CSIRO PUBLISHING

Australian Health Review, 2021, 45, 656–666
https://doi.org/10.1071/AH21014

Immediate impact of the COVID-19 pandemic on the work and personal lives of Australian hospital clinical staff

Sara Holton [1,2,11] BA, GradDipBus, GradDipArts, MGendStud, PhD, Senior Research Fellow

Karen Wynter[1,2] BSc(Hons), MPhil, PhD, Senior Research Fellow

Melody Trueman[3] RN, DipNur, BHSc, MN, AdvDipMgt, MACN, Assistant Director of Nursing and Midwifery

Suellen Bruce[4] RN, CertNurs(Renal), GradCertNursMgt, MN, Executive Director People, Culture and Communications

Susan Sweeney[3] PGDipMid, PGDipMgt&HCLead, AdvDipCommSectMgt, MN, MBA, Director of Midwifery Practice

Shane Crowe[3] BN, BEd, ProfCertHlthSysMgt, MACN, Executive Director of Nursing and Midwifery

Adrian Dabscheck[5] MBBS, MEDPostGradDipPallMed, CertClinTeach, MBEth, Palliative Medicine Consultant

Paul Eleftheriou[5] BBiomedSc, MBBS, GD-SURGANT, MHA, FRACMA, Chief Medical Officer

Sarah Booth[6] BSW, GradDipHlthEc, MPH, Social Work Research and Data Lead

Danielle Hitch [6] BOT, MSc(AdvOT), MA(Writing), PhD, Occupational Therapist

Catherine M. Said[6,7,8] BAppSc(Phty), PhD, Associate Professor Physiotherapy

Kimberley J. Haines[6] BHSc(Physio), PhD, Physiotherapy Research Lead

Bodil Rasmussen[1,2,9,10] RN, DipNEd, MEdSt, PhD, FCNA, Chair in Nursing

[1]School of Nursing and Midwifery, Deakin University, 1 Gheringhap Street, Geelong, Vic. 3220, Australia. Email: k.wynter@deakin.edu.au; bodil.rasmussen@deakin.edu.au
[2]Centre for Quality and Patient Safety Research – Western Health Partnership, Deakin University, 221 Burwood Highway, Burwood, Vic. 3125, Australia.
[3]Nursing and Midwifery, Western Health, PO Box 294, St Albans, Vic. 3021, Australia. Email: melody.trueman@wh.org.au; sue.sweeney@wh.org.au; shane.crowe@wh.org.au
[4]People, Culture and Communications, Western Health, Locked Bag 2, Footscray, Vic. 3011, Australia. Email: suellen.bruce@wh.org.au
[5]Medical Services, Western Health, Locked Bag 2, Footscray, Vic. 3011, Australia. Email: adrian.dabscheck@wh.org.au; paul.eleftheriou@wh.org.au
[6]Allied Health, Western Health, PO Box 294, St Albans, Vic. 3021, Australia. Email: sarah.booth@wh.org.au; danielle.hitch@wh.org.au; cathy.said@wh.org.au; kimberley.haines@wh.org.au
[7]Physiotherapy, Melbourne School of Health Sciences, The University of Melbourne, Alan Gilbert Building, 161 Barry Street, Carlton, Vic. 3053, Australia.
[8]Australian Institute for Musculoskeletal Science, 176 Furlong Road, St Albans, Vic. 3021, Australia.
[9]Department of Public Health, Faculty of Health and Medical Sciences, University of Copenhagen, Blegdamsvej 3B, 2200 København, Denmark.
[10]Faculty of Health Sciences, University of Southern Denmark, Campusvej 55, DK-5230 Odense M, Denmark.
[11]Corresponding author. Email: s.holton@deakin.edu.au

Abstract.

Objective. This study investigated the short-term psychosocial effects of the COVID-19 pandemic on hospital clinical staff, specifically their self-reported concerns and perceived impact on their work and personal lives.

Methods. Nurses, midwives, doctors and allied health staff at a large metropolitan tertiary health service in Melbourne, Australia, completed an anonymous online cross-sectional survey between 15 May and 10 June 2020. The survey assessed respondents' COVID-19 contact status, concerns related to COVID-19 and other effects of COVID-19. Space was provided for free-text comments.

Results. Respondents were mostly concerned about contracting COVID-19, infecting family members and caring for patients with COVID-19. Concerns about accessing and using personal protective equipment, redeployment and their ability to provide high-quality patient care during the pandemic were also reported. Pregnant staff expressed uncertainty about the possible impact of COVID-19 on their pregnancy. Despite their concerns, few staff had considered resigning, and positive aspects of the pandemic were also described.

Conclusion. The COVID-19 pandemic has had a considerable impact on the work and personal lives of hospital clinical staff. Staff, particularly those who are pregnant, would benefit from targeted well-being and support initiatives that address their concerns and help them manage their work and personal lives.

What is known about the topic? The COVID-19 pandemic is having an impact on healthcare workers' psychological well-being. Little is known about their COVID-19-related concerns and the perceived impact of the pandemic on their work and personal lives, particularly hospital clinical staff during the 'first wave' of the pandemic in Australia.

What does this paper add? This paper contributes to a small but emerging evidence base about the impact of the COVID-19 pandemic on the work and personal lives of hospital clinical staff. Most staff were concerned about their own health and the risk to their families, friends and colleagues. Despite their concerns, few had considered resigning. Uncertainty about the possible impact of COVID-19 on pregnancy was also reported.

What are the implications for practitioners? During the current and future pandemics, staff, especially those who are pregnant, would benefit from targeted well-being and support initiatives that address their concerns and help them manage the impact on their health, work and personal lives.

Keywords: Australia, clinical staff, COVID-19, hospitals, occupational groups, pandemic, psychosocial factors, support initiatives.

Received 12 January 2021, accepted 31 May 2021, published online 19 July 2021

Introduction

The outbreak of COVID-19 is having, and will have, a considerable impact on health services in Australia and internationally. Health services in Australia implemented several measures in response to the outbreak aimed at protecting employees while providing best care for patients, including clinical testing and infection control measures such as the use of personal protective equipment (PPE), cancellation or postponement of patient clinics and elective surgeries, limited access for hospital visitors and suspension of volunteer programs (https://coronavirus.wh.org.au). The COVID-19 pandemic has also had an effect on many other aspects of society, including education, employment and the economy. Australia's federal, state and territory governments introduced lockdown restrictions in March 2020 in order to slow the spread of COVID-19, including the closure of schools and businesses (https://www.australia.gov.au).

