

An exploration of mental health, stress and well-being concerns among health students undertaking rural placements in Australia during the early stages of the COVID-19 pandemic

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Abstract

Introduction: The emergence of COVID-19 in 2020 led to an increase in stressors for students on rural placements, but little is known about how this impacted their mental health and well-being.

Objective: To explore self-reported mental health, stress and well-being concerns among allied health, nursing and medical students who completed a scheduled University Department of Rural Health (UDRH)-facilitated rural placement in Australia between February and October 2020 (n = 1066).

Design: Cross-sectional design involving an online survey measuring mental health, stress and well-being concerns. The survey was distributed via email by the 16 UDRHs across Australia.

Findings: A total of 42.9%, 63.8% and 41.1% of survey respondents reported concerns about their mental health, levels of stress and well-being, respectively, during the early stages of the pandemic. Multiple logistic regression models found clinical training, course progression and financial concerns were predictive of negative mental health, increased stress and reduced well-being, while feeling connected was predictive of positive mental health, reduced stress and increased well-being.

Discussion: Universities, UDRHs and health placement sites all have a responsibility to support the mental health and well-being of students undertaking rural placements. This support needs to encompass strategies to reduce financial stress, protect learning opportunities and increase connectedness. Ensuring adequate resourcing and support for those providing rural placement opportunities will safeguard quality rural placements during times of pandemic disruption.

KEYWORDS

allied health, connection, medicine, nursing, support

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1 | INTRODUCTION

The available evidence suggests that immersive and positive training experiences in rural settings contribute to future rural practice.¹⁻³ Unfortunately, the emergence of the COVID-19 pandemic in 2020 was a time of great uncertainty for students on a rural health placement, with many students experiencing disruptions to their placements and increased stressors, including less client contact, an inability to gain and practice clinical skills, difficulties attaining adequate supervision, financial stress and feelings of social isolation.⁴⁻⁸ During this time, students voiced concern about these issues,⁶ but also noted the positive impact of support strategies.⁵ Little is known about how these factors might have influenced student mental health, stress and well-being while on a rural placement.⁹

Students in health care disciplines are vulnerable to poor mental well-being.^{10,11} Placement demands have been cited as an additional stressor that impacts well-being,¹² with high levels of anxiety and stress reported by health care students around placements.¹² Rural placements have the potential to further impact mental health by increasing financial stress and isolating students from their social support structures.^{8,13} These issues likely intensified during the emergence of the COVID-19 pandemic. In one Australian study surveying 297 medical students, a pandemic-induced deterioration of mental health was identified in 68% of respondents.¹⁴ In another Australian study surveying 124 medical students undertaking rural training during the early stages of the pandemic, it was found that 53% reported an increase in mental health challenges.

This study aimed to explore mental health, stress and well-being concerns and predictive factors among health students who completed a rural or remote placement in Australia during the early stages of the COVID-19 pandemic.

2 | METHODS

2.1 | Design

This study is part of a larger project that aimed to capture the perspectives of nursing, allied health and medical students who had a planned UDRH-facilitated rural or remote placement in 2020.^{4,6,8} The larger study employed a convergent mixed methods approach,¹⁵ comprising an online survey and semistructured interviews. This study only presents the cross-sectional quantitative data from the online survey.

What is already known on this subject?

- Health students are predisposed to poor mental health and well-being, with placement demands being cited as an impacting factor.
- Rural and remote placements have the potential to further impact mental health by increasing financial stress and removing students from their social support structures.
- The COVID-19 pandemic has caused a deterioration in health students' mental health, but support can positively impact well-being.

What this paper adds?

- Mental health concerns, stress and well-being decline were prevalent among allied health, nursing and medicine students undertaking rural or remote placements during the early stages of the pandemic.
- To protect student mental health and well-being during emerging pandemics, financial stress should be minimised, learning opportunities should be protected and support provided for students to graduate on time.
- Efforts to ensure students feel connected on placements during pandemic circumstances must be prioritised to help support mental health, well-being and reduce levels of stress among student clinicians.

2.2 | Ethics approval

This research received ethics approval from The University of Melbourne (ethics no. 2056941.1). Other participating universities (University of Tasmania, University of Newcastle, University of Queensland, University of Western Australia, La Trobe University, Flinders University and James Cook University) obtained ethics approval or registration from their own institutions as appropriate.

