

ORIGINAL RESEARCH

Mental health and well-being impacts of COVID-19 on rural paramedics, police, community nurses and child protection workers

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Abstract

Objective: To investigate the impact of COVID-19 on the mental health and well-being of rural paramedics, police, community nursing and child protection staff.

Method: An online survey was distributed to investigate the sources of stress and support across individual, task and organisational domains.

Setting and Participants: The survey was completed by 1542 paramedics, police, community nurses and child protection workers from all states and territories of Australia. This study describes the data for the 632 rural participants.

Main outcome measures: The main measures of well-being were the Public Health Questionnaire (PHQ9), the Generalised Anxiety Disorder (GAD7), the Maslach Burnout Inventory (MBI), workplace engagement, intention to quit and COVID-19-related stress.

Results: The mean depression and anxiety scores were 8.2 (PHQ9) and 6.8 (GAD7). This is 2–3 times that found in the general community. Over half (56.1%) of respondents showed high emotional exhaustion (burnout). The emotional exhaustion, depersonalisation and personal accomplishment mean scores were 28.5, 9.3 and 34.2, respectively. The strongest associations with burnout and psychological distress were workload, provision of practical support, training and organisational communication. A significant proportion of respondents were seriously considering quitting (27.4%) or looking for a new job with a different employer (28.5%) in the next 12 months.

Conclusions: COVID-19 has increased the workload and stress on rural front-line community staff. The major sources of stress were related to organisations' responses to COVID-19 and not COVID-19 per se. The data suggest the most effective mental health interventions are practical and preventive, such as firstly ensuring fair and reasonable workloads.

KEYWORDS

depression, management, mental health, occupational health and safety, workforce

1 | INTRODUCTION

The high prevalence of depression, anxiety and work-place burnout in hospital-based health workers has been well documented in previous research.¹⁻³ There is also research documenting high rates of depression and burnout in other health and human service workers such as paramedics,⁴⁻⁹ police¹⁰⁻¹³ and child protection workers^{14,15} before COVID-19. These data suggest that even in normal times, front-line essential human service roles often bring challenges to individual well-being in the workplace.

The emergence of COVID-19 has brought new and additional challenges to the work life of health and human service staff. The mental health impacts of COVID-19 have been described on the general population^{16,17} and hospital-based health workers in Australia¹⁸ and overseas.^{8,19-22} However, this research focused on staff working in major metropolitan hospitals, not on staff required to go and work out in the community.

Service disrupters such as pandemics, floods, droughts and fires not only bring their own mental health demands on communities and workers,²³ but they also put pressure on leadership and organisations.²⁴ Crises and disasters require rapid deployment and redeployment of personnel and resources. In addition, they necessitate ensuring effective two-way lines of communication²⁵ with the front line to be established and maintained. Further, each organisation needs to work with other front-line and first responder agencies to provide an effective, coordinated response. For service managers, COVID-19 brings all these challenges and many more. However, unlike fires or floods, which are usually over in days, weeks or at most, a few months, COVID-19 has been prolonged and enduring. Further, it has necessitated that professions with limited experience of infection control procedures, such as police and child protection workers, are expected to deal with this threat to their health and the health of their family, friends and colleagues.

Much of the research into the mental health impacts of demanding work focuses only on individual-level factors.²⁶ A comprehensive approach to researching workplace stress and well-being should consider 3 key domains: the individual, the nature of the work and the organisation. These factors all interact dynamically within the current political, environmental, societal, technological, ethical and legal²⁷ context. Individual factors can include a person's resilience, skills, training, trauma history, personality and family status. The task factors include the characteristics of the work required. For instance, different professions, such as airline pilots, librarians and paramedics, undertake vastly different work tasks. Organisational factors include resource and equipment availability, staffing ratios, training, support, procedural guidance, resource provision and relationships with other agencies.

What is already known on this subject:

- COVID-19 has resulted in additional stress for health and hospital-based workers
- This additional stress is associated with significantly elevated levels of depression, anxiety and burnout in hospital-based staff
- Studies of front-line community-based staff before COVID-19 reported high levels of depression, anxiety and burnout for these workers

What this study adds:

- The mental health impacts for rural front-line community staff are worse than hospital-based staff
- The major stress related to worker mental health and well-being are just not COVID-19-related per se, but organisations' response (or lack of) to COVID-19 demands, resulting in an expansion of work, increased workload, a lack of practical support and poor organisational communication processes
- The high levels of burnout and intention to quit indicate a foreseeable future rural health workforce crisis

This study is the first in Australia to research the impact of COVID-19 on the well-being of rural essential human service professionals required to work out in the community. Each of these professions shares the work role of providing essential public services across a variety of community settings, such as private residences, people's workplaces and leisure environments such as parks and other recreational settings. The nature of working in these community settings is that it involves working in unpredictable and dynamic environments. The study investigated individual and organisational factors on perceived stress and workplace well-being, and perceptions of organisational processes during COVID-19, and their impact on mental health and workplace well-being.

2 | METHOD

2.1 | Study design

The study uses quantitative analysis of cross-sectional survey research.

