienced mental health issues had sought help for these difficulties, as outlined in Table 4 below. For those that did not seek help for their mental health issues ($n = 5$), the following barriers to help-seeking were endorsed:

- Concerns about what other people would think (40%);
- Fear of being labelled (40%);
- Didn't think the problem was severe enough (40%);
- Want to be self-reliant (40%).

Table 4. Types of mental health issues experienced in previous 12 months and help sought

Mental health issue experienced ($n = 23$)	<i>n</i>	%
Depression	12	52
Anxiety	12	12
Substance use disorder	0	0
Eating disorder	1	1
Other	7	7
Sought help ($n = 18$)	<i>n</i>	%
GP	16	89%
Psychologist	10	56%
Psychiatrist	1	6%
Counselling service	8	44%
Website	2	11%
Social worker	0	0
Helpline	0	0
App	0	0

Intervention

Mental health and wellbeing outcomes were analysed using paired samples t-tests comparing available pre- to post-intervention data. Pre and post mean scores and within-groups effect sizes are provided in Table 5, where 0.2 represents a small effect, 0.5 a medium effect, and 0.8 a large effect. Those marked in bold represent significant findings. However, results must be interpreted within the context of the small sample size. Reliable change indices (RCI) are also reported to examine the clinical significance of statistical changes. RCIs indicate the number and percentage of participants that demonstrated reliable (or statistically significant) improvement or deterioration over the intervention period.

Overall, significant improvements were observed for Satisfaction with Life, Resilience, Stress and Burnout, with small effects noted for all except Burnout where the effect was negligible. It is noteworthy that the medium to large effect sizes for wellbeing, anxiety and depression suggest substantial improvements, although these were not statistically significant, due to the small sample size. In total, 92% of participants demonstrated a reliable improvement in at least one outcome area, with a group average of improvements in 1.6 outcome areas (ranging from 0 to 5). It should also be noted that the one participant who observed a deterioration in Resilience, also demonstrated an improvement in Satisfaction with Life.

Participants in the program viewed it positively. Overall, 83% reported that they would be likely to recommend the program to a friend (score of 7 or higher out of 10). Qualitative feedback reflected that participants found it difficult to prioritise the necessary time to complete the program, and that the face to face (in-person or Zoom) may have facilitated this. Comments also suggested improvements for the resources which are currently being updated.

Table 5. Effect sizes and reliable change indices for outcome measures

	Effect sizes				RCI	
	Baseline	Post-Tx	Within group ES 95% CI	<i>p</i>	Improve <i>n</i> (%)	Deteriorate <i>n</i> (%)
Wellbeing	4.43 (0.26)	4.83 (0.19)	0.45 (-0.89, 0.01)	>.05	2 (17%)	0
Satisfaction with Life	4.85 (0.37)	5.73 (0.21)	0.70 (-1.25, -0.15)	.02	3 (25%)	0
Resilience	3.00 (0.33)	3.64 (0.31)	0.58 (-1.07, -0.09)	.02	6 (50%)	1 (8%)
Stress	1.02 (0.14)	0.60 (0.09)	0.98 (0.15, 1.80)	.02	3 (25%)	0
Anxiety	0.35 (0.08)	0.17 (0.06)	-0.70 (-0.15, 1.54)	.10	2 (17%)	0
Depression	0.62 (0.22)	0.26 (0.05)	-0.58 (-0.21, 1.38)	.35	3 (25%)	0
Burnout	2.58 (0.19)	2.17 (0.17)	-0.66 (0.06, 1.26)	.01	NA	NA

Summary

Overall, the findings indicate that health care workers in the current 'COVID-normal' phase of the pandemic are experiencing moderate levels of wellbeing and generally mild symptomatology with regard to mental health. However, this picture does deteriorate when examined by professional groups. Medical professionals in the current sample reported notably better outcomes across all domains with the exception of burnout where all groups were very similar. However, the non-clinical group of health care workers ('other,' including managers,

administrators and support staff) reported generally poorer outcomes. Further analysis is required to determine the statistical significance of differences across groups. Help-seeking in both samples was relatively high, with over three quarters of participants seeking professional help for their mental health issues.

Uptake for the Be Well Plan was low. However, significant improvements were noted for the vast majority of participants who did participate. This pattern is not uncommon and further work to increase engagement in mental health interventions and wellbeing programs more broadly is needed. Although the low uptake of the Be Well Plan in the current study may indicate an unwillingness of health professionals to engage in a program focussed on wellbeing and mental health rather than traditional treatment modalities, the timing of the intervention was not optimal and inferences with regard to this aim should be tempered in light of this. In addition, qualitative feedback highlighted the difficulty to prioritise taking caAccess to the pre-recorded session was offered as the interstate borders were reopening to states with high levels of COVID-19 transmission. This was a period of high workload, and high stress and anxiety not only within health care but within the broader population. It was also the end of the year leading up towards the Christmas break. Although this represents a time period in which intervention is most critical, it is also a period when individuals are likely to find it difficult to prioritise this important aspect of their wellbeing.

Uptake should also be considered within the context of the Be Well Plan being provided through the workplace. Although there are benefits to this in terms of workplace support and culture, there can be challenges involved in obtaining manager approval, allocating time in busy workloads and fears around confidentiality. Finally, it should also be noted that the trial reported here used an older version of the recordings and workbook that has since been updated with the aim of increasing retention.

The current report should be interpreted within the context of the characteristics of the participant groups. Both samples self-selected to opt into the relevant studies to either improve or understand more about their mental health and wellbeing, indicating a motivation towards self-improvement, and may not be representative of the broader population. However, the current findings suggest that intervention to improve the mental health and wellbeing of specific groups within the health care workforce is necessary. Further research to improve the uptake of the Be Well Plan is required. However, preliminary findings indicate that the Be Well Plan is beneficial and well-received by participants.

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