2.3 | Recruitment

All students with a UDRH-facilitated placement scheduled between February and October 2020 were invited to participate, via an email invitation that included a link to the online survey. These emails were sent by the 16 UDRHs across Australia between June and November

2020. Two follow-up emails were sent to each student, one a week after the initial email and another 2 weeks later. Participation in the survey was voluntary and completion implied consent.

2.4 | Data collection

Survey data were collected and managed using REDCap electronic data capture tools hosted at The University of Melbourne.¹⁶ The full survey comprised a total of 24 questions, eliciting demographic information and asking students about the impact of COVID-19 on their planned placement/s through a mix of rating, closed and open response options. A subset of these questions was analysed for the purpose of this study, and related specifically to mental health, stress, well-being, connectedness, clinical training, course progression and financial concerns, and placement experience (Appendix 1).

2.5 | Data analysis

Data were analysed using a combination of descriptive and inferential statistics. For descriptive analyses, categorical variables are presented as frequency (*n*) and per cent (%), while continuous variables are presented as mean (*M*) and standard deviation (*SD*).

Data were limited to those students who were able to complete their scheduled rural or remote placement during the study period. Multiple logistic regression was conducted to assess the ability of clinical training concerns, course progression concerns, financial concerns, connection during COVID-19, perceived placement, university and UDRH support, and perceived placement satisfaction to predict mental health, stress and well-being concerns.

Every variable included in the analysis was recoded into a dichotomous variable (except for age); Strongly disagree, disagree and neither agree or disagree were recoded into 0—did not agree, while agree and strongly agree were recoded into 1—agree.

3 | RESULTS

A total of 1505 survey responses were received, with 190 excluded from analysis due to missing data around the variables of concern. Of the 1315 responses with sufficient data, 1066 (81.1%) students indicated that they were able to undertake a rural or remote placement in some form and were included in this study. Their demographic characteristics are shown in Table 1.

TABLE 1 Characteristics of students who went on a rural or remote placement (*n* = 1066).

| | |
|--|------------|
| Gender, <i>n</i> (%) | |
| Female | 863 (84.0) |
| Male | 157 (15.3) |
| Non-binary | 7 (0.7) |
| Age, <i>M</i> (<i>SD</i>) | |
| | 27.1 (8.7) |
| Discipline, <i>n</i> (%) | |
| Nursing and midwifery | 523 (52.4) |
| Allied health | 387 (38.8) |
| Medicine | 75 (7.5) |
| Other | 13 (1.3) |
| Course level, <i>n</i> (%) | |
| Undergraduate | 886 (87.0) |
| Postgraduate | 132 (13.0) |
| Location whilst growing up, <i>n</i> (%) | |
| In a capital city | 350 (34.1) |
| In a regional or large centre | 260 (25.3) |
| In a rural town | 384 (37.4) |
| In a remote area | 33 (3.2) |
| Location whilst studying, <i>n</i> (%) | |
| In a capital city | 380 (37.0) |
| In a regional or large centre | 399 (38.9) |
| In a rural town | 228 (22.2) |
| In a remote area | 20 (1.9) |

3.1 | Student concerns and experiences

The frequency of relevant student concerns and experiences is shown in Table 2.

3.2 | Predictors of mental health, stress and well-being concern

The multiple logistic regression analyses found that for each outcome, the full model containing all predictors was statistically significant (Table 3). Clinical training, course progression and financial concerns were predictive of negative mental health, increased stress and reduced well-being, while feeling connected was predictive of positive mental health, reduced stress and increased well-being. Feeling supported by the university was also predictive of increased well-being. Each model correctly classified 65.3%, 66.7% and 67.0% of cases, respectively.

4 | DISCUSSION

Mental health, stress and well-being concerns were common; 42.9% of students reported concerns about their

TABLE 2 Concerns and experiences for students who completed a rural or remote placement.