2.2 | Settings and sampling

The participants were 632 rural paramedics, police, community nurses and child protection workers. Police were included in this research because in response to COVID-19, they were called on to monitor and enforce public health orders. Hence, in this respect, police provided a vital part of the health response to COVID-19. This sample comprises the rurally based staff from a larger national study of the impact of COVID-19 on front-line staff.²⁷

2.3 | Outcomes and measurement

A questionnaire survey was designed to investigate the level of stress, the sources of stress and the mental health impacts of stress. Questions measured demographic data, work role, family circumstances, sources of stress and sources of support. The survey also included several free field text boxes inviting participants to share their experiences of the impact of COVID-19. The analysis of these qualitative data has been previously reported.²⁸

2.3.1 | Standardised psychometric scales

Depression was assessed using the Public Health Questionnaire (PHQ9). Each of the 9 items of the PHQ9 corresponds to one of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5)²⁹ major depression criteria.¹⁶ Research has demonstrated its unidimensionality,³⁰ and it is well normed for the general population.³¹ Participants are asked 'how often over the last 2 weeks' have they felt each of the depressive symptoms. The response options are 'not at all', 'several days', 'more than half the days' and 'nearly every day', scored as 0, 1, 2 and 3, respectively. The total possible score is 27. The standardised cut-off scores for 'minimal', 'mild', 'moderate', 'moderately severe' and 'severe' depression are presented in Table 2. The PHQ9 has very good psychometric properties.³² In this sample, the Cronbach alpha was 0.95.

Anxiety was assessed using the Generalised Anxiety Disorder Scale (GAD7). The GAD7 items match the main diagnostic criteria of generalised anxiety in the DSM-5. Respondents are asked 'how often in the last two weeks have they been bothered by' each of the main 7 symptoms of anxiety. The response options are 'not at all', 'several days', 'more than half the days' and 'nearly every day'. The responses are scored 0, 1, 2 or 3 with a maximum score of 21. The total anxiety scores are classified as 'minimal'

'mild', 'moderate' and 'severe' anxiety. The cut-off scores are presented in Table 2. Used extensively in research, the psychometric properties of the GAD7 are strong.³³ The Cronbach alpha in our sample was 0.96.

Burnout was measured using the Maslach Burnout Inventory (MBI).⁶ The MBI is a 22-item scale with 3 dimensions: emotional exhaustion (EE), depersonalisation (DP) and personal accomplishment (PA). Each item is scored across a 7-point scale. The EE dimension assesses the feelings of being emotionally overextended and exhausted. The DP scale measures the extent to which a worker becomes desensitised and loses feeling and empathy for the recipients of one's service. The PA scale measures the feeling of achievement and professional and PA in one's work. High scores on the EE and DP scales, and low scores on the PA scale are indicative of burnout. The MBI is used extensively in research and has high reliability and validity. The MBI scales have standardised cut-off subscale scores for 'low', 'moderate' and 'high' burnout. These cut-offs are presented in Table 2. The Cronbach alpha of the MBI in this sample was 0.816.

Workplace engagement was measured using the Intellectual, Social, Affective (ISA) engagement scale.³⁴ This is a 9-item scale premised on a three-dimensional view of engagement: 'intellectual', 'social' and 'affective'. Together, the indexed score provides an indication of engagement for each person. A 7-point Likert scale 'strongly disagree' to 'strongly agree' was used. The maximum average score is 7. Employers aim for a high score of 6-7. Very low scores 1-2 suggest a lack of engagement. Three other scales examined the alignment of engagement with task performance, organisational citizenship behaviour (OCB) and turnover intentions. Task performance was measured using the Janssen and van Yperen 5-item scale.³⁵ Responses on this measure are scored on a 7-point Likert scale (1) 'strongly disagree' to (7) 'strongly agree'. OCB was measured using Lee and Allen's 8-item scale.³⁶ Responses for each question are rated on a 7-point scale (1) 'never' to (7) 'daily'. Turnover intentions were measured using Boroff and Lewin's 2-item intention-to-quit scale³⁷ where items are rated on a 7-point Likert scale (1) 'strongly disagree' to (7) 'strongly agree'.

2.3.2 | Measures of COVID-19-related impact and stress

The survey asked respondents to rate the impact of COVID-19 on their lives, and the degree of stress due to COVID-19 on a 7-point scale ranging from 1 (no impact/additional stress) to 7 (significant impact/additional stress).

2.3.3 | Demographic and personal characteristics

In addition to standard demographic data, the survey included categorical questions related to the impact of COVID-19, such as working from home, school-aged children at home, chronic health conditions, disability, bushfire affected, additional COVID-19 tasks, provision of COVID-19-related training, role (front line/indirect), team size and years in the organisation.

2.3.4 | Work-related factors

The survey also explored respondents' experience of work using several continuous variables. These rated workload pre- and post-COVID-19 0 (none), 50 (fair and reasonable) and 100 (excessive). Respondents were also asked to rate COVID-19 preparedness, overall organisational support, personal protective equipment (PPE) provision and satisfaction with organisational communication on a 7-point scale ranging from 1 (low), 4 (moderate), to 7 (high).

2.4 | Method and data collection procedure

An online survey was developed using the *Qualtrics* platform. The survey was co-constructed with organisations who agreed to partner in the research. The partners comprised 3 professional organisations and 2 government service providers. A base version was created, which was then adapted to suit the 4 front-line cohorts (ie paramedics, police, community health and child protection staff), specifically accommodating the nuanced terminology used in these sectors. Before distribution, the surveys were pilot-tested through contacts of partner organisations and the research team. Any issues relating to terminology or survey flow were addressed.

The survey weblinks were distributed via partner organisations to their individual members and staff via direct email and online newsletters. The weblink ensured data were securely and anonymously collected directly by the research team. Two reminders were sent to the respondents through the partner organisations, and data were collected within one month of the launch of the survey.

From a technical standpoint, the surveys were designed (based on input from the partners) to be compatible across various platforms (PCs, smartphones and tablets). Keeping in mind the nature of front-line work, the surveys could be completed across multiple sittings. This functionality allowed front-line staff to pause and return to their survey.