To date there have been few studies about the psychosocial effects of this type of disease outbreak on health service staff. Previous research about the experiences of health service staff during the Severe Acute Respiratory Syndrome (SARS) outbreak in 2003 suggests that staff were concerned about their risk of infection[1] and exposing their friends, family and colleagues to SARS.[1] Positive aspects of the SARS outbreak were also reported, including increased awareness of infection control and a sense of togetherness and cooperation.[2]

Evidence is emerging about the psychological impact of COVID-19 on healthcare workers,[3–9] but little is known about their specific COVID-19-related concerns and the perceived impact of the pandemic on their work and personal lives, particularly for hospital clinical staff during the first wave of the pandemic in Australia (late January 2020–May 2020; https://covid19.who.int/region/wpro/country/au). Identification and understanding of hospital clinical staff's COVID-19-related psychosocial concerns and the impact of the pandemic on their work and personal lives will help in the development and implementation of appropriate well-being and support initiatives. Without adequate support, staff may resign from their jobs, be absent from work, become unwell or be unable to provide high-quality care for their patients.

The aim of this study was to investigate the immediate psychosocial effects of the first wave of the COVID-19 pandemic on hospital clinical staff in Australia. The specific objectives of the study were to assess: (1) clinical staff's self-reported concerns about COVID-19; (2) the impact of the pandemic on their work and personal lives; and (3) differences in concerns and impacts between discipline groups (nursing and midwifery, allied health (AH) staff, doctors).

Table 1. Respondents' sociodemographic and employment characteristics
Unless indicated otherwise, data are presented as *n* (%).

Characteristic	Nurses and midwives	Allied health	Doctors	Total
Sex				
No. respondents	358	135	125	618
Female	330 (92.2)	121 (89.6)	74 (59.2)	525 (85.0)
Age (years)				
No. respondents	354	134	125	613
Range	21–70	22–64	26–70	21–70
Mean ± s.d.	41.4 ± 12.5	35.9 ± 9.7	41.1 ± 11.0	40.2 ± 11.8
Country of birth				
No. respondents	358	135	125	618
Born in Australia	236 (65.9)	113 (83.7)	69 (55.2)	418 (67.6)
Live with school-aged children				
No. respondents	356	135	124	615
Yes	117 (32.9)	33 (24.4)	41 (32.8)	191 (31.1)
Employment status				
No. respondents	355	134	124	613
Full-time	104 (29.3)	85 (63.4)	77 (62.1)	266 (43.4)
Part-time	222 (62.5)	49 (36.6)	47 (37.9)	318 (51.9)
Other (casual, bank, pool)	29 (8.2)	0 (0.0)	0 (0.0)	29 (4.7)
Years of clinical practice				
No. respondents	352	133	122	607
Range	0–50	0.5–40	0.5–47	0–50
Mean ± s.d.	16.6 ± 13.0	10.7 ± 8.9	16.2 ± 11.2	15.2 ± 12.1
Years employed at health service				
No. respondents	355	134	125	614
Range	0–45	0–25	0.3–28	0–45
Mean ± s.d.	8.4 ± 8.1	5.6 ± 4.8	7.1 ± 7.2	7.5 ± 7.4

Methods

Design, setting and participants

A brief self-administered anonymous online cross-sectional survey was administered to clinical staff (nurses, midwives, AH staff, doctors) who were employed at the study health service during the recruitment period (15 May–10 June 2020). The health service is located in metropolitan Melbourne, Australia. It includes three acute hospitals, a day hospital, a transition care program and a drug and alcohol service, and provides acute tertiary services, subacute care, specialist ambulatory clinics and community health services.

The study was conducted during the first wave of the pandemic in Australia; at this time, the state of Victoria was in Stage 3 restrictions,[10] which included limits on indoor and outdoor gatherings (up to five visitors in the home, groups of up to 10 people outdoors), physical distancing, remote learning for school-aged children and working from home for non-essential workers. Up until 15 May 2020, there had been 1543 cases of COVID-19 in Victoria (most in metropolitan Melbourne) and 18 deaths; nine people were in hospital, including seven patients in intensive care,[11] including some at the study health service. During data collection, the health service was affected by two COVID-19 clusters in the region, one from a fast food restaurant and one from a meat processing facility.

Procedure

All nurses, midwives, doctors and AH staff were invited by email sent via distribution lists for each clinical discipline to complete an online anonymous survey available on Qualtrics (Qualtrics, Provo, UT, USA), an online survey platform. A reminder email was sent 2–3 weeks later.

The self-report survey was informed by published studies on the effect of similar infectious diseases (e.g. SARS, Middle East Respiratory Syndrome Coronavirus (MERS-CoV)) on the psychosocial well-being of health service staff[1,2,12–15] and the clinical experience of the research team.

The survey included mostly fixed-response questions assessing: (1) sociodemographic and employment characteristics (see Table 1); (2) symptoms of depression, anxiety and stress in the past week (these findings have been reported previously[4]); (3) one fixed-response question about exposure to or contact with COVID-19; (4) six items about concerns related to the effects of COVID-19 on personal and family health, rated using a five-point Likert scale ranging from 'not concerned' to 'extremely concerned'; (5) nine items assessing the impact of COVID-19 precautionary measures, rated using a three-point Likert scale ranging from 'does not affect my ability to do my job' to 'affects my ability to do my job a lot'; and (6) 15 items on work impacts and 11 items on personal impacts of COVID-19, each rated on a five-point Likert scale ranging from 'strongly disagree' to 'strongly agree'.

For analysis and in order to avoid low cell counts for smaller cohorts, responses to Likert-scale items were recoded to binary variables for concerns related to the effects of COVID-19 on personal and family health ('not concerned' or 'extremely/very concerned'), the impact of COVID-19 precautionary measures ('does not affect my ability to do my job' or 'affects my ability to

do my a job a lot/a little') and the work and personal impacts of COVID-19 (disagree' or 'strongly agree/agree').