| Survey question | Agree, n (%) |
|---|--------------|
| I have been concerned about my mental health during COVID-19 | 457 (42.9) |
| I have found the COVID-19 time stressful | 680 (63.8) |
| My well-being declined during COVID-19 | 438 (41.1) |
| I am concerned I am not getting enough clinical training due to COVID-19 | 485 (45.5) |
| I have concerns about graduating on time | 514 (48.2) |
| I was concerned about my financial situation during COVID-19 | 588 (55.2) |
| I have felt connected during COVID-19 | 357 (33.5) |
| During my placement, I felt supported by my supervisor and other clinicians | 923 (86.6) |
| During my placement I felt supported by my university | 646 (60.6) |
| During my placement I felt supported by the UDRH | 538 (50.5) |
| Overall, I was satisfied with my placement | 880 (82.6) |

mental health, 63.8% found the onset of the pandemic stressful and 41.1% indicated their well-being had declined. When compared to the general population, these incidence levels highlight the vulnerability of this cohort; Australian population data for 2020–2021 has shown that around 15% of Australians experience high or very high levels of psychological distress, while 21.4% had a 12-month mental disorder.¹⁷ Students were more likely to report mental health, stress and well-being concerns during the early stages of the pandemic if they also had concerns about a lack of clinical training due to the pandemic, not being able to graduate on time or their financial situation. This demonstrates that the concerns students voiced during the early stages of the pandemic regarding the sufficiency of their placement experiences and course progression,^{4–6,14,18} and increased financial stress^{8,18} are linked to poor mental health and well-being.

An important finding in this study was that ‘feeling connected’ during the early stages of the pandemic facilitated good mental health and well-being, and reduced stress. Loneliness has been linked with poor mental health, and the COVID-19 pandemic had a profound impact on feelings of isolation and loneliness in the general Australian population during its emergence.¹⁹ In Australia, the early COVID-19 public health response included restrictions to reduce social interactions to limit the spread; these public health orders prevented students on rural placements from moving around the local area, restricted duties and social activities during the placement, and meant students were often alone in student accommodation.⁶ Even in nonpandemic times, many health students on rural

placements are removed from their social supports and likely experience feelings of isolation and loneliness due to this, ensuring students are able engage with the rural community and placement could mitigate some of these concerns.^{6,13} However, COVID-19 likely added multiple barriers to achieving such connectedness.

4.1 | Limitations and future research

This study presents a snapshot in time of the mental health, stress and well-being concerns among nursing, allied health and medical students who undertook a rural or remote placement. Student responses are likely to change as the pandemic evolved. It is also difficult to determine the level to which the pandemic has impacted student well-being given baseline data are lacking. However, the results do suggest that the incidence of psychological distress was considerably higher than the general population. These data are also lacking in granularity, which impacts the study’s ability to make targeted recommendations. Future research should focus on collecting information about student well-being over time to ensure adequate baselines, use validated measures of mental health to enable comparison of the data to population norms and develop survey questions that allow the capturing of sufficiently granular data (without being burdensome). Final limitations include difficulties in determining the response rate to the survey, due to the variation in student support across the 16 participating UDRHs, as well as variations in when students were able to complete the survey. Some students completed it several months after the completion of their placement, while others completed the questionnaire in the final stages of, or shortly thereafter. Thus, recall biases are likely present.

4.2 | Implications

Universities, UDRHs and placement sites all have a responsibility to both understand the mental health and well-being of students on rural placements and provide support to ensure clinical and academic progress. Support might include strategies to reduce financial stress, protect learning opportunities, ensure timely graduation and increase connectedness. Each of these is likely to require multiple approaches and may become increasingly complex when placements and educational experiences are disrupted by unforeseen events, such as the COVID-19 pandemic. Ultimately, in times of disruption, ensuring students on rural health placements complete their clinical training and education in a timely manner, without a reduction in quality, will

TABLE 3 Multiple logistic regression analysis predicting mental health concern, stress and well-being decline for students who went on a rural or remote placement.