2.5 | Analysis

After data collection, raw data were extracted from Qualtrics in various formats, for example IBM SPSS Statistics and MS Excel. Thorough data cleaning was conducted; for instance, checks were carried out for data relevancy, erroneous entries and out-of-range values, among others. Cases with missing data are excluded from our analysis. Boxplots are used to examine the distributions of the variables; observations that are 3 times greater than the interquartile range of the dataset are deemed to be extreme. Using this approach, none of the cases were identified as outliers.

2.6 | Ethics approval

This project was considered and approved by the Charles Sturt University Human Research Ethics Committee (approval protocol number: H20183). The survey was developed and conducted as per the university's ethical guidelines. It was voluntary, and a respondent was free to quit at any time. Respondent confidentiality was maintained throughout the survey. The researchers had no access to any identifiable information (including IP addresses), and data were analysed in an aggregated manner.

3 | RESULTS

3.1 | Sociodemographic and other characteristics of participants

Of a total of 1542 respondents to the online survey, 632 (44.6%) were from rural settings. Table 1 presents key demographic data for the rural respondents. A high percentage of the rural sample (87%) were involved in direct service delivery, and the vast majority came from NSW. The geographical distribution reflects that found in the rural workforce generally. A large percentage (55%) of the sample were older than 45 years, a high percentage of respondents were full-time employees, and 74% had been working in their current organisation for over 10 years.

3.2 | Participants' mental health and well-being outcomes

As shown in Table 2, the levels of depression, anxiety and burnout were high. The mean (PHQ9) depression scores were 8.16 (SD 6.47) with 16.6% scoring in the 'moderately severe' or 'severe' range. The mean anxiety (GAD7) score was 6.79 (SD 5.69), and the proportion placed in the

TABLE 1 Demographics of regional front-line workers

Sociodemographic variables	n	%
Service cohorts		
Paramedics	229	47.16
Child protection workers	129	20.35
Community nurses	59	9.31
Police	147	23.18
Sex		
Male	278	47.77
Female	297	51.03
Prefer not to say	3	0.51
Other	4	0.69
Age		
18-25 years	17	2.92
26-35 years	96	16.49
36-45 years	148	25.43
46-55 years	171	29.38
>55 years	147	25.26
Prefer not to say	3	0.52
Geographical areas of employment		
Regional	196	30.91
Large rural	139	21.92
Med rural	101	15.93
Small rural	167	26.34
Remote	56	8.83
Very remote	30	4.73
State/territory		
New South Wales	422	78.14
Victoria	37	6.85
Queensland	19	3.52
Tasmania	7	1.30
Northern Territory	31	5.74
South Australia	9	1.67
Australian Capital Territory	5	0.93
Western Australia	10	1.85
Work role		
Front-line service provision	210	73.68
Front-line manager	38	13.33
Middle management	9	3.16
Executive management	1	0.35
Education/training	6	2.11
Policy/research/analysis	3	1.05
Other	18	6.32
Employment status		
Part-time	39	13.54
Full-time	247	85.76

(Continues)

TABLE 1 (Continued)

Sociodemographic variables	n	%
Volunteer	2	0.70
Qualifications		
Postgraduate degree level	57	20.08
Bachelor degree level	105	36.97
Diploma and advanced diploma level	92	32.39
Certificate level IV	12	4.23
Certificate level III	5	1.76
Year 12	6	2.11
Year 10	7	2.46
Years of service		
Under 1 year	4	0.56
1-3 years	60	8.37
4-6 years	62	8.65
7-9 years	59	8.23
10 years and over	532	74.2

‘moderate’ and ‘severe’ range for anxiety was 17.1%. The mean burnout (MBI) subscale scores for EE, DP and PA were 28.5 (SD 15.42), 9.3 (SD 8.36) and 34.2 (SD 8.87), respectively.

3.3 | Sources of stress and sources of support

Table 2 also illustrates that the level of overall impact and stress on COVID-19 was high, with average impact and stress scores of 5.8 (SD 1.39) and 5.1 (SD 1.71) (max 7). The main areas impacted by COVID-19 were family, work, social life, and travel. Mental health impact rated 5th with 7% of the sample listing this as a major area of concern. This is compared with 75.7% of respondents who reported the requirement to do additional work and a significant increase in workload due to COVID-19. This was on top of an already high pre-COVID-19 workload (35% higher than considered fair and reasonable).

The data relating to PPE indicate scores around the mid-point with mean rating scores of 4.4 and 6.2 (max score = 10) for PPE-related anxiety and PPE availability.

3.4 | Workplace engagement measures

As shown in Table 3, the workload prior to COVID-19 was already rated much higher than considered reasonable, this increased further post the emergence of COVID-19. The average score on task performance (M