Space was also provided at the end of the survey for respondents to make free-text comments.

Data management and analysis

Data were analysed using IBM SPSS Statistics version 26 (IBM Corp., Armonk, NY, USA). Descriptive statistics were used to summarise the data.

Chi-squared tests were used to test for differences between discipline groups (nursing and midwifery, AH staff, doctors), comparing column proportions. Bonferroni corrections were applied to adjust for multiple tests.[16]

Free-text comments were analysed using content (conceptual) analysis in order to identify the presence and meaning of certain themes or concepts.[17] The findings have been used to complement the quantitative data and illustrative quotes have been provided for each theme identified and to highlight the findings.

Ethical considerations

The email invitation to complete the survey included a participant information sheet. Completion of the survey was taken as implied consent. The study was approved by the Western Health Low Risk Ethics Panel (HREC Reference no. HREC/20/WH/62913, 5 May 2020).

Results

Sample and response

Approximately 4530 clinical staff are employed by the health service. Of the 668 (15%) respondents, 618 completed all sections of the survey and were included in analyses.

More than half the respondents ($n = 358$; 57.9%) were nurses or midwives; the remainder were AH staff ($n = 135$; 21.8%) and doctors ($n = 125$; 20.2%). Most respondents were female, born in Australia and employed on a part-time basis; approximately one-third lived with school-aged children (Table 1).

In all, 335 free-text comments were provided by respondents: 261 (77.9%) from nurses and midwives, 38 (11.3%) from AH staff and 36 (10.7%) from medical staff. Respondents' free-text comments included elaboration on the fixed-response questions and identification of other concerns and impacts of COVID-19 that were not specifically asked about in the survey (Table 2).

COVID-19 contact status

Three respondents had been diagnosed with COVID-19, and 108 (17.5%) had been in direct contact with people (in the community and/or at work) with a COVID-19 diagnosis and had experienced associated self-isolation and testing (with negative results).

Significantly more nurses and midwives ($n = 69$; 20%) and doctors ($n = 27$; 22%) had been in direct contact with a person with a COVID-19 diagnosis than AH staff ($n = 12$; 9%; $\chi^2 = 10.945$, $P < 0.05$).

Self-reported concerns about COVID-19

More than half the respondents were (extremely or very) concerned about passing COVID-19 on to family members and their family's health, and more than one-third were extremely or very concerned about caring for a patient who had or had suspected COVID-19. Significantly more nurses and midwives were extremely or very concerned than other clinicians for each of the six concerns items (Table 3).

Free-text comments outlined participants' concerns about exposing their family members to COVID-19 and having contact with patients who were asymptomatic (Table 2).

Use and effects of COVID-19 precautionary measures

Respondents reported that certain COVID-19 precautionary measures, such as PPE, interfered with their ability to do their job. Over two-thirds of respondents reported face shields, social distancing from colleagues and not being able to have face-to-face meetings or gatherings affected their duties. AH staff and doctors were significantly more likely than nurses and midwives to indicate that social distancing from colleagues, restricted face-to-face meetings and wearing gloves affected their work a lot or a little. Doctors were more likely than other clinicians to report that the use of face shields, masks and goggles and having to self-isolate after an overseas trip affected their ability to do their job. AH staff were more likely than the other two groups to report that staying away from work if they had any signs of illness and restricted access to some or all hospital sites affected their ability to do their job (Table 4).

Free-text comments also highlighted the effects that these precautionary measures had on participants personally, and on their ability to provide high-quality patient care and communicate with patients (Table 2).

Work impacts of COVID-19

Most respondents were concerned about the risk of getting COVID-19 as a result of their job; almost two-thirds felt more stress at work than they normally did, and more than half reported having to do work tasks that they would not normally do. However, respondents reported that the COVID-19 pandemic had also had some positive work impacts. Many respondents indicated that COVID-19 had been a learning experience, they had increased their awareness and knowledge of disease control and that there was an increased sense of togetherness and cooperation among staff. Only a small proportion of respondents indicated that they had considered resigning as a result of COVID-19 (Table 5).

Doctors were significantly more likely than AH staff to agree that their job puts them at risk of COVID-19. AH staff were significantly more likely than the other groups to strongly agree or agree that they have had to do work tasks that they would not usually do and had to retrain or complete training courses for these roles or jobs. AH staff and doctors were significantly more likely than nurses and midwives to strongly agree or agree that they had to cancel or postpone their annual leave because of the COVID-19 outbreak and felt disappointed as a result, and that they had been less busy than usual. AH staff and nurses and midwives were significantly more likely than doctors to strongly agree or agree that they did not feel very prepared to care for patients with COVID-19 (Table 5).

Several respondents provided comments about the effect that redeployment had on their work lives during the pandemic, as

Table 2. Examples of respondents' free-text comments by theme and discipline group