| | Mental health concern ^a | | Stress ^b | | Well-being decline ^c | |
|---|--------------------------------------|---------|--------------------------------------|---------|--------------------------------------|---------|
| | Odds ratio (95% confidence interval) | p | Odds ratio (95% confidence interval) | p | Odds ratio (95% confidence interval) | p |
| Age (years) | 0.98 (0.97–1.00) | 0.02* | 0.99 (0.98–1.01) | 0.30 | 0.98 (0.96–1.00) | 0.01* |
| Gender (male) | 1.09 (0.75–1.58) | 0.67 | 0.65 (0.45–0.93) | 0.02* | 0.82 (0.56–1.20) | 0.30 |
| I am concerned I am not getting enough clinical training due to COVID-19 (agree) | 1.43 (1.08–1.90) | 0.01* | 1.67 (1.24–2.22) | <0.001* | 1.70 (1.28–2.25) | <0.001* |
| I have concerns about graduating on time (agree) | 1.47 (1.11–1.94) | 0.007* | 1.75 (1.31–2.32) | <0.001* | 1.69 (1.28–2.24) | <0.001* |
| I was concerned about my financial situation during COVID-19 (agree) | 2.34 (1.78–3.10) | <0.001* | 1.72 (1.30–2.26) | <0.001* | 1.57 (1.19–2.08) | 0.002* |
| I have felt connected during COVID-19 (agree) | 0.54 (0.40–0.74) | <0.001* | 0.69 (0.51–0.92) | 0.01* | 0.48 (0.35–0.66) | <0.001* |
| During my placement, I felt supported by my supervisor and other clinicians (agree) | 1.08 (0.69–1.69) | 0.75 | 1.02 (0.62–1.66) | 0.94 | 0.72 (0.46–1.12) | 0.15 |
| During my placement I felt supported by my university (agree) | 0.75 (0.55–1.01) | 0.06 | 0.81 (0.59–1.11) | 0.20 | 0.71 (0.52–0.96) | 0.03* |
| During my placement I felt supported by the UDRH (agree) | 0.85 (0.63–1.13) | 0.26 | 1.01 (0.75–1.35) | 0.98 | 0.88 (0.66–1.18) | 0.40 |
| Overall, I was satisfied with my placement (agree) | 0.99 (0.66–1.48) | 0.95 | 0.87 (0.56–1.35) | 0.52 | 1.11 (0.74–1.67) | 0.61 |
| Constant | 0.80 | 0.51 | 1.58 | 0.17 | 1.20 | 0.59 |

^aR² = 12.1% (Cox & Snell), 16.3% (Nagelkerke). Model X² (10, N = 1019) = 131.82, p ≤ 0.001.

^bR² = 9.9% (Cox & Snell), 13.5% (Nagelkerke). Model X² (10, N = 1019) = 105.89, p ≤ 0.001.

^cR² = 13.4% (Cox & Snell), 18.0% (Nagelkerke). Model X² (10, N = 1019) = 146.07, p ≤ 0.001.

*Statistically significant p < 0.05.

have a positive impact on their mental health and well-being, and in turn, positively support the development of future rural health workforce. Adequate resourcing to achieve this work is vital, and support is needed for those implementing such activities.⁷

AUTHOR CONTRIBUTIONS

T. Podubinski: Investigation; writing – original draft; writing – review and editing; formal analysis. **B. Jessup:** Investigation; writing – original draft; writing – review and editing; formal analysis. **K. Obamiro:** Formal analysis; writing – review and editing. **H. Hoang:** Investigation; formal analysis; writing – review and editing. **L. Bourke:** Conceptualization; methodology; supervision; writing – review and editing.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