TABLE 2 Psychological distress levels of rural front-line workers

Mental health measures	Mean (SD)	N (%)	Range (poss. range)
MBI emotional exhaustion			
High (≥ 27)	28.49 (15.42)	174 (56.1)	0-54 (0-54)
Moderate (17-26)		103 (33.2)	
Low (0-16)		33 (10.6)	
MBI depersonalisation			
High (≥ 13)	9.32 (8.36)	97 (31.6)	0-30 (0-30)
Moderate (7-12)		61 (19.9)	
Low (0-6)		149 (48.5)	
MBI personal accomplishment ^a			
High (0-31)	34.23 (8.87)	109 (35.3)	7-48 (0-48)
Moderate (32-38)		86 (27.8)	
Low (≥ 39)		114 (36.9)	
Depression (PHQ9)			
Minimal (0-4)	8.16 (6.47)	93 (33.0)	0-27 (0-27)
Mild (5-9)		98 (34.8)	
Moderate (10-14)		44 (15.6)	
Moderately severe (15-19)		26 (9.2)	
Severe (20-27)		21 (7.4)	
Anxiety (GAD7)			
Minimal (0-4)	6.79 (5.69)	122 (43.4)	0-21 (0-21)
Mild (5-9)		83 (29.5)	
Moderate (10-14)		39 (13.9)	
Severe (15-21)		37 (13.2)	
COVID-19 impact on work ^a	5.80 (1.39)		1-7 (1-7)
COVID-19-related stress ^a	5.06 (1.73)		1-7 (1-7)

Abbreviation: MBI, Maslach Burnout Inventory.

^aLow scores on PA are indicative of burnout.

^b1 = strongly disagree; 7 = strongly agree.

^c1 = no additional stress; 7 = significant additional stress.

6, SD 1.08) was high, and within the range, employers would aim for in their workforce (Table 3). The scores on ISA engagement scale (M 5.1, SD 1.12) and organisational citizenship (M 4.15, SD 1.53) were lower than industry benchmarks. It is noteworthy that while respondents still showed high levels of task performance, their OCB and overall workforce engagement scores waned. These 3 factors usually show a strong direct connection. This unusual juxtaposition is reflected in the high proportion of respondents who indicated they would probably look for a new job with a different employer in the next 12 months (28.5%) or were seriously considering quitting (27.4%).

3.5 | Differences between metro and rural staff

The analysis of the demographic data of metro and rural respondents revealed the rural sample were older ($\% > 55$ years), more likely to have children at home, work in small teams and have fewer years in the current organisation. On all other variables, including the recent impact of bushfires, no significant between-group differences were apparent.

The mental health impacts of city-based respondents (853) and rural respondents ($n = 632$) were compared (Table 4). This analysis revealed significant differences in EE and PA scores. The mean EE score for rural respondents (28.49) was significantly higher than the city-based respondents (15.42). On the other hand, PA scores were significantly higher (low PA is associated with burnout). The level of satisfaction with COVID-19 training was higher for metro-based respondents. On all other variables, there were no significant differences apparent.

3.6 | The impact of personal factors and work factors on burnout, depression and anxiety

3.6.1 | Personal factors

The relationship between the mental health impacts of COVID-19 and personal individual factors was analysed (Table 5). This included demographic factors such as age and sex, and experiences such as exposure to other trauma or length of time working in the organisation. The analysis revealed that the mental health impact of COVID-19 was significantly higher for older (> 55 years) respondents. Previous impact by bushfires was related to higher levels of EE, and having school-aged children at home was associated with higher depression (PHQ9) scores.

3.6.2 | Work factors

Work-related factors appeared to have a significant association across many mental health outcome factors (Table 5). Workload, COVID-19-related training, COVID-19 preparedness, overall support from management, and satisfaction with communication from executive and management were significantly associated with higher scores on all the mental health outcome variables listed in Table 5. Additional work tasks and a lack of training were both associated with higher EE scores, and working from home reduced the reported COVID-19 impact and stress scores.

TABLE 3 Workplace factors of rural front-line workers

Workplace variables	Mean (SD)	N (%)	Range (Poss. range)
Workload			
Workload prior to COVID-19	69.06 (20.16)		2-100 (0-100)
Workload post-COVID-19	75.73 (23.15)		0-100 (0-100)
Performed additional work due to COVID-19			
Yes		319 (73.33)	
No		116 (26.67)	
Workplace health, safety and personal protective equipment (PPE)			
Anxious about avail. of PPE	4.33 (3)		1-10 (1-10)
Satisfaction level of PPE adequacy	6.2 (2.78)		1-10 (1-10)
Support and communication from employer and networks			
Overall adequate support from exec.	4.46 (1.88)		1-7 (1-7)
Adequate support from mgr.	4.59 (1.82)		1-7 (1-7)
Operational support from mgr.	4.65 (1.82)		1-7 (1-7)
Mgr. good source of support	4.49 (1.93)		1-7 (1-7)
Colleagues support	5.37 (1.36)		1-7 (1-7)
Family and friend support	5.47 (1.3)		1-7 (1-7)
Association support	4.58 (1.71)		1-7 (1-7)
Practical guidance provided	4.77 (1.62)		1-7 (1-7)
Satisfaction-level comm from exec.	4.24 (1.99)		1-7 (1-7)
Satisfaction-level information org. COVID-19 stress	3.73 (1.95)		1-7 (1-7)
Satisfaction with organisations consult with staff	2.93 (1.91)		1-7 (1-7)
COVID-19 preparedness	5.35 (2.6)		1-10 (1-10)
Overall satisfaction-level comm. from leadership team	5.37 (2.8)		1-10 (1-10)
Workplace engagement measures			
Workplace (ISA) engagement	5.1 (1.12)		1-7 (1-7)
Task performance	6 (1.08)		1-7 (1-7)
Organisational citizenship behaviour	4.15 (1.53)		1-7 (1-7)
Intention to quit	2.94 (2.29)		1-7 (1-7)
Will probably look for new job next year with diff employer		(28.5)	
Seriously considering quitting my current employer		(27.4)	
Thinking of leaving current job due to COVID-19 situation		(8.2)	

3.7 | Correlational analysis between mental health and workplace variables

To explore the relationship between work factors and mental health outcomes, a simple correlation analysis was carried out between the continuous workplace variables and main mental health outcome variables (Table 6). This analysis revealed significant associations between the mental health outcome measures and most of the organisational variables. The strongest correlations with EE were with satisfaction with leadership communication (-0.423), workload (0.411) and support from executive (-0.384). Similar associations were found between depression and satisfaction with support from executive

(-0.358), leadership communication (-0.352) and support from line manager (-0.314). The strongest correlation was between stress and workload (0.550).