Theme	Clinical discipline group		
	Nurses and midwives	AH staff	Doctors
Self-reported concerns about COVID-19			
Infecting family, friends and colleagues	My husband had cancer 18 months ago so my concern has been passing it onto to him if I was a carrier	Unknowingly putting others at risk	I have avoided seeing immediate family members (and I live alone) due to fear of passing on virus
	Transmitting [COVID-19] to my community/friends if I have an asymptomatic exposure	I worry that I will infect my co-workers if I catch public transport	Due to the risk of infection, I have moved out to a temporary place as I do not want to infect my parents who are over 65 and it is unexpectedly financially burdensome and very isolating, but I have done it so that I can continue working
			I worry that healthcare workers are at least 5 times more likely to contract COVID and this means they will take it home to their families
Patient care and contact	Visiting homes with COVID-positive family member present	Coming into contact with patients who are positive but asymptomatic	Passing COVID-19 to immunosuppressed patients
Use and effects of PPE			
Personal effects	Constantly getting headaches, as face shield means I drink less water as such a hassle	Social distancing has impacted on the way I do my work. We don't have an office to work from and often find myself looking for a safe space to work from with little to no success	Lots of backwards and forwards [about use of PPE from the health service] created so much ambiguity and anxiety
	Face shields have been giving staff headaches (e.g. tightness around head), I am in particular sensitive to the banding		
Patient care and communication	My role involves talking to patient about sensitive subjects – PPE can reduce the quality of communication and be a barrier to developing therapeutic rapport	The biggest challenge has been [lack of] a lot of clear information regarding what is required when caring for patients. I will follow the procedure however nobody can tell me which level of precautions are required in various situations	Face shields interfere with vision/spatial differentiation especially with spectacles on in addition to difficulty with communication
	The biggest impact that PPE has on my work is it becomes difficult to communicate with patients, particularly those who are deaf or don't speak English very well. This is in addition to being uncomfortable i.e. fogging up and breathing in your own expired air		
Work impacts of COVID-19			
Redeployment	It has been stressful to be redeployed to other campuses and to carry out duties not usually undertaken	I have been redeployed… This has greatly affected my identity as a clinician, my role within the hospital, my sense of self-worth, my role within my normal team (I don't feel part of a team now) and I'm worried about job security and my role existing when this goes back to normal	Uncertainty and changing roles at work is unsettling
	I was seconded into a temporary role at the commencement of the COVID action plan and it was quite stressful. I am generally not a stressed or anxious person and it had a surprisingly profound effect on me		
Ability to provide high-quality patient care	The added challenge of dealing with anxiety of patient relatives (their fear of 'catching something', also the distress of having to limit visitors), and providing education for them on COVID (e.g. when relative comes in wearing gloves and mask rather than washing hands!)	Social distancing restrictions have impacted the ability to provide excellent care to patients e.g. we are not allowed to attend case conference meaning that patient care is not as good and restrictions of visitors is also negatively affecting the rehab of our patients	Physical distancing has negatively impacted on communication between members of the multidisciplinary team, as well as the ability of families to assist with care of older persons in hospital
	Job satisfaction DRAMATICALLY DECREASED as feel as though unable to adequately provide care for families		Difficult to use interpreters due to restrictions – I am worrying that patients who are more comfortable in a language other than English are really missing out – no visitors and restricted conversations

(*continued next page*)

Table 2. (*continued*)

Theme	Clinical discipline group		
	Nurses and midwives	AH staff	Doctors
Positive aspects of COVID-19	I am still very appreciative that I have a job	As a 'vulnerable' staff member, due to being immunocompromised, I have been supported to work from home, which has been greatly appreciated and alleviated a lot of anxiety	There have been a great deal of positives [sic] that have arisen from this situation. On balance, my relationship with my colleagues has improved as we have worked closely together in slightly different roles. My overall mental health and attitude has improved too, partially as a result of the way in which we have all worked together as a team!
Personal impacts of COVID-19			
Impact on personal health and well-being	It is definitely the fear of contracting COVID and becoming terminal The devastating scenes of the impact [COVID-19] has had in other countries caused great distress to me Due to being a pool nurse, working on COVID-19 wards and other wards, I feel I have been working very hard and close to burning out. My anxiety, social and mental health has been impacted due to no work–life balance	My own lung disease diagnosis and unknown risks	Being at work has been helpful for me. I feel much more anxious when at home alone with time to worry and no distractions. Also has been a social outlet because I live alone and family are all interstate
Uncertainty and concerns about being pregnant	Exposing my unborn baby to COVID when we don't know the consequences	Being pregnant through this time has been challenging. I found it frustrating no formal guidance was given earlier from the organisation about this	I think the impact of COVID-19 on pregnant staff hasn't been addressed well and causes my junior staff significant fear
	[I am concerned about] the impacts of working near COVID-19 patients in a hospital whilst pregnant As a high-risk pregnancy and with a toddler at home and with a partner who is also a nurse, our risks had to be minimised. I was advised by my Obstetrician not to actively participate with work that puts me at high risk of infection	I am currently 21 weeks pregnant. I have found information difficult to obtain on working while being pregnant	
Financial concerns	As a casual nurse, loss of shifts, shifts being cancelled at short notice impacting financially	There has been minimal communication regarding COVID-19 leave pay and pay whilst awaiting test results/if you need to quarantine which is a source of anxiety regarding how I would manage financially if I was to fall ill due to COVID-19	
Remote learning for school-aged children	Pressure isn't only from work and COVID-19, impacts within the community, make being able to work at this time difficult, the main one is home learning for students. While grateful to be able to work, coming to work and leaving students at home to fend for themselves adds to an already stressful situation	Remote learning for children and looking after my children during school hours has been quite overwhelming to also juggle with work and maintaining a household	Senior staff like myself with school aged children have had to simultaneously take in new tasks like COVID-19 pandemic response planning, talk and think about worst case scenarios, manage and support junior medical staff and clinical teams and manage home-schooling at home

Table 3. Respondents' psychosocial concerns about COVID-19
Unless indicated otherwise, data show the number (%) reporting themselves to be extremely or very concerned

	Nurses and midwives	Allied health	Doctors	Total	χ^2	*P*-value
Your family's health	203 (58.8)	63 (47.0)	51 (41.5)	317 (52.7)	13.0	0.002
Passing COVID-19 on to family members	203 (58.6)	60 (44.8)	50 (40.6)	313 (51.9)	15.3	<0.001
Caring for a patient who has or has suspected COVID-19	157 (45.6)	38 (28.3)	22 (17.9)	217 (36.1)	34.7	<0.001
Hospital patients having COVID-19	132 (38.3)	28 (20.9)	25 (20.4)	185 (30.7)	21.5	<0.001
Your colleagues having COVID-19	126 (36.5)	27 (20.20	19 (15.5)	172 (28.6)	25.7	<0.001
Falling ill as a result of COVID-19	101 (29.2)	13 (9.7)	12 (9.7)	126 (20.9)	33.8	<0.001

Table 4. Interference of PPE with work
Unless indicated otherwise, data show the number (%) reporting that PPE affects their ability to do job a lot or a little

