

# A Scoping Review of The Mental Health Support and Well-being Resources Provided to Medical Students by Australian Universities

**Background:** In 2020, the Australian government provided \$660,000 to develop a mental health framework for universities to adhere to in support of the mental health of university students. To date, there has been no formal evaluation of the current University Mental Health Framework (UMHF). In this study, we aim to provide preliminary observations that will highlight the current state of mental health support provided to medical students at Australian universities and its alignment with the UMHF.

**Methods:** A total of 19 UMHF-based criteria for student mental health support across 21 Australian universities were assessed in January 2022 and reviewed in December 2022. Data was obtained from publicly available university pages via homepage traversal and Google Search. Linear regression analysis was performed between the mental health strategy variable and sum of other variables, while Fisher's exact test was performed across all independent variables.

**Results:** The majority of universities offered individual counselling, as well as mental health crisis line access. Most universities also offered mental health first aid (MHFA) training, mental health resources, and regular well-being sessions. However, there was a lack of support for rural students and students with physical disability. A published mental health strategy was found to significantly correlate with the number of supports provided by universities, along with international student support and well-being session provision. University crisis lines, MHFA training and mental health resources were all found to intercorrelate. LGBTQI+ support correlated with international student support and well-being sessions. Well-being sessions had significant correlation to low SES background student support.

**Conclusion:** Our study suggests that current mental health support for medical students at Australian universities, while promising, possess significant inadequacies in regards to the UMHF framework. Therefore, it provides grounds for further, more comprehensive research regarding UMHF policies and university support systems, where additional analysis is required particularly on non-public resources.

**Keywords:** Mental health, medical student mental health, mental well-being, medical education, student well-being

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## Introduction

The modern era has seen a growing awareness surrounding mental health, and its role in global disease burden has been widely acknowledged.<sup>1</sup> This has only been exacerbated by the recent COVID-19 pandemic, which has led to a widespread deterioration in general mental health due to increases in social isolation, loss of income, and overall uncertainty.<sup>2-4</sup> Young adults in Australia between the ages of 12-25 suffer the highest rates of mental illness whilst simultaneously having the poorest access to support.<sup>5</sup> The mental health of tertiary students (individuals attending post-secondary educational institutions such as universities), many of whom fall comfortably into this age bracket, is a subject of great concern.<sup>6-8</sup> In particular, medical students experience high levels of academic stress, burnout and overall low quality of life suffered by students, all of which are extremely strong predictors of poor mental health.<sup>9-12</sup> Poor mental health or mental ill-health in this study is defined as a series of "conditions that affect cognition, emotion and behaviour" causing distress and/or impaired function to the individual.<sup>13</sup> Because medical students tend to have poorer mental health than the rest of the general population<sup>14,15</sup>, this can further result in mood disturbance, substance abuse and even suicide.<sup>15,16</sup>

In 2020, the Australian Government initiated the development of the University Mental Health Framework (UMHF) for universities to adhere to in support of the mental health of university students.<sup>17</sup> This framework outlines six principles, which can be summarised as follows: 1) mental health support should reflect the needs and realities of students, 2) all members of the university community contribute to a healthy learning environment, 3) mentally healthy university communities encourage diversity, connectedness and inclusivity in their learning environment, 4) collaboration and coordination are key to strengthening the mental health response, 5) appropriate, effective and timely services are needed for accessibility, 6) evidence-based continuous improvement and innovation is needed for these services.<sup>18</sup>

To date, there has been no formal evaluation of the current UMHF. In this study, we aim to provide preliminary observations that will highlight the current state of mental health support provided to medical students at Australian universities and its alignment with the UMHF.<sup>18</sup> At present, there is a dire lack of literature regarding mental health service provision specifically for

medical students. Therefore, the following 18 variables were chosen based on current literature regarding mental health supports in conjunction with the UMHF principles:

1. Mental health strategy. A documented mental health strategy is essential for promoting and protecting a community's mental health,<sup>19</sup> and enables implanting practical solutions in healthcare.<sup>20</sup> This reflects UMHF Principles 1,2 and 4.
2. Individual counselling. Counsellors are often the first point of contact when a university student requires mental health support,<sup>21</sup> and this variable is in line with UMHF Principle 5.
3. No cap on individual counselling. It is well established that the efficacy of counselling sessions increases with the number of sessions.<sup>22,23</sup> This also reflects UMHF Principle 5.
4. University crisis line. Current literature suggests that crisis lines improve mental health outcomes,<sup>24</sup> and a university crisis line indicates adherence to UMHF Principle 5.
5. External crisis line. Directions for external crisis lines are a substitute for university-run crisis lines which may improve mental health outcomes<sup>24</sup> and reflect UMHF Principle 5.

Demographic-specific support. The following were considered forms of demographic-specific support:

Counselling services, as discussed previously, are an important form of mental health support for students, and were included.

Staff and student advisors, which have been shown to benefit the well-being of university students,<sup>25,26</sup> were included.

Peer mentors, which have been shown to improve student well-being,<sup>27</sup> were included.

Support groups, which have been shown to aid university student mental health,<sup>28</sup> were included.

6. Medical student support. Medical students have been shown to benefit from mental health services tailored to medical students,<sup>29,30</sup> and specific support reflects UMHF Principle 5.
7. LGBTQI+ support. LGBTQI+ tailored support significantly increases well being, and has been strongly endorsed to improve mental health.<sup>31-33</sup> There is a current lack in LGBTQI+ trained mental health professionals,<sup>34</sup> needed to address UMHF

Principles 1 and 5.

8. Aboriginal and Torres Strait Islander support. Mainstream services are often inappropriate for Aboriginal and Torres Strait Islander individuals,<sup>35</sup> and improving access to culturally sensitive mental health support reflects UMHF principles 1 and 5.
9. International student support. International students are subject to a different range of cultural, economic and academic pressures,<sup>36</sup> and are a vulnerable population in need of tailored support, as per UMHF Principles 1 and 5.
10. Physical disabilities student support. Physical disabilities have been linked to increased risk of poor mental health.<sup>37</sup> Specific support for this vulnerable group reflects UMHF Principles 1 and 5.
11. Support for students of a rural/remote background. Remoteness of location has been correlated with psychological distress with altered social infrastructure and geographic isolation,<sup>38,39</sup> making students from rural backgrounds at risk for poor mental health. The UMHF Principles 1 and 5 indicate a need for specific support for this group.
12. Students on rural placement support. Students who are not from a rural background also experience remoteness of location and thus mental health risks,<sup>38,39</sup> despite being a separate entity from students originating from rural and remote locations. Support is needed for this group under UMHF Principles 1 and 5.
13. Low SES background student support. Low SES has been linked to poorer mental health outcomes,<sup>40</sup> and UMHF Principles 1 and 5 suggest a need for tailored support for this group.
14. Mental health resources. Increased mental health literacy as a result of mental health resources and training has been shown to reduce stigma,<sup>41</sup> which aids in improving mental health outcomes. This aligns strongly with UMHF principles 3 and 4.
15. Mental Health First Aid (MHFA) training. MHFA training is effective in improving mental health literacy,<sup>42-44</sup> but faces many accessibility issues for university students.<sup>45</sup> MHFA training reflects UMHF Principles 3 and 4.
16. Well-being sessions. Physical activity, along with mindfulness and meditation have been supported in the literature as interventions helpful in alleviating

mental ill-health and stressors.<sup>46-48</sup> This aligns with UMHF principles 3 and 4.

17. Well-being app. Literature is growing in support of university-wide applications (apps) that aim to promote mental health and mindfulness.<sup>49,50</sup> Examining the presence of a Well-being App scrutinises adherence to UMHF principles 3 and 6.
18. Overall score. Current literature lacks any numerical overall analysis framework for university mental health supports. Consequently, the present study utilised a sum total of binary values from the other 17 variables to create this proxy variable as a crude measure of the overall provision of these mental health support types.

