



The impact of covid-19 on psychosocial well-being and learning for Australian nursing and midwifery undergraduate students: a cross-sectional survey

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ABSTRACT

Aim: To explore the impact of COVID-19 on psychosocial well-being and learning for nursing and midwifery undergraduate students in an Australian university.

Background: The World Health Organization has reported a substantial psychological impact of COVID-19 on healthcare professionals to date. Evidence is lacking, however, regarding university nursing and midwifery students of the pandemic and its impact on their educational preparation and/or clinical placement during the COVID-19 pandemic.

Design: Cross-sectional survey of nursing and midwifery undergraduate students enrolled in the Bachelor of Nursing suite of courses from the study institution in August- September 2020.

Methods: A cross-sectional self-administered anonymous online survey was distributed to current nursing and midwifery undergraduate students. The survey included three open-ended questions; responses were thematically analysed.

Results: Of 2907 students invited, 637 (22%) responded with 288 of the respondents (45%) providing a response to at least one of the three open-ended questions. Three major themes associated with the impact of the pandemic on psychosocial well-being and learning were identified: psychosocial impact of the pandemic, adjustment to new modes of teaching and learning, and concerns about course progression and career. These themes were

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underpinned by lack of motivation to study, feeling isolated, and experiencing stress and anxiety that impacted on students' well-being and their ability to learn and study.

Conclusions: Students were appreciative of different and flexible teaching modes that allowed them to balance their study, family, and employment responsibilities. Support from academic staff and clinical facilitators/mentors combined with clear and timely communication of risk management related to personal protective equipment (PPE) in a healthcare facility, were reported to reduce students' stress and anxiety. Ways to support and maintain motivation among undergraduate nursing and midwifery students are needed.

1. Introduction

The COVID-19 pandemic has had a considerable impact on health services globally. At the frontline, healthcare professionals are likely to have specific fears related to contracting COVID-19; for example, long term health consequences, exposing family members to COVID-19 and social stigma (Huang, Xu, and Liu, 2020). The World Health Organisation (WHO, 2020) reported that the main psychological impact of COVID-19 on the health workers to date has been elevated rates of stress and anxiety.

Nurses were, and continue to be, a significant component of the healthcare workforce required to respond to the unprecedented pandemic at very short notice. At the height of the COVID-19 pandemic, the Australian Health Practitioner Regulation Agency (AHPRA) urged former nurses to return to the workforce, as a strategy to build resilience in workforce capacity, uphold quality nursing care and maintain safe nurse-to-patient ratios (Scott, Lloyd, and Florance, 2020).

COVID-19 is also expected to have a significant impact on nursing and midwifery students' emotions and their sense of well-being. In some countries, undergraduate nursing students, particularly those in the latter years of their course, came to be viewed as potential assets to the health workforce and were employed with modified employment or placement arrangements (Bogossian, McKenna, and Levett-Jones, 2020; Swift et al., 2020), with some final year nursing students used as auxiliary health staff (Monforte-Royo and Fuster, 2020). In other jurisdictions, calls were made to enable students to participate as support workers and be provided clinical placement credit for doing so (Benton et al., 2020a,b; Swift et al., 2020). In contrast, student clinical placements were completely suspended in Spain (Ramos-Morcillo, Leal-Costa, Moral-García, and Ruzafa-Martínez, 2020).

For many students, their clinical placements were affected during the pandemic (Bogossian et al., 2020). Aside from constrained organisational capacity to provide appropriate supervision and cancelled placements, universities, students and health services were concerned students may experience less meaningful learning encounters during a period of surgical cancellations and other service disruptions and in a highly stressed environment (Bogossian et al., 2020). Other concerns related to the psychological impact on students reassigned to assist as a workforce response in specific areas during the pandemic (Hayter and Jackson, 2020).

International studies indicate that nursing students have experienced anxiety during the COVID-19 pandemic (Savitsky, Findling, Erel, and Hendel, 2020; Swift et al., 2020). In Israel, a lack of personal protective equipment (PPE), parental responsibilities, and a fear of infection were reportedly associated with higher stress levels (Savitsky et al., 2020). A report from the United Kingdom, revealed that students felt a sense of anxiety and fear about attending placement (Swift et al., 2020). Fear of being exposed to the virus may have raised anxiety among students about their own vulnerability to the disease and transmission to their significant others. Reports of increasing numbers of health care worker COVID-19 related deaths internationally (Hayter and Jackson, 2020) may have been another factor having an impact on students' psychosocial well-being. Some students were unable to attend placement because of medical conditions that put them at risk of serious illness from COVID-19.

To fully understand the psychosocial and learning impacts of the

COVID-19 pandemic on undergraduate nursing and midwifery students, research is essential.