4 | DISCUSSION

This is the first study to examine the mental health impacts of COVID-19 on community-based health and human service workers across rural Australia. The results found alarmingly high levels of depression, anxiety burnout and stress in rural front-line workers. These were strongly associated with workload, level of support from executive and satisfaction with the communication from executive.

TABLE 4 Rural/metro differences in worker mental health, workplace and personal factors

Panel A: Continuous variables	Rural		Metro		t-stat
	Mean	SD	Mean	SD	
Emotional exhaustion	28.49	15.42	25.96	14.76	-2.29**
Depersonalisation	9.32	8.36	9.93	7.84	1.02
Personal accomplishment	34.23	8.87	30.56	10.07	-5.4***
Depression (PHQ9)	8.16	6.47	8.27	6.27	0.22
Anxiety (GAD7)	6.79	5.69	6.81	5.79	0.03
COVID-19 impact	5.8	1.4	5.71	1.5	-1.01
COVID-19 stress	5.06	1.73	5.04	1.69	-0.11
COVID-19 workload	75.73	23.15	77.1	22.31	0.98
COVID-19 preparedness	5.35	2.6	5.33	2.51	-0.11
COVID-19 training/support	1.66	0.47	1.75	0.43	3.11***
Overall support	4.46	1.88	4.33	1.88	-0.98
Comms satisfaction	5.37	2.8	5.58	2.62	1.07
Panel B: Categorical variables	Rural		Metro		Chi-sq
	N	%	N	%	
Sex					
Female ^a	297	51.7	382	42.6	11.461***
Male ^a	278	48.3	514	57.4	
Age					
<55 ^a	432	74.6	777	86.2	31.852***
>55 ^a	147	25.4	124	13.8	
Chronic health cond. or disability					
Yes	62	9.8	107	11.8	1.538
No	572	90.2	801	88.2	
Bushfire impact					
Yes	201	45.0	296	42.5	0.658
No	246	55.0	400	57.5	
Work from home					
Yes	226	55.3	382	60.4	2.749*
No	183	44.7	514	39.6	
Additional tasks					
Yes	319	73.3	473	71.0	0.697
No	116	26.7	193	29.0	
School-aged children at home					
Yes ^a	115	18.1	223	24.6	8.992***
No ^a	519	81.9	685	75.4	
Team size					
Between 1-5 ^a	41	14.5	31	7.2	10.202***
Equal or >6 ^a	241	85.5	401	92.8	
Years in organisation					
<7 ^a	60	21.3	67	15.5	3.881**
>7 ^a	222	78.7	365	84.5	

Note: The *t*-statistic tests for the difference in means for the variable of interest grouped by location (Rural/Metro). The chi-squared statistic tests the null hypothesis of no association between the categorical variable of interest and location (Rural/Metro).

***Significant at the 1% level (2-tailed); **Significant at the 5% level (2-tailed); *Significant at the 10% level (2-tailed).

^aPairwise comparison of column proportions for a given row, which is statistically significant at the 5% level using the *z*-test.

TABLE 5 Differences in means between sociodemographic characteristics and workplace factors of rural front-line workers

Variables	Burnout (EE)	Depression (PHQ9)	Anxiety (GAD7)	COVID-19 impact	COVID-19 stress
	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)
Individual factors					
Sex					
Male	28.3 (15.8)	8.5 (6.4)	7 (5.8)	5.8 (1.6)	5 (1.8)
Female	28.6 (15.3)	7.9 (6.6)	6.6 (5.6)	5.8 (1.2)	5.1 (1.7)
<i>t</i> -statistic	−0.18	0.67	0.64	−0.23	−0.41
Age					
<55	30.1 (14.7)	8.7 (6.4)	7.4 (5.7)	5.9 (1.3)	5.2 (1.7)
>55	24.3 (16.5)	6.9 (6.6)	5.3 (5.4)	5.5 (1.5)	4.8 (1.9)
<i>t</i> -statistic	−2.84**	−2.02*	−2.77**	−2.69**	−1.8
Chronic health or disability					
Yes	29 (16.1)	8.1 (6)	6 (1.5)	5.9 (1.2)	5.3 (1.6)
No	28.4 (15.4)	8.2 (6.5)	6.9 (5.8)	5.8 (1.4)	5 (1.7)
<i>t</i> -statistic	0.20	−0.10	−0.77	0.81	1.29
School-aged kids at home					
Yes	29.9 (14.7)	8.9 (6.4)	7.5 (1.6)	5.9 (1.3)	5.1 (1.8)
No	27.6 (15.8)	7.6 (6.5)	6.4 (5.4)	5.8 (1.4)	5 (1.7)
<i>t</i> -statistic	1.31	1.67	1.56	1.11	0.29
Bushfire impact					
Yes	30.4 (14.2)	8.8 (6.6)	7.4 (5.6)	5.9 (1.4)	5.2 (1.7)
No	26.9 (16.3)	7.6 (6.3)	6.3 (5.7)	5.7 (1.4)	5 (1.8)
<i>t</i> -statistic	2.04*	1.64	1.62	1.07	1.38
Work factors					
COVID-19 workload					
1st quartile	14.7 (9.7)	1.5 (1.5)	1.2 (1.4)	3.8 (1.6)	3.2 (1.5)
4th quartile	44.3 (8.7)	16.9 (5.8)	14.1 (4.6)	6.9 (0.1)	6.8 (0.5)
<i>t</i> -statistic	−16.70**	−18.07**	−19.97**	−16.10**	−19.92**
Additional tasks					
Yes	29.9 (14.9)	8.5 (6.5)	7 (5.7)	5.9 (1.3)	5.3 (1.6)
No	24.4 (16.2)	7.3 (6.3)	6.1 (5.7)	5.5 (1.6)	4.6 (1.9)
<i>t</i> -statistic	2.72**	1.32	1.21	2.44*	3.66**
COVID-19 preparedness					
1st quartile	9.4 (8.7)	1.4 (1.4)	1.3 (1.9)	3.8 (1.6)	2.6 (1.2)
4th quartile	46.6 (4.9)	16.8 (5.3)	14.5 (4.1)	7.1 (0.1)	6.9 (0.2)
<i>t</i> -statistic	−31.32**	−23.04**	−24.34**	−19.47**	−37.96**
COVID-19 training/sup					
Yes	25.6 (15.4)	7.4 (6.3)	5.9 (5.6)	5.9 (1.2)	4.9 (1.8)
No	30.3 (15.1)	8.7 (6.5)	7.3 (5.7)	5.8 (1.4)	5.2 (1.7)
<i>t</i> -statistic	−2.62**	−1.58	−1.95	0.33	−1.47
Overall support					
1st quartile	9.9 (7.9)	1.6 (1.7)	0.9 (1.2)	3.8 (1.6)	2.7 (1.2)
4th quartile	46.2 (5.5)	16.5 (5.6)	14.5 (4.2)	7 (0.2)	6.9 (0.2)