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REFERENCES

- Russell D, Mathew S, Fitts M, Liddle Z, Murakami-Gold L, Campbell N, et al. Interventions for health workforce retention in rural and remote areas: a systematic review. *Hum Resour Health*. 2021;19(1):103.
- Buykx P, Humphreys J, Wakerman J, Pashen D. Systematic review of effective retention incentives for health workers in rural and remote areas: towards evidence-based policy. *Aust J Rural Health*. 2010;18(3):102–9.
- Lyle D, Greenhill J. Two decades of building capacity in rural health education, training and research in Australia: university departments of rural health and rural clinical schools. *Aust J Rural Health*. 2018;26(5):314–22.
- Hoang H, Jessup B, Obamiro K, Bourke L, Hellwege B, Podubinski T, et al. Impact of COVID-19 on rural and remote student placements in Australia: a national study. *Aust J Rural Health*. 2022;30(2):197–207.
- Martin P, McGrail M, Fox J, Ostini R, Doyle Z, Playford D, et al. Impact of the COVID-19 pandemic on student experiences during rural placements in Australia: findings from a national multi-Centre survey. *BMC Med Educ*. 2022;22(1):852.
- Sheepway L, Jessup B, Podubinski T, Heaney S, Bailie J, Hoang H, et al. A qualitative exploration of health student perspectives of rural and remote placements during the early stages of the COVID-19 pandemic. *Aust J Rural Health*. 2023;31:294–307.
- Martin P, Tian E, Kumar S, Lizarondo L. A rapid review of the impact of COVID-19 on clinical supervision practices of health-care workers and students in healthcare settings. *J Adv Nurs*. 2022;78(11):3531–9.
- Jessup B, Hoang H, Podubinski T, Obamiro K, Bourke L, Hellwege B, et al. 'I can't go, I can't afford it': financial concern amongst health students undertaking rural and remote placements during COVID-19. *Aust J Rural Health*. 2022;30(2):238–51.
- Martin P, McGrail M, Fox J, Partanen R, Kondalsamy-Chennakesavan S. Impact of the COVID-19 pandemic on medical student placements in rural Queensland: a survey study. *Aust J Rural Health*. 2022;30(4):478–87.
- Kotera Y, Jackson JE, Kirkman A, Edwards A-M, Colman R, Underhill A, et al. Comparing the mental health of health-care students: mental health shame and self-compassion in counselling, occupational therapy, nursing and social work students. *Int J Ment Health Addict*. 2023. [cited 2023 July 3]. Available from: <https://link.springer.com/article/10.1007/s11469-023-01018-w#citeas>
- Epstein I, Khanlou N, Balaquiao L, Chang KY. University students' mental health and illness experiences in health and allied health programs: a scoping review. *Int J Ment Health Addict*. 2019;17(3):743–64.
- Timmins F, Corroon AM, Byrne G, Mooney B. The challenge of contemporary nurse education programmes. Perceived stressors of nursing students: mental health and related lifestyle issues. *J Psychiatr Ment Health Nurs*. 2011;18(9):758–66.
- Bradley DM, Bourke L, Cosgrave C. Experiences of nursing and allied health students undertaking a rural placement: barriers and enablers to satisfaction and well-being. *Aust Int J Rural Educ*. 2022;30(1):51–63.
- Lyons Z, Wilcox H, Leung L, Dearsley O. COVID-19 and the mental well-being of Australian medical students: impact, concerns and coping strategies used. *Australas Psychiatry*. 2020;28(6):649–52.
- Creswell JW, Creswell JD. *Research design: qualitative, quantitative, and mixed methods approaches*. 5th ed. Los Angeles, CA: Sage Publications; 2018.
- Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—a metadata-driven

methodology and workflow process for providing translational research informatics support. *J Biomed Inform.* 2009;42(2):377–81.

17. Australian Bureau of Statistics. First insights from the National Study of mental health and wWell-being, 2020–21. Canberra (AU): ABS; 2021. [cited 2023 July 3]. Available from: <https://www.abs.gov.au/articles/first-insights-national-study-mental-health-and-well-being-2020-21#cite-window1>
18. Rasmussen B, Hutchinson A, Lowe G, Wynter K, Redley B, Holton S, et al. The impact of covid-19 on psychosocial well-being and learning for Australian nursing and midwifery undergraduate students: a cross-sectional survey. *Nurse Educ Pract.* 2022;58:103275.
19. Australian Institute of Health and Welfare. Social isolation and loneliness. Canberra, ACT: AIHW; 2021. [cited 2023 July 3].

Available from: <https://www.aihw.gov.au/reports/australias-welfare/social-isolation-and-loneliness-covid-pandemic>

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APPENDIX 1

Survey questions used in this study

Demographics

Information was collected on each student's gender, age, health discipline, course level, location whilst growing up and location whilst studying

Student concern statements

Students were asked to rate whether they agreed or disagreed with the following statements, using a five-point Likert scale (1—strongly disagree, 2—disagree, 3—neither agree or disagree, 4—agree, 5—strongly agree):

1. I am concerned I am not getting enough clinical training due to COVID-19
2. I have found the COVID-19 time stressful
3. I have felt connected during COVID-19
4. I have concerns about graduating on time
5. My well-being declined during COVID-19
6. I have been concerned about my mental health during COVID-19
7. I was concerned about my financial situation during COVID-19

Student support and satisfaction statements

Students who had completed a rural or remote placement were asked whether they agreed or disagreed with the following statements, using a five-point Likert scale (1—strongly disagree, 2—disagree, 3—neither agree or disagree, 4—agree, 5—strongly agree):

1. During my placement, I felt supported by my supervisor and other clinicians
2. During my placement I felt supported by my university
3. During my placement I felt supported by the UDRH
4. Overall, I was satisfied with my placement