The aim of this study, therefore, was to assess the impact of COVID-19 on psychosocial well-being and learning for nursing and midwifery undergraduate students in a large multi-campus School of Nursing and Midwifery in Australia. This paper reports the qualitative part of a bigger study.

2. Methods

2.1. Design

Data were collected using a brief, self-administered, anonymous, online cross-sectional survey of undergraduate nursing and midwifery students enrolled at a three-campus university in Victoria, Australia. The survey provided an opportunity for participants to respond to three open-ended questions regarding positive and negative impacts of the pandemic on their education. Responses to these questions are the focus of this paper.

2.2. Participants and setting

At the time of the survey in August-September 2020 Victoria was in 'stage 4' restrictions (Hurst and Taylor, 2020), which meant that people were required to stay at home other than for designated reasons, including up to one hour of recreational activity per day within a 5 km zone of their home in Melbourne, attendance at medical appointments, and shopping for essential supplies. In addition, all gatherings were cancelled, and public venues and businesses were closed, except for essential services such as supermarkets, pharmacies, medical clinics, and petrol stations (Australian Government, 2020). On August 18, 2020, the day the survey was distributed, there were 17,238 active cases, 211 new cases and 17 deaths from COVID-19 in Victoria, mostly in metropolitan Melbourne (Department of Health and Human Services, 2020).

In the study academic institution, with campuses located in Melbourne and two regional areas of Victoria, Australia 2907 undergraduate nursing and/or midwifery students were enrolled across three campuses and were invited to participate in the study. The students were enrolled in years one, two, three or four of the undergraduate Bachelor of Nursing degree course and students were enrolled in a double degree course (Nursing-Midwifery; Nursing-Health Promotion, Bachelor of Nursing/Bachelor of Psychological Science). The university where this study was conducted was one of the few Victorian Universities that offered face-to-face simulations learning and teaching sessions on campus during the pandemic. These simulations were offered as intensive sessions, with small groups of students to accommodate physical distancing requirements, e.g., reduced students in the classroom, adequate spacing, masks, etc. The number of simulations that students completed was also reduced.

2.3. Recruitment

All students enrolled in the Bachelor of Nursing, Bachelor of Nursing (Clinical Leadership) and Bachelor of Nursing/Bachelor of Midwifery, Bachelor of Nursing/Bachelor of Public Health and Health Promotion and the Bachelor of Nursing/Bachelor of Psychological Science were

invited to participate in an online survey. The survey was administered via Qualtrics, using the University’s platform.

Invitations to complete the survey were sent by the institution’s student administration using the students’ university email addresses. The email invitation included a brief description of the survey, the Plain Language Statement (PLS), and a link to the survey. A reminder email to complete the survey was sent approximately two weeks after the initial invitation. Students were advised that submission of the survey indicated consent to participate.

2.4. Instrument

The 51-item survey included mostly fixed-response questions, and three open ended questions. The following four domains were assessed: 1) Sociodemographic and employment characteristics 2) Health 3) Psychological well-being (Lovibond and Lovibond, 1995), and 4) Perceived impact of COVID-19 on educational progress and preparedness for clinical placement.

This paper specifically focuses on analysis and discussion of the three open-ended questions, in the survey:

1. “Please tell us about any negative impacts you think the COVID-19 pandemic has had on your education at ...”;
2. “Please tell us about any positive aspects of the COVID-19 pandemic, regarding your education at ...”;
3. “Have we missed anything? If you have anything else you would like to tell us about the impact of COVID-19 on you or your education at ..., please tell us here”.

2.5. Data analysis

Data from the open-ended questions were analysed using NVivo 12 Plus computer software. Thematic analysis was conducted, and an inductive coding system was developed, with words and sentences being coded into nodes (Burns and Grove, 2009). To ensure the credibility of the coding process, four of the authors (AH, BR, DK, GL) each coded the open text independently, identified nodes across the 724 survey responses and developed a coding table with 351 codes. The team collaborated to create a tree-node with 68 new sub-nodes under 5 overarching themes, which was presented to the full team (all authors of this paper). After this consultation, the tree node system was refined to reflect the most prominent themes that reflected positive and negative impacts of the pandemic on undergraduate students and their education. Exemplar quotes are provided to reflect the meaning of each theme and to support the researchers’ interpretation of the data in Table 2.

Rigour was upheld in this study according to the trustworthiness criteria established by Lincoln and Guba (1985) including credibility, dependability, transferability, and confirmability. Credibility is demonstrated through audit trails. An audit trail was maintained for documentary evidence of the sequence of activities for this research, demonstrating dependability. As previously described, the data were independently analysed by the investigators who compared their interpretation of data and agreed on the thematic framework. This process strengthens confirmability, establishing that interpretation of the findings was clearly derived from the data.