(Continues)

TABLE 5 (Continued)

Variables	Burnout (EE)	Depression (PHQ9)	Anxiety (GAD7)	COVID-19 impact	COVID-19 stress
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
<i>t</i> -statistic	−32.61**	−20.91**	−25.41**	−19.69**	−35.34**
Comms satis					
1st quartile	10.4 (7.9)	1.6 (1.5)	1.3 (1.7)	4.0 (1.5)	2.6 (1.1)
4th quartile	45.6 (6.6)	16.7 (5.6)	14.6 (4.3)	7.1 (0.1)	6.9 (0.4)
<i>t</i> -statistic	−29.63**	−21.38**	−23.27**	−21.14**	−36.46**
Front line					
Yes	29.1 (15.2)	8.4 (6.6)	6.9 (5.7)	5.8 (1.3)	5.1 (1.6)
No	25.9 (16.0)	6.7 (5.6)	5.8 (5.4)	5.8 (1.5)	5 (1.7)
<i>t</i> -statistic	1.46	1.63	1.14	0.62	0.93
Team size					
1-5 staff	27.5 (15.2)	8 (7.0)	6.1 (5.3)	5.4 (1.5)	4.9 (1.8)
>5	28.7 (15.3)	8.1 (6.3)	6.8 (5.6)	5.9 (1.3)	5.1 (1.7)
<i>t</i> -statistic	0.45	0.09	0.84	2.04**	0.75
Work from home					
Yes	28 (15.8)	7.8 (6.4)	6.4 (5.7)	5.7 (1.4)	4.9 (1.8)
No	29.5 (14.6)	8.3 (6.4)	7.1 (5.5)	6 (1.3)	5.3 (1.6)
<i>t</i> -statistic	−0.83	−0.74	−0.98	−2.09*	−2.58*
Years in organisation					
<7	26.5 (15.9)	7.4 (6.8)	6.7 (6)	5.7 (1.6)	5 (1.7)
>7	29.3 (15.2)	8.4 (6.4)	6.8 (5.6)	5.9 (1.2)	5.1 (1.8)
<i>t</i> -statistic	1.42	1.03	0.20	1.59	0.78

Note: ** Significant at the 1% level (2-tailed); *significant at the 5% level (2-tailed).

TABLE 6 Relationship between work factors and burnout, psychological distress and stress

	Burnout			Psych distress		Stress	
	EE	DP	PA	PHQ9	GAD7	COVID-19 impact	COVID-19 stress
Workload	.411**	.175**	−.058	.282**	.304**	.286**	.550**
PPE avail anxiety	.323**	.238**	−.005	.236**	.295**	.269**	.433**
PPE satisfaction	−.109	−.176**	.091	−.067	−.077	−.125*	−.123*
Support from executive	−.384**	−.372**	.271**	−.358**	−.329**	−.172**	−.302**
Support from line manager	−.361**	−.282**	.237**	−.314**	−.277**	−.173**	−.239**
Org consultation	−.326**	−.307**	.146*	−.234**	−.246**	−.201**	−.223**
Informal support	−.264**	−.155*	.136*	−.248**	−.245**	−.075	−.187**
Satisfaction with leadership coms	−.423**	−.317**	.242**	−.352**	−.310**	−.161**	−.308**

Note: Abbreviations: EE, emotional exhaustion; DP, depersonalisation; PA, personal accomplishment.