	Nurses and midwives	Allied health	Doctors	Total	χ^2	*P*-value
Face shields	222 (66.0)	92 (74.2)	96 (81.3)	410 (70.9)	10.7	0.005
Social distancing from colleagues	204 (60.2)	111 (84.8)	92 (76.7)	407 (69.0)	30.8	<0.001
Restricted face-to-face meetings or gatherings	184 (55.6)	115 (87.8)	94 (78.3)	393 (67.6)	52.4	<0.001
Staying away from work when you have any signs of illness	169 (60.4)	88 (75.9)	73 (72.2)	330 (66.4)	10.8	0.005
Mask	163 (51.7)	66 (64.0)	87 (74.3)	316 (59.1)	19.4	<0.001
Restricted access to some or all hospital sites	89 (28.3)	83 (64.9)	50 (42.7)	222 (39.6)	51.5	<0.001
Goggles or eye shields	118 (38.3)	39 (39.0)	63 (58.4)	220 (42.6)	13.8	0.001
Imposed self-isolation on return from overseas trip	53 (34.6)	25 (46.3)	32 (59.2)	110 (42.1)	10.4	0.006
More frequent handwashing or sanitising	52 (15.3)	22 (16.8)	17 (14.1)	91 (15.4)	NS	NS
Gloves	28 (8.8)	18 (17.3)	22 (18.9)	68 (12.6)	10.6	0.005

Table 5. Impact of COVID-19 on respondents' work lives
Unless indicated otherwise, data show the number (%) who strongly agree or agree with each statement

	Nurses and midwives	Allied health	Doctors	Total	χ^2	*P*-value
It has been a learning experience	301 (89.1)	121 (93.0)	112 (91.8)	534 (90.5)	NS	NS
My job puts me at risk of getting COVID-19	282 (82.2)	101 (75.9)	110 (89.4)	493 (82.3)	8.0	0.018
My awareness and knowledge of disease control has increased	271 (79.3)	105 (80.2)	100 (82.0)	476 (80.0)	NS	NS
There is an increased sense of togetherness and cooperation among the staff	220 (64.4)	92 (68.7)	91 (74.6)	403 (67.4)	NS	NS
I feel more stress at work	224 (64.9)	76 (57.2)	70 (57.4)	370 (61.7)	NS	NS
I have had to do work tasks that I don't usually do	167 (49.6)	84 (62.7)	63 (51.6)	314 (52.9)	6.7	0.034
I have had to cancel or postpone my annual leave because of the COVID-19 outbreak	131 (42.3)	72 (57.2)	69 (58.4)	272 (49.1)	13.2	0.001
I am disappointed that I have had to cancel or postpone my annual leave due to COVID-19	111 (38.8)	65 (59.1)	63 (62.4)	239 (48.1)	23.5	<0.001
I have had to do more work than I usually do	148 (43.4)	42 (31.3)	41 (33.7)	231 (38.7)	7.6	0.023
I have been less busy than usual	72 (21.1)	57 (42.8)	47 (38.6)	176 (29.6)	27.7	<0.001
The situation has brought me closer to my manager	84 (24.8)	43 (32.1)	42 (35.0)	169 (28.4)	NS	NS
I have had to retrain or do training courses so I can do a role/job I normally wouldn't	91 (28.1)	52 (40.0)	24 (20.1)	167 (29.2)	12.2	0.002
I don't feel very prepared to care for patients with COVID-19	87 (25.8)	36 (27.3)	16 (13.1)	139 (23.4)	9.3	0.010
There is more conflict amongst colleagues at work	65 (19.5)	24 (18.0)	19 (15.8)	108 (18.4)	NS	NS
I have considered resigning because of COVID-19	46 (13.5)	13 (9.8)	10 (8.3)	69 (11.6)	NS	NS

well as the effect of COVID-19 on their ability to provide high-quality patient care. Positive aspects of the pandemic were also outlined in respondents' free-text comments (Table 2).

Personal impacts of COVID-19

Most respondents (>80%) agreed that they had avoided public or crowded spaces and interacting with friends and extended family, and that COVID-19 had affected their personal and family's lifestyle. Three-quarters indicated that people close to them were concerned about their health. Nurses and midwives were significantly more likely than other groups to agree that that they avoided telling people that they worked at a hospital, and that they had a greater appreciation of life and work (Table 6).

Table 6. Impact of COVID-19 on respondents' personal lives
Unless indicated otherwise, data show the number (%) who strongly agree or agree with each statement

	Nurses and midwives	Allied health	Doctors	Total	χ^2	*P*-value
I have avoided public or crowded spaces (e.g. shops, restaurants, public transport)	309 (93.3)	116 (91.3)	106 (86.9)	531 (91.6)	NS	NS
My personal or family's lifestyle has been affected	278 (82.0)	116 (89.3)	110 (90.25)	504 (85.3)	6.8	0.033
I have avoided interacting with my friends and extended family	281 (84.1)	116 (89.3)	106 (87.6)	503 (86.0)	NS	NS
People close to me have been concerned about my health	271 (78.7)	93 (69.9)	87 (71.3)	451 (75.3)	NS	NS
I have a greater appreciation of life and work	230 (68.2)	89 (66.9)	68 55.8)	387 (65.4)	6.4	0.041
People treat me and my family differently because I work at a hospital	171 (49.9)	52 (39.4)	57 (47.1)	280 (47.0)	NS	NS
My family and friends are worried they might get infected from me	159 (47.4)	47 (36.2)	48 (40.4)	254 (43.4)	NS	NS
The COVID-19 situation has brought me closer to my family	170 (49.7)	54 (40.60	55 (45.1)	279 (46.7)	NS	NS
People avoid me and my family because I work at a hospital	122 (36.2)	35 (26.5)	34 (28.1)	191 (32.3)	NS	NS
I am likely to suffer financial losses	76 (22.6)	26 (19.4)	35 (28.7)	137 (23.1)	NS	NS
I avoid telling people that I work at a hospital	97 (28.2)	21 (15.7)	19 (15.7)	137 (22.9)	13.0	0.002

Respondents also provided comments about the impact of COVID-19 on their personal lives, including effects on their physical and mental health. Many female respondents articulated their uncertainty and concerns about being pregnant during the pandemic. Respondents also wrote comments about the impact COVID-19 was having on other aspects of their personal lives, such as their financial situation and the difficulties managing work and remote learning for school-aged children (Table 2).