In addition to these 18 variables examining types of university mental health support, university social media use was also investigated. UMHF Principle 6 emphasises the need for mental health literacy promotion, and social media has been shown to improve mental health literacy and increase the likelihood of young adolescents reaching out for help.<sup>51,52</sup> Facebook and Instagram were the two platforms investigated as they are the two most commonly used platforms in Australia.<sup>53</sup> Posting frequency was utilised as a measure for social media use, as posting increases visibility, and therefore increased outreach with greater potential for health literacy education. However, social media posting frequency is poorly suited to a binary characteristic, and it was deemed necessary to separate this from the cumulative total of the first 18 variables.

## Method

### Search Method

Criteria for student mental health support was assessed in January 2022 and reviewed in December 2022 via a combination of Google search and homepage traversal. The two investigators independently traversed the public home page of each university website, searching for the presence of each variable. If a particular service or item could not be found on the university student home page, a Google search of "[insert university] [insert service]" was performed, e.g. "Bond University MHFA training". Identified mental health strategies are catalogued in Appendix 1.

The number of mental health and well-being-related posts within the last 2 years were manually counted

on the university Facebook and Instagram pages, as a surrogate marker of mental health promotion by each university. This was performed independently by the two investigators, and any discrepancies were resolved with discussion.

## Inclusion Criteria

Only universities and tertiary institutions registered by the Royal Australian College of General Practitioners (RACGP) were investigated as Australian medical schools.<sup>54</sup>

Since medical students tend to be on-shore students, only services accessible to on-shore students were

assessed. As we are investigating university-provided support services, those offered by student unions and clubs have been excluded.

Due to access restrictions, support resources gated by a university login were not assessed, unless referred to elsewhere; it was adjudged that general awareness around resources that were not alluded to on the public website was likely to be low, and so they were not “readily and obviously” accessible per our research question.

For the purposes of the study, only specialised, qualified counsellors and psychologists were accepted towards the student counselling criteria. Many universities offered student advisors for various target demographics,

**Table 1. Variable definitions**

Variable	Operational Definition
Mental health strategy (MH strategy)	A page or document was found to be publicly available, referring specifically to the university’s goals/aims relating to mental health and well-being within its community, including students. Identified university mental health strategies are listed in Appendix 1. An incomplete score for this category was assigned where the full strategy was alluded to, but only a summary was publicly accessible.
Individual counselling	The university offers individualised psychological counselling for all students with qualified counsellors.
No cap on individual counselling	There is no hard limit defined on the university’s website for the number of counselling sessions available to students.
University crisis line	The university offers an after-hours crisis line accessible to students for emergency purposes, such that support is available 24/7.
External crisis lines	The university website pertaining to urgent support and emergencies offers direct links to external 24/7 crisis lines for students in times of need.
Medical student support	The university offers counselling services, staff and student advisors, peer mentors or support groups specifically tailored towards assisting medical students.
LGBTQI+ support	The university offers qualified psychological counsellors who have completed some form of LGBTQI+ training, or who are LGBTQI+ Allies; alternatively, there is an established ally network, dedicated safe spaces, advisors, peer mentors or support groups specifically tailored towards assisting LGBTQI+ students.
Aboriginal and Torres Strait Islander support	The university offers counselling services, staff and student advisors, peer mentors or support groups specifically tailored towards assisting Aboriginal and Torres Strait Islander students.
International student support	The university offers counselling services, staff and student advisors, peer mentors or support groups specifically tailored towards assisting international students.
Physical disabilities students support	The university offers counselling services, staff and student advisors, peer mentors or support groups specifically tailored towards assisting students with physical disabilities.
Rural/remote student support	The university offers counselling services, staff and student advisors, peer mentors or support groups specifically tailored towards assisting students from rural and/or remote backgrounds.
Students on rural placement support	The university offers counselling services, staff and student advisors, peer mentors or support groups specifically tailored towards assisting students on rural placements.
Low SES background student support	The university offers widely available financial counselling, and/or financial assistance in the form of loans and grants specifically tailored towards assisting students from low socio-economic status backgrounds. Programs with restricted availability, such as scholarships and exclusive grants, have been excluded due to their lack of availability to the wider student population.