**Correlation is significant at the 1% level (2-tailed). *Correlation is significant at the 5% level (2-tailed).

4.1 | Mental health and burnout

The average depression scores were 2½ times higher than reported in the general community³¹ and 49% higher than reported in hospital-based staff.^{18,22} Even more concerning

was the proportion of participants who scored in the 'severe' and 'moderately severe' range of depression. The percentage of respondents in these ranges (16.5%) was 10 times higher than reported in the general population and 53% higher than hospital-based workers. A pre-COVID-19

study of emergency service personnel using a different measure of psychological distress (K10) reported 9% with very high psychological distress.²⁶

The pattern for anxiety was similar, with mean anxiety scores twice that reported in the general population³³ and 23% higher than hospital-based staff.¹⁸ Again, the proportion of respondents scoring in the moderate and severe range of anxiety (27.1%) was concerning. This was 4 times higher than the proportion in the general population³³ and 32% higher than found in hospital-based staff.^{18,38}

The MBI burnout levels were high for EE, DP and PA. The mean EE score (28.5) was exactly 50% higher than similar occupational groups pre-COVID-19¹² and 24% higher than hospital-based workers^{19,20} during COVID-19. As with other measures of psychological distress, perhaps the most important statistics are the proportion of respondents scoring in the 'high' range for burnout. In our sample, 56.1% scored in the high range for EE. This proportion is 52% higher than for similar groups pre-COVID-19 and 30% higher than hospital-based workers.

Different patterns were evident for DP and PA. While the mean DP scores were slightly higher than for similar groups pre-COVID-19¹⁴ (13% higher) and hospital-based workers^{19,39} (37% higher), the proportion of respondents scoring high levels of burnout on this subscale was the same or slightly less than the comparison groups. For PA, our respondents' mean scores were almost identical to hospital-based workers^{19,39} and only slightly better than similar occupational groups pre-COVID-19.^{11,40} Similarly, the proportion of our respondents with low PA (high burnout) was almost identical to similar occupations¹² and hospital-based workers.¹⁹

In this respect, it is worth considering how rural workers in Australia compared with those based in major metropolitan cities. With respect to the mental health variables, the only significant differences between the metro and rural cohorts were higher EE and higher PA. This is somewhat surprising given the incidence of COVID-19 cases was much lower and, in many cases, non-existent in regional and rural communities. The higher levels of exhaustion might be related to existing workforce shortages, working in smaller teams and a broader scope of practice. It might be related to the increases in workload, in areas where the capacity for support and relief, and ability to work from home were more limited. This would also account for the better of PA mean scores. Rural staff are more connected to the communities they serve, and therefore perhaps better able to appreciate their contribution to the local community. Future research could examine these factors further and help guide the best form of support to rural staff in the post-COVID-19 work environment.

4.2 | Workplace factors

Unlike many studies of this type, which tend to focus only on individual-based factors, this research considered the role of organisational factors in causing, transmitting and mitigating stress in the workforce. The results of this research suggest that organisational factors have the strongest relationships with the well-being of staff. Workload showed the strongest associations with burnout, depression and stress. For instance, respondents reported that their workload pre-COVID-19 was 38% above that considered 'fair and reasonable' and this increased to 51% above what respondents considered fair during COVID-19. In this context, overall satisfaction with communication from their leadership team and satisfaction with support from executive both scored lowly. Similarly, the level of satisfaction with the provision of information about COVID-19 was low, as was satisfaction with the level of consultation with staff on the front line. COVID-19-related training and COVID-19 preparedness also showed strong associations with burnout. This is telling, as the strongest statistical associations with workplace burnout (EE) were increased workload, a lack of support from executive and dissatisfaction with communication from executive. Similarly, the strongest associations with depression (PHQ9) were with a lack of support from executive and dissatisfaction with leadership communication.

The relationship between workplace engagement, organisational citizenship and task performance is noteworthy. Typically, task performance and OCB should be positively associated with engagement scores. These data indicate that while task performance remained high, workplace engagement and organisational citizenship have waned. This is accompanied by a high proportion of respondents seriously considering quitting (27.4%) or intending to look for another job with a different employer (28.5%). Taken together with the PA scores on the MBI, this seems to indicate that while respondents felt they are carrying out their work tasks to a high level, their faith in the organisation has suffered. Interestingly, only 8.2% of the sample indicated quitting due to the COVID-19 situation. This suggests that the stress of COVID-19 per se is not the main issue, but it is the organisation's response to the COVID-19 situation and ongoing demands.

The level of intention to quit is alarming for regional and rural areas already struggling with workforce shortages of skilled labour.⁴¹ It is especially pertinent in small teams and communities where the quarantining or loss of relatively few staff can necessitate the closure of entire units or wards. Due to COVID-19, this has already occurred in some rural hospitals. If the intention to quit

is realised once the economy and employment opportunities improve post-COVID-19, this will present a serious workforce challenge for rural health and human services.

The other implication of this research for workforce support and planning is the positive impact that work colleagues and the direct line manager can have on workplace well-being. After family and friends, colleagues and the direct line manager were the highest rated source of support during COVID-19. This would suggest the benefit of organisations prioritising and investing in equipping and empowering the front-line managers to support, and to be a trusted communication conduit for workers on the front line.

4.3 | Why the impacts on community workers would be higher than facility-based staff

There is ample evidence that COVID-19 has negatively impacted the mental health and workplace well-being of health workers.^{8,18-20,22,39} However, the mental health impacts in this sample were consistently worse than previously reported in hospital-based workers. This might be due to several reasons. The distinguishing feature of our participants was the requirement to leave their offices and work in the community. This entails going into fluid, dynamic and unpredictable environments with varying opportunities to identify and mitigate risk. The other point of difference is community workers are dealing with a rapidly changing work environment²⁸ subject to frequent changes of public health orders, which essential workers must work to and, if necessary, enforce. In these circumstances, community-facing workers often deal with community member non-compliance, which in some instances escalates to aggression. Unlike facility-based work, in situations of escalating behaviour, there are no backup support on hand or established processes to deal with this situation.