2.6. Ethical considerations

The population of nursing and midwifery students could be perceived as being in a dependent or unequal relationship with researchers because some hold teaching/leadership roles in the School of Nursing and Midwifery at the study institution. However, there was no direct contact between investigators and the students in the recruitment phase. Data collection occurred via a voluntary and anonymous online survey. The investigators were not able to identify students who took part, or decided not to take part, in the study. Ethics approval was

granted (HEAG-H 164_2020).

3. Findings

Of the 2907 students invited, 637 (22%) responded with 288 of the respondents (45%) providing a response to at least one of the three open-ended questions about positive and negative impacts of the pandemic on their education. Demographic characteristics of student who responded are provided in Table 1. Most participants were female (93.4%) and lived with someone else (90.4%). The mean age was 25.2 years. A small proportion reported responsibilities for dependent children (n = 55,11.7%) or a family member or friend (n = 62,14.2%). A proportion of students (n = 120, 34.2%) were not born in Australia, and of these, (n = 79, 65.8%) held international student status. Three quarters (n = 332,76%) of the respondents were enrolled in a single degree and about a quarter in a double degree (n = 105, 24%). More than half of participants were based at one of the three campuses (n = 272, 62.2%) and were enrolled in the first or second year of their course (n = 251,57.5%).

Analysis revealed three major themes about the perceived impact of COVID-19 on psychosocial well-being and learning for nursing and midwifery undergraduate students. The results are presented according to these themes: psychosocial impact of the pandemic, adjustment to new modes of teaching and learning, and concerns about course progression and career.

Table 1 Demographic characteristics of the sample.

Characteristic	Category	N	%
Gender	Female	408	93.4
	Male	24	5.5
	Non-binary	2	0.5
	Did not disclose	3	0.7
Living alone	Yes	42	9.6
	No	395	90.4
Living with dependent children	Yes	51	11.7
	No	386	88.3
Carer responsibilities (not dependent children)	Living with student	27	6.2
	Not living with student	35	8.0
	No	375	85.8
Country of Birth	Australia	317	72.5
	Philippines	29	6.6
	China	17	3.9
	India	11	2.5
	Other	63	14.4
International student status (for students born overseas [N = 120])	Yes	79	65.8
	No	41	34.2
Degree	Bachelor of Nursing	307	70.3
	Bachelor of Nursing / Bachelor of Midwifery	61	13.9
	Bachelor of Nursing / Bachelor of Psychological Science	33	7.6
	Bachelor of Nursing (Clinical Leadership)	25	5.7
	Bachelor of Nursing / Bachelor of Public Health and Health Promotion	11	2.5
Campus	A	272	62.2
	B	137	31.4
	C	28	6.4
Year of enrolment	1st	106	24.3
	2nd	145	33.2
	3rd	58	13.3
	4th	28	6.4
Employment or voluntary position	Yes	314	71.9
	No	123	28.1
Age (years)	Mean		25.15
	SD		7.35
	Range		18–59

3.1. Psychosocial impact of the pandemic

Four themes related to the psychosocial impact of the pandemic were identified: Reduced motivation; the impact of isolation and the global pandemic on students' mental health; the impact of competing responsibilities on students' ability to focus and engage in teaching and learning; and increased resilience (themes and supporting quotes are provided in Table 2).

3.1.1. Reduced motivation

Reduced motivation to undertake their studies was the most commonly reported psychosocial impact of COVID-19. Respondents recalled that they lacked motivation, which in turn affected their concentration and engagement with teaching and learning activities.

3.1.2. Impact of isolation and the global pandemic on students' mental health

Participants reported experiencing anxiety, depression, and stress from isolation and worries about their studies; their financial situation; the psychosocial impact on their family when on clinical placements; and other concerns, such as travel restrictions related to the global pandemic. Feelings of helplessness were raised, particularly in relation to feeling isolated from family and support networks during the lockdown period.

3.1.3. Competing concerns affect ability to focus and engage in teaching and learning

Concerns about work, unemployment, and family; financial challenges; attending school remotely [home schooling] responsibilities; and worries about contracting COVID-19 were identified as competing factors that affected students' ability to focus and engage in teaching and learning. Many participants reported that they had lost employment during this period, which caused them to feel stressed about their financial responsibilities and ability to pay for their living and educational expenses. Some felt isolated from their family and friends, who were geographically distant, either in Australia or overseas. Participants with parenting responsibilities discussed the challenges associated with 'home schooling' their children during the pandemic including the time required, reduced internet capability for all household members, and interference with their capacity to study. The requirement to undertake clinical placement was difficult for some students who had concerns about contracting COVID-19, and potentially transmitting the infectious disease to at-risk family members and/or housemates.

3.1.4. Increased resilience

In a positive finding, participants reported that enrolment in undergraduate study during the pandemic led to increased resilience. They found an inner strength while dealing with their personal situation, university