Variable	Operational Definition
Mental health resources	The “mental health resources” variable was defined as the following: The university offers direct access to online materials and information aimed at increasing mental health literacy, including information sheets, checklists and educational videos.
Mental Health First Aid (MHFA) training	The university offers MHFA training courses to students.
Well-being sessions	The university offers regular interactive sessions or programs aimed at student psychological well-being, including wellness workshops, mental health seminars and mindfulness exercise classes (e.g. meditation, yoga).
Well-being app	Our paper defines the “well-being app” variable as the following: The university offers exclusive access to students for a mobile app specifically targeted at improving student mental health and well-being (e.g. TalkCampus or university-specific apps).
Overall score	The sum total of the binary values of the previous 17 variables. Variables that were provided by a university were assigned the value “1”, those that were not found were assigned the value “0”. A proxy for overall mental health support.
Social media use	The university’s number of posts promoting mental health and well-being on the respective official university social media pages (Facebook and Instagram) over the past 2 years. These posts can include, but are not limited to, advertising “R U OK” days, reminding students of mental health resources and support available, and access to counselling services at the university.

but as these functioned primarily as more generalised (logistical or academic) assistance rather than mental health support, they were excluded.

## Variables

The variables examined are summarised in the **Table 2**

## Statistical analysis

Data was analysed using the Statistical Package for Social Science (IBM Corp. Armonk, NY) version 28.0.0.0. Linear regression analysis was performed on the mental health strategy variable and overall variable score, to examine correlation between presence of the mental health strategy and the numerical magnitude of the overall score. Fisher’s exact test was performed across each of the independent variables.  $P < 0.05$  was considered significant.

Of Australia’s 21 medical schools, only 13 universities offered published mental health strategies on their websites. 2 of these were incomplete summaries, and 3 were published more than 5 years prior to 2022. All universities publicly offered individual counselling to medical students; however, only 8 universities did not specify a session limit, and of these 8, 3 defined the service as “short-term” in nature. Most of the other 13 universities imposed a 6-session limit, though this varied between semesterly, yearly and in total. The majority of universities publicised access to a mental health crisis

line from their website, whether run by the university itself or via redirection to external providers.

Around half (11) of the universities publicly offered medical student-specific support for their students. The vast majority of universities (19) demonstrated LGBTQI+ student support, whilst all universities offered support for Aboriginal and Torres Strait Islander students. The majority of universities (18) were observed to offer support for international students. All universities offered support for students with physical disabilities, though no university offered support for students from rural or regional backgrounds; the University of Melbourne and the Australian National University, however, offered student union-organised rural student clubs. Only the University of Notre Dame offered support for students on rural placement. The majority of universities offered support for low SES background students (19).

The majority of universities (18) publicly offered free mental health resources to students, as well as MHFA training courses (13). MHFA training courses offered by the University of Sydney and ANU via their public sports and staff websites were counted in the table, as there were no restrictions specified preventing students from taking these. Curtin University’s MHFA training program was not counted, as this was only available by enrolling in a specific subject. Most universities hosted regular well-being sessions (17), but less than half (8) offered a welfare app for students to download. Of these, 4 utilised the TalkCampus app platform. University social