The major sources of anxiety were concern about PPE and fear of infection, especially fear of spreading infection to family or work colleagues. Child protection workers and police do not have experience and training in infection control. In addition, community-facing staff are working in environments with no infection control processes and no standard screening of service recipients, whereas patients visiting hospitals are screened, processed and required to comply with hospital guidelines before entry. These and other factors might account for the higher levels of anxiety and psychological distress in community front-line staff. However, further research in this area is warranted.

4.4 | Workforce support and management implications

The strongest association with burnout and psychological distress was workload. Provision of training, PPE and ensuring COVID-19 preparedness were also significant. Poor leadership communication, consultation and support from executive were other key factors associated with burnout. Qualitative research with this entire cohort (rural and metro respondents) revealed that ambiguous communication, contradictory communication, multiple messengers and excessive communication were major sources of stress and worker dissatisfaction.²⁷ This has significant implications for service managers and executives.^{27,28,42}

Research that focuses only on individual factors finds results related to individual characteristics and tends to recommend individual-based solutions.²⁶ The solutions typically include the introduction of mental health programs, increasing the availability of employee assistance programs and other psychological services. Not only does this risk blaming the (individual) victim, but based on the results of this study, it overlooks the most effective measures to enhance worker well-being. Research with child protection workers revealed that human service workers already have well-developed self-care strategies and coping styles, tailored to suit individual circumstances, and by and large, they do not want or require additional workplace mental health support.⁴³ The results of this study suggest the most effective workplace mental health interventions are practical and preventive: ensure reasonable workloads, provide practical support, consult with staff regarding their needs and provide unambiguous communication. Put together with the high level of satisfaction with support offered by respondents' direct line managers, and the need for clear, moderated communication, the data suggest the value of an enhanced focus on empowering and equipping front-line managers to respond and address local team needs as they arise.

4.5 | Limitations

Being a large cross-sectional study, this was a self-selecting sample. It is possible that those suffering most from COVID-19 were those more likely to complete the survey. Conversely, it might be those with the greatest workload (the major predictor of burnout) would not have time to carry out this discretionary task. In addition, not all respondents answered all questions. This is not entirely surprising given the nature of the sample and the nature of their work. Overall, the data and results from this study

align closely and logically with previous research in this area. However, a random stratified sampling process in future research in this area would help address these limitations.

The data from respondents across all professions and jurisdictions have been collated, consolidated and analysed to investigate the major outcome variables, and protect the confidentiality of individuals and organisations. This does limit the ability to investigate the impact of organisational factors on workplace well-being. Further, the data were collected between October and early December 2020. At this time, the public health orders and level of restrictions varied greatly between states and territories. Most respondents were from NSW (reflecting the employee profile of some of the research partner organisations). Given the relatively controlled nature of COVID-19 in NSW at this time, this might be expected to lessen, not increase the reported impacts. Nonetheless, the different COVID-19 status across states and territories during October-December 2020 would have introduced variance in the work and home circumstances of respondents.

The presence of depression does bring with it the predisposition to have a negative view of one's circumstances. Thus, it is possible that the relationship between psychological distress and perception of workplace factors is bidirectional, each affecting the other. Cross-sectional research is not capable of determining causality, only relationships.

5 | CONCLUSION

COVID-19 has resulted in expansion of work for front-line workers, and increased complexity and intensity of work. It has also led to high levels of stress, burnout, depression and anxiety in front-line community workers. This coincides with a high proportion of front-line workers seriously considering quitting their jobs. In the context of existing rural workforce shortages,⁴¹ the potential future rural workforce implications are concerning.

Human service workers usually have well-developed self-care strategies. COVID-19 has restricted access to many of the social, familial, exercise, recreational and collegial mechanisms of stress relief and support. However, the data suggest the most effective interventions to enhance and protect mental health of staff are practical and preventive. These can be implemented by senior managers and service executive. COVID-19, bushfires and other crises put pressure on organisational systems and require leaders to rise to the occasion.^{25,44} This study indicates an urgent need for senior managers to connect with the on-the-ground staff (virtually or

in person), to acknowledge their good work and seek to understand their needs and, if possible, to address these needs. The other side of this communication pipeline is to provide clear directions and procedural guidance. COVID-19 has resulted in rapidly changing work environments, so clear direction and support can help lessen the uncertainty and stress of changing work roles and demands. Most importantly, it requires leaders to manage workloads to a level that is fair and reasonable. This is perhaps the single most effective action to enhance the well-being of the workforce.

Australia already suffers rural health workforce shortages. The data on burnout and intention to quit suggest this workforce shortage might become much worse after COVID-19 unless organisations act soon to support the well-being of front-line community staff. These are the people who support us and provide essential community services in times of crisis. We must ensure we do all that is possible to support them.

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AUTHOR CONTRIBUTION

RR: Conceptualization; Formal analysis; Investigation; Methodology; Writing-original draft; Writing-review & editing. **AW:** Data curation; Formal analysis; Methodology. **SJ:** Conceptualization; Formal analysis; Writing-review & editing. **AN:** Conceptualization; Investigation; Methodology; Writing-review & editing. **CS:** Conceptualization; Writing-review & editing. **PO:** Conceptualization; Methodology; Writing-review & editing. **LB:** Conceptualization; Investigation; Writing-review & editing. **AD:** Methodology. **MF:** Conceptualization; Investigation.

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