Discussion

The first wave of the COVID-19 pandemic has had a considerable effect on the personal and work lives of Australian hospital clinical staff. The respondents in this study identified challenges in their work lives, such as a risk and fear of being exposed to COVID-19, problems associated with accessing and using PPE, redeployment and barriers to providing high-quality care for COVID-19-infected and non-infected patients. They also identified that the pandemic had a major effect on their personal lives, including potentially infecting family members with COVID-19, financial concerns, remote learning for school-aged children and uncertainty about the possible impact of COVID-19 on pregnancy.

Differences between the discipline groups were identified. Nurses and midwives expressed more concern than clinicians from the other groups about caring for patients with COVID-19 and the risk to themselves and their families; AH staff reported more concerns about redeployment, having to retrain and do tasks they normally would not perform, as well as limiting work across hospital sites; and, although doctors were less concerned than nurses and midwives about falling ill with COVID-19, they were more likely to feel that their job put them at risk and that PPE affected their ability to do their job.

Exposure to COVID-19

Similar to the findings of other studies conducted during the COVID-19 pandemic[9,18–20] and outbreaks of other infectious diseases, such as SARS,[1,2,21,22] MERS[15] and the H1N1 strain of influenza,[23,24] two of the most frequently reported concerns among respondents in this study were the impact of COVID-19 on their own health and the risk of infecting friends, family and colleagues due to their clinical role. These concerns are justified because healthcare workers are at increased risk of COVID-19 infection through their occupational exposure,[25,26] and are likely to be aware of the risks of COVID-19 to their own health given the effects of other infectious disease outbreaks, such as SARS, on healthcare workers' health. A substantial proportion of COVID-19 cases in Victoria and overseas has been among healthcare workers;[25,27,28] as of 18 November 2020, 17.6% (3574) of the total number of COVID-19 cases in Victoria (20 345) were healthcare workers[27,29] (earlier data relevant to the study period are not available). Almost three-quarters of the Victorian healthcare worker cases were acquired in a healthcare setting.[27] Exposure to, and deaths from, COVID-19 among healthcare workers have also been widely reported in the media.[30,31]

Redeployment

Health services have had to make many changes to the working arrangements of their staff during the COVID-19 pandemic in order to ensure adequate staffing and the provision of care for infected patients, including the redeployment of clinical staff to other areas and the implementation of infection prevention and control strategies, such as PPE.[26] Over half the respondents in this study reported changes to their regular work tasks during the first wave of the COVID-19 pandemic, which is consistent with the findings of other studies of the effects of infectious disease outbreaks on healthcare workers.[2,9,18] Redeployment has implications for staff, including loss of connection with work colleagues, potential stress of performing new tasks and being assigned to work areas that may not align with a person's choice of occupation.

Resignation

In order for health services to respond to a pandemic or an infectious diseases outbreak, they need to maintain an adequate workforce, including ensuring sufficient staff while employees are isolating and awaiting test results. Very few (11.6%) of the respondents in this study had considered resigning because of COVID-19. This is a similar proportion to that reported among

healthcare workers in Singapore during the bird flu pandemic (15%).[24] Consistent with these findings, less than 10% of hospital physicians in a Canadian study stated that the SARS outbreak had caused them to re-evaluate their career choice,[21] and only a small proportion (4.3%) of Greek healthcare workers during the A/H1N1 influenza pandemic reported that they would take leave from work to avoid infection.[23] Several studies have found that healthcare workers believe it is their professional duty and ethical obligation to continue to provide care for patients during pandemics, despite the potential risks to themselves or their families.[15,21,23,24,32–34] The COVID-19 pandemic has also had an impact on the Australian economy and it is estimated that over 300 000 jobs may be lost in the state of Victoria due to the pandemic.[35] Healthcare workers may be more likely to remain in their current positions if they perceive that there are few other available jobs. It should be noted that data for this study were collected during the first wave of the pandemic in Australia. Respondents' intentions may change during later waves of the pandemic as a result of caring for more infected patients and being infected themselves.

Risk for clinicians' families

Family responsibilities and other life stressors continue, and may be exacerbated, for healthcare workers during infectious disease outbreaks.[36] The respondents in this study identified difficulties managing their paid work and family responsibilities during the pandemic, including supervising school-aged children who were at home undertaking remote learning.

Pregnant women are often particularly vulnerable during outbreaks of infectious diseases.[37] Little is currently known about the impact of COVID-19 on pregnant women and their babies.[38] Similar to the findings of a recent rapid review about the psychological impact of infectious disease outbreaks on women who were pregnant at the time of the outbreak,[37] pregnant staff in this study reported occupational and health concerns, including uncertainty about the risk of COVID-19 to their health and that of their baby and a lack of information and advice about working while pregnant during the pandemic.

Strengths and limitations

A large and diverse sample of hospital clinical staff, including nurses, midwives, AH staff and doctors, was surveyed for this study. The proportion of respondents from each clinical discipline group is broadly representative of the proportion in the health service: approximately two-thirds (66%) of the clinical staff at the health service are nurses and midwives and one-quarter (26%) are doctors. AH staff were overrepresented in the study sample; the proportion in the health service is approximately 7%. Although the response rate was relatively low, it is similar to that of other survey-based studies conducted during an infectious disease outbreak.[13] Staff were only able to be invited to participate in the study via email, and the survey had to be completed online due to infection control protocols at the health service.

The study was conducted at one large metropolitan health service in Australia and therefore the results may not be generalisable to other health services or settings.

The study design was cross-sectional. Therefore, causal relationships cannot be determined.

Data collection was only conducted at one time point in order to minimise participant burden and the impact on essential clinical care. Given that the perceptions and experiences of health service staff are likely to vary at different stages of the pandemic, follow-up surveys will be conducted in order to understand the long-term effects of the pandemic on Australian hospital clinical staff.

Implications for health policy and practice

In order to manage and mitigate the psychosocial effects of the COVID-19 pandemic and help health services assist and retain their staff, hospital clinical staff need appropriate interventions and support.[39,40] The health service in this study and the Victorian State Government implemented several well-being initiatives to support health service staff during the pandemic (https://coronavirus.wh.org.au/wellbeing-support).[41] This study found that although similar concerns were identified by respondents from all clinical discipline groups, there were also differences between groups. Accordingly, the findings of this study indicate that many staff would benefit from further targeted (e.g. by discipline group) initiatives that address (or help them manage) their work and personal concerns, particularly their fears about their own health and the risks to their families. Staff who are pregnant would especially benefit from evidence-based information and support addressing their specific needs and concerns.