**Table 2. A summary of all independent variables at each university as per UMHF principles.**

<b>OVERALL TOTAL</b>	15	13	14	14	12	13	12	12	13	13	13	10	11	12	11	9	10	8	9	8	8	
<b>App</b>	V	V	V	X	X	X	X	X	X	X	X	X	V	V	X	V	X	V	X	X	V	8
<b>Well-being Sessions/Programs (e.g. meditation, yoga, seminars, workshops)</b>	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X	X	X	X	17
<b>Mental Health Training Available (MHFA)</b>	V	V	V	V	V	V	V	V	X	V	V	X	X	X	V	X	V	X	V	X	X	13
<b>Mental Health Resources (info sheets, checklists, information videos) - increasing health literacy</b>	V	V	V	V	V	V	V	V	V	V	V	X	V	V	V	X	V	V	V	X	V	18
<b>Low SES background student support</b>	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X	X	19
<b>Students on rural placement</b>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	V	X	X	1
<b>Rural/remote students support (from rural background)</b>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
<b>Disabilities students support</b>	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	21
<b>International student support</b>	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X	X	X	V	V	V	18
<b>Aboriginal and Torres Strait Islander support</b>	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	21
<b>LGBTQI+ support</b>	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	X	X	V	V	V	19
<b>Medical student support</b>	V	X	V	V	V	V	X	V	V	V	X	V	X	X	X	X	X	X	V	V	X	11
<b>Links to External Crisis Lines (on crisis page)</b>	V	V	X	V	V	V	V	X	V	V	V	V	V	V	X	V	V	X	V	V	V	17
<b>University Crisis Line 24/7</b>	V	V	V	V	V	V	V	V	V	V	V	X	V	X	V	X	V	V	X	X	X	15
<b>X Cap on Individual Counselling</b>	V	X	V	V	X	X	X	X	V	X	X	X	X	V	X	X	X	V	X	V	X	8
<b>Individual Counselling Available</b>	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	21
<b>Mental Health Strategy</b>	V	V	V	V	X	V	V	V	V	V	V	V	X	V	V	X	X	X	X	X	X	13
<b>University</b>	ANU	Sydney	Adelaide	Monash	Melbourne	Western Australia	Flinders	Queensland	Newcastle	New South Wales	Griffith	Deakin	Macquarie University	Western Sydney	Wollongong	Curtin	Tasmania	New England	Notre Dame	Bond	James Cook	Total

media use for mental health promotion varied greatly, particularly on Facebook, but was generally lower on Instagram.

University mental health promotional activity on social media varied significantly, as shown in **Table 2**. The number of well-being-related Facebook posts between 2020-2021 ranged from 1-9, while the number of well-being-related Instagram posts in the same period generally ranged from 0-3, with notable outliers being Griffith University (8) and the University of Melbourne (10).

## MH strategy and overall score

Linear regression analysis yielded significant correlation between universities having published a mental health strategy and their total overall score according to the criteria ( $b=3.317$ ,  $p<0.001$ ,  $CI = 2.011, 4.623$ ).

## MH strategy and other variables

Fisher's exact test revealed that a university's mental health strategy availability was significantly correlated with the following variables:

1. International student support ( $df=1$ ,  $N=21$ , Fisher's Exact Test= $0.042$ )
2. Well-being sessions ( $df=1$ ,  $N=21$ , Fisher's Exact Test= $0.012$ )

## All variables

Fisher's exact test performed across each of the resource variables revealed significant correlations in universities offering the following resources ( $df=1$ ,  $N=21$ ):

1. University crisis line and MHFA training (Fisher's Exact Test= $0.014$ )
2. University crisis line and mental health resources (Fisher's Exact Test= $0.015$ )
3. LGBTQI+ support and international student support (Fisher's Exact Test= $0.014$ )
4. LGBTQI+ support and well-being sessions (Fisher's Exact Test= $0.029$ )
5. Well-being sessions and low SES background student support (Fisher's Exact Test= $0.029$ )
6. MHFA training and mental health resources (Fisher's Exact Test= $0.042$ )

All other correlations were found to be insignificant (Fisher's Exact Test  $> 0.05$ ).

## Discussion

Mental health supports and services provided to medical students varied greatly between each university. We acknowledge that our findings are based on information published on publicly available sites, including academic institutions' social media pages and websites, and may not be in line with information available to students on their home institutions' intranet and servers limited to staff and students. Thus, the comparison between each medical institution's available mental health services may not be accurate. However, a report by Levitz<sup>55</sup> has highlighted the importance of up-to-date and user-friendly websites for academic institutions for prospective students to have easier access to information. Moreover, a study by Rowan-Kenyon et al<sup>56</sup> highlights the importance of social media in engaging with tertiary students. Our findings advocate for medical institutions to not only keep their publicly available sites up-to-date with the mental health services they offer for staff and students' accessibility, but also encourage them to perhaps identify gaps in their services so that there is a standardised level of mental health support offered to medical students across all universities. Future research could include analysing each medical institution's internal supports, investigating students' perspectives on their institutions' available mental health services and correlating this information to the findings of this study.

The presence of a published mental health strategy was found to be significantly correlated with the overall mental health support provided by a university. There is no existing literature regarding the efficacy of mental health strategies and no documented correlation between a published mental health strategy versus the number of publicly available supports provided by a university. However, current literature accepts that strategic planning aids focus and implementation of change.<sup>57</sup> Our findings support this, suggesting that mental health strategies aid in the identification and provision of mental health supports as directed by the UMHF principles.

A publicised mental health strategy was found to be significantly correlated with international student support. 27.1% of university students in Australia are international students.<sup>58</sup> International students in healthcare professions are more likely to be subjected to increased discrimination and social isolation.<sup>59</sup> As such, appropriate mental health support for international students is crucial. Moreover, a study by Martirosyan et al

**Table 3. Number of official university mental health and well-being-related social media posts between 2020 and 2022.**

University (posts since 2020)	Facebook	Instagram
ANU	8	0
Sydney	6	3
Adelaide	1	1
Monash	9	3
Melbourne	8	10
Western Australia	3	2
Flinders	5	2
Queensland	9	0
Newcastle	3	2
New South Wales	6	2
Griffith	5	8
Deakin	6	3
Macquarie University	7	0
Western Sydney	5	1
Wollongong	6	0
Curtin	5	0
Tasmania	3	0
New England	7	0
Notre Dame	4	0
Bond	2	0
James Cook	5	2

suggests that support should be tailored to international students' academic and personal needs, both of which can often be overlooked without a strategy in place.<sup>60</sup> Once again, our study highlights the importance of a publicly available mental health strategy, particularly in the context of addressing the needs of international medical students.

The availability of a mental health strategy was also found to be significantly correlated with well-being sessions. There is limited literature on this topic, but existing literature suggests well-being sessions are helpful for medical interns.<sup>61</sup> As aforementioned, physical activity, mindfulness and meditation all play a role in improving mental health, in line with UMHF Principles 3 and 4.<sup>46-48</sup> Our findings suggest that a publicly available mental health strategy is important in implementing well-being sessions for students, which have been shown to improve students' mental health.

Significant correlations were found between the availability of a university mental health crisis line and MHFA training, between a university mental health crisis

line and mental health resources, and between MHFA training and mental health resources.

The presence of crisis lines has been shown to lead to improved mental health outcomes and MFHA training has been shown to improve mental health literacy,<sup>24,42-44</sup> which in turn results in better mental health outcomes for students and young adults.<sup>62</sup> All in all, our findings show that universities that have made a mental health crisis line available to their students are likely to also publicise mental health first aid training resources and other mental health resources for their students, which shows a holistic approach towards mental health emergencies. While there is limited literature on the synergistic effect of mental health crisis lines, MHFA training and other mental health resources on the mental health of students, our findings should encourage more medical institutions to implement these resources given the literature on its efficacy as individual interventions.

Our results also showed significant correlation between well-being sessions and a number of specialised counselling supports. That well-being sessions were correlated with both LGBTQI+ and low SES student supports suggests that well-being supports reflect a broader, overarching university mental health program – this reflects the correlation found between well-being sessions and a publicised mental health strategy. LGBTQI+ support was also observed to correlate with international student support. International and low SES student well-being supports are poorly characterised in the current literature. However, there is evidence to suggest that current resources for LGBTQI+ university students remain lacking.<sup>63</sup> Therefore, perhaps as the remaining 8 universities place increased emphasis on a published mental health strategy for the wider student community, this will empower the provision of appropriate well-being services for vulnerable student populations, as per UMHF principles 1, 4, and 5. Our results suggest that specialised student supports appear to reflect a broader mental health strategy, rather than being isolated entities.

The vast majority of universities offered individual counselling, as well as mental health crisis line access. There was also strong, widespread support for LGBTQI+, Aboriginal and Torres Strait Islander, international, and low SES background students, as well as students with physical disabilities; most universities also offered MHFA training, mental health resources, and regular well-being sessions. However, a limit to the number of sessions students could access was observed in many instances. UMHF principle 5 emphasises the importance



of availability for well-being supports, and it has been shown that the efficacy of such supports increases with the number of sessions attended.<sup>22,23</sup> Therefore, despite many of these supports being offered, there is a need for development of these services to deliver longer-term care to achieve best mental health outcomes for students.