Future research

The findings of this study indicate that the COVID-19 pandemic has had a considerable impact on the work and personal lives of hospital clinical staff. However, little is known about the psychosocial effects of this outbreak on other types of healthcare workers,[39] such as those in primary care practices or community health services who undertake various roles, including education, advocacy and clinical services, and work with a range of communities, including those that experience disadvantage and are culturally and linguistically diverse, many of whom have been disproportionally affected by COVID-19. Many community and primary care health services have also provided COVID-19 services, such as respiratory clinics, testing sites, care for positive patients in a community setting and working with vulnerable people in high-risk accommodation settings. Future research is needed to gain a greater understanding of the impact of the pandemic on healthcare workers in different services and settings so that appropriate and targeted support initiatives can be implemented.

Conclusion

The COVID-19 pandemic has had a considerable impact on the work and personal lives of hospital clinical staff. Pregnant staff reported particular concerns about the uncertainty of being pregnant during the pandemic. Despite their concerns, few staff reported considering resigning from the health service, and positive aspects of the pandemic were also described. The findings of this study indicate that staff would benefit from targeted psychoeducational, social and occupational initiatives and support that address their psychosocial concerns.

Competing interests

The authors have no competing interests to report.

Declaration of funding

This research was support by an internal grant from the Institute of Health Transformation at Deakin University.

Acknowledgements

The authors are most grateful to the health service staff who participated in the study.

References

1 Chong MY, Wang WC, Hsieh WC, Lee CY, Chiu NM, Yeh WC, *et al*. Psychological impact of severe acute respiratory syndrome on health workers in a tertiary hospital. *Br J Psychiatry* 2004; 185: 127–33. doi:10.1192/bjp.185.2.127

2 Nickell LA, Crighton EJ, Tracy CS, Al-Enazy H, Bolaji Y, Hanjrah S, *et al*. Psychosocial effects of SARS on hospital staff: survey of a large tertiary care institution. *CMAJ* 2004; 170(5): 793–8. doi:10.1503/cmaj.1031077

3 Huang JZ, Han MF, Luo TD, Ren AK, Zhou XP. [Mental health survey of medical staff in a tertiary infectious disease hospital for COVID-19] *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi* 2020; 38(3): 192–5. [In Chinese]

4 Holton S, Wynter K, Trueman M, Bruce S, Sweeney S, Crowe S, *et al*. Psychological wellbeing of Australian hospital clinical staff during the COVID-19 pandemic. *Aust Health Rev* 2021; 45(3): 297–305. doi:10.1071/AH20203

5 Kang L, Li Y, Hu S, Chen M, Yang C, Yang BX, *et al*. The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus. *Lancet Psychiatry* 2020; 7(3): e14. doi:10.1016/S2215-0366(20)30047-X

6 Lu W, Wang H, Lin Y, Li L. Psychological status of medical workforce during the COVID-19 pandemic: a cross-sectional study. *Psychiatry Res* 2020; 288: 112936. doi:10.1016/j.psychres.2020.112936

7 Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, *et al*. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Network Open* 2020; 3(3): e203976. doi:10.1001/jamanetworkopen.2020.3976

8 Morgantini LA, Naha U, Wang H, Francavilla S, Acar Ö, Flores JM, *et al*. Factors contributing to healthcare professional burnout during the COVID-19 pandemic: a rapid turnaround global survey. *PLoS One* 2020; 15(9): e0238217. doi:10.1371/journal.pone.0238217

9 Digby R, Winton-Brown T, Finlayson F, Dobson H, Bucknall T. Hospital staff well-being during the first wave of COVID-19: staff perspectives. *Int J Ment Health Nurs* 2021; 30(2): 440–50. doi:10.1111/inm.12804

10 Premier of Victoria. Statement from The Premier – 30 March 2020. Media release. Melbourne: Victorian State Government; 2020. Available at https://www.premier.vic.gov.au/atement-premier

11 Department of Health and Human Services. Coronavirus update for Victoria – 15 May 2020. Media release. Melbourne: Victorian State Government; 2020. Available at https://www.dhhs.vic.gov.au/coronavirus-update-victoria-15-may2020

12 Wong TW, Yau JK, Chan CL, Kwong RS, Ho SM, Lau CC, *et al*. The psychological impact of severe acute respiratory syndrome outbreak on healthcare workers in emergency departments and how they cope. *Eur J Emerg Med* 2005; 12(1): 13–8. doi:10.1097/00063110-200502000-00005

13 Maunder RG, Lancee WJ, Rourke S, Hunter JJ, Goldbloom D, Balderson K, *et al*. Factors associated with the psychological impact of severe acute respiratory syndrome on nurses and other hospital workers in Toronto. *Psychosom Med* 2004; 66(6): 938–42. doi:10.1097/01.psy.0000145673.84698.18

14 Chan AO, Huak CY. Psychological impact of the 2003 severe acute respiratory syndrome outbreak on health care workers in a medium size regional general hospital in Singapore. *Occup Med (Lond)* 2004; 54(3): 190–6. doi:10.1093/occmed/kqh027

15 Khalid I, Khalid TJ, Qabajah MR, Barnard AG, Qushmaq IA. Healthcare workers emotions, perceived stressors and coping strategies during a MERS-CoV outbreak. *Clin Med Res* 2016; 14(1): 7–14. doi:10.3121/cmr.2016.1303

16 Tabachnik BG, Fidell LS. Using multivariate statistics, 6th edn. Boston: Pearson Education; 2013.

17 Columbia University Mailman School of Public Health. Content analysis. Columbia University; 2019. Available at https://www.mailman.columbia.edu/research/population-health-methods/content-analysis

18 Nie A, Su X, Zhang S, Guan W, Li J. Psychological impact of COVID-19 outbreak on frontline nurses: a cross-sectional survey study. *J Clin Nurs* 2020; 29: 4217–26. doi:10.1111/jocn.15454

19 King's College London. Survey of UK nurses and midwives' highlights their concerns about health, training and workload during COVID-19. Press release, 21 April 2020. Available at https://www.kcl.ac.uk/news/survey-of-uk-nurses-and-midwives-highlights-their-concerns-about-health-training-and-workload-during-covid-19

20 Sampaio F, Sequeira C, Teixeira L. Nurses' mental health during the Covid-19 outbreak: a cross-sectional study. *J Occup Environ Med* 2020; 62(10): 783–7. doi:10.1097/JOM.0000000000001987

21 Grace SL, Hershenfield K, Robertson E, Stewart DE. The occupational and psychosocial impact of SARS on academic physicians in three affected hospitals. *Psychosomatics* 2005; 46: 385–91. doi:10.1176/appi.psy.46.5.385

22 Maunder R, Hunter J, Vincent L, Bennett J, Peladeau N, Leszcz M, *et al*. The immediate psychological and occupational impact of the 2003 SARS outbreak in a teaching hospital. *CMAJ* 2003; 168(10): 1245–51.