No specialised well-being supports were seen for rural students (whether from rural or those on rural placement), or those with physical disability. Rural students experience geographical and social risk factors for poorer well-being<sup>39</sup>, while physical disability is strongly linked to poor mental health outcomes.<sup>37</sup> That these populations are so unanimously overlooked by the tertiary institutions studied is a worrying sign. Despite the present study only examining publicised information, support services were identified for all other vulnerable student populations. Therefore, there is perhaps a need to re-emphasise UMHF principle 1 in the context of increasing awareness and service provision for the well-being of rural students and students with physical disabilities.

Noticeably, no correlations were seen between a university well-being app and other mental health supports. Current research regarding well-being apps for university students has shown significant improvements to well-being.<sup>64,65</sup> This lack of correlation suggests that app implementation is a somewhat isolated measure, rather than part of a cohesive mental health strategy. There is scope for further research regarding the interplay between well-being apps and supports such as counselling and crisis lines, and how they might be utilised in concert to provide appropriate mental health support for university students, as per the UMHF. Social media promotion of mental health varied greatly among the universities.

Currently, there is a dearth of research in this field; the optimal frequency of social media posting for commercial businesses has been identified as around 6-7 times per week,<sup>66</sup> wherein user engagement is maximised. This is incomparable to mental health promotion by universities, which are educational institutes first and foremost, which precludes absolute judgments of the posting frequencies found. However, the wide range of social media posting frequencies indicates different approaches by universities in addressing mental health promotion. Further research is therefore warranted into the effects of these approaches, and student well-being as a result.

## Limitations

The authors' investigation was hindered by their lack of access to university websites. Due to feasibility and ethical considerations, data was restricted only to that which was accessible to the public. This information may not be the most accurate or updated, and universities may offer mental health support not described in their public domains, which eluded the authors. Additionally, ambiguities were present in variable stratification; for example, the decision was made to include the University of Notre Dame's rural clinical school well-being services as part of "rural placement supports", despite this not being explicitly to support the rural placement aspect of the students' experience.

Additionally, though the study's criteria were strictly modelled on the UMHF, there exists no official standardised framework or criteria with which to analyse and evaluate mental health support. These factors may have impacted the significance of our findings.

## Strengths

Our paper examined all Australian universities with medical institutions in a nation-wide comparison, allowing for a comprehensive examination of a combination of mental health and well-being supports. In particular, our study analysed mental health and well-being supports in line with six core principles from the 2020 Australian Department of Health-commissioned university mental health framework. These included investigating the availability of specific programs, such as Mental Health First Aid Training, well-being sessions, well-being applications amongst many others. Therefore, our analysis allowed for observation of the strengths and deficiencies within each institution's mental health supports, both individually and as a national collective.

Our study also provides the only current evaluation of the UMHF within published literature. The evidence yielded, albeit limited, indicates a need for more rigorous evaluation of mental health support in Australian universities, given the lack of literature and nation-wide deficiencies in the UMHF's outlined approach. More specifically, given that only 13 universities have published a mental health framework and even fewer an updated guideline, this study may show a potential lack of commitment to students' mental health at certain institutions. Therefore, our paper serves as a basis for further research.

## Conclusion

Australian medical students should consider the publication of a mental health strategy to provide more aspects of well-being support for students. Targeted support is provided for many vulnerable groups, but more resources are perhaps required for rural students and students with disability, as well as longer-term counselling services. Current adherence to the UMHF is promising, but there is space for further improvement to support the nation's medical students, as well as further research regarding current well being measures.

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## Conflict of Interest

None.

## Abbreviations

MH: Mental Health

MHFA: Mental Health First Aid

UMHF: University Mental Health Framework

LGBTQIA+: Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, and Asexual

SES: Socio-economic Status

RACGP: Royal Australian College of General Practitioners

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