23 Goulia P, Mantas C, Dimitroula D, Mantis D, Hyphantis T. General hospital staff worries, perceived sufficiency of information and associated psychological distress during the A/H1N1 influenza pandemic. *BMC Infect Dis* 2010; 10: 322. doi:10.1186/1471-2334-10-322

24 Cheong SK, Wong TY, Lee HY, Fong YT, Tan BY, Koh G, *et al*. Concerns and preparedness for an avian influenza pandemic: a comparison between community hospital and tertiary hospital healthcare workers. *Ind Health* 2007; 45(5): 653–61. doi:10.2486/indhealth.45.653

25 Kursumovic E, Lennane S, Cook TM. Deaths in healthcare workers due to COVID-19: the need for robust data and analysis. *Anaesthesia* 2020; 75(8): 989–92. doi:10.1111/anae.15116

26 Bielicki JA, Duval X, Gobat N, Goossens H, Koopmans M, Tacconelli E, *et al*. Monitoring approaches for health-care workers during the COVID-19 pandemic. *Lancet Infect Dis* 2020; 20(10): e261–7. doi:10.1016/S1473-3099(20)30458-8

27 Department of Health and Human Services. Victorian healthcare worker (clinical and non-clinical) coronavirus (COVID-19) data. Melbourne: State Government of Victoria; 2020. Available at https://www.dhhs.vic.gov.au/victorian-healthcare-worker-covid-19-data

28 Zhang B, Small DS. Number of healthcare workers who have died of COVID-19. *Epidemiology* 2020; 31(6): e46. doi:10.1097/EDE.0000000000001229

29 Department of Health and Human Services. Coronavirus update for Victoria – 18 November 2020. Media release. Melbourne: State Government of Victoria; 2020. Available at https://www.dhhs.vic.gov.au/coronavirus-update-victoria-18-november-2020

30 Bungard M, Ward M. As the day unfolded: Victorian arrivals to enter NSW hotel quarantine, national cabinet meets, Australia's death toll hits 266. *The Age*, 7 August 2020. Available at https://www.theage.com.au/national/coronavirus-updates-live-victorian-arrivals-to-enter-nsw-hotel-quarantine-national-cabinet-to-meet-australia-s-death-toll-stands-at-255-20200807-p55jek.html?post=p50ysi

31 Morris L. Coronavirus in Italy fills hospital beds and turns doctors into patients. *The Washington Post*, 4 March 2020. Available at https://www.washingtonpost.com/world/europe/coronavirus-in-italy-fills-hospital-beds-and-turns-doctors-into-patients/2020/03/03/60a723a2-5c9e-11ea-ac50-18701e14e06d_story.html
32 Ives J, Greenfield S, Parry JM, Draper H, Gratus C, Petts JI, *et al*. Healthcare workers' attitudes to working during pandemic influenza: a qualitative study. *BMC Public Health* 2009; 9: 56. doi:10.1186/1471-2458-9-56
33 Seale H, Leask J, Po K, MacIntyre CR. "Will they just pack up and leave?" – attitudes and intended behaviour of hospital health care workers during an influenza pandemic. *BMC Health Serv Res* 2009; 9: 30. doi:10.1186/1472-6963-9-30
34 Shaw KA, Chilcott A, Hansen E, Winzenberg T. The GP's response to pandemic influenza: a qualitative study. *Fam Pract* 2006; 23(3): 267–72. doi:10.1093/fampra/cml014
35 Thorne L. Victoria could lose more than 300,000 jobs in 2020 due to coronavirus pandemic, report says. *ABC News*, 10 September 2020. Available at https://www.abc.net.au/news/2020-09-10/melbourne-victoria-economy-jobs-hit-from-coronavirus-modelled/12648320
36 Jun J, Tucker S, Melnyk BM. Clinician mental health and well-being during global healthcare crises: evidence learned from prior epidemics for COVID-19 pandemic. *Worldviews Evid Based Nurs* 2020; 17(3): 182–4. doi:10.1111/wvn.12439
37 Brooks SK, Weston D, Greenberg N. Psychological impact of infectious disease outbreaks on pregnant women: rapid evidence review. *Public Health* 2020; 189: 26–36. doi:10.1016/j.puhe.2020.09.006
38 Department of Health and Human Services. Clinical guidance and resources – coronavirus (COVID-19): maternity and newborn. Melbourne: State Government of Victoria; 2021. Available at https://www.dhhs.vic.gov.au/clinical-guidance-and-resources-covid-19
39 De Kock JH, Latham HA, Leslie SJ, Grindle M, Munoz S-A, Ellis L, *et al*. A rapid review of the impact of COVID-19 on the mental health of healthcare workers: implications for supporting psychological well-being. *BMC Public Health* 2021; 21: 104. doi:10.1186/s12889-020-10070-3
40 Young KP, Kolcz DL, O'Sullivan DM, Ferrand J, Fried J, Robinson K. Health care workers' nental health and quality of life during COVID-19: results from a mid-pandemic, national survey. *Psychiatr Serv* 2021; 72(2): 122–8. doi:10.1176/appi.ps.202000424
41 Department of Health and Human Services. Help and support for healthcare workers – coronavirus (COVID-19). Melbourne: State Government of Victoria; 2020. Available at https://www.dhhs.vic.gov.au/help-and-support-healthcare-workers-coronavirus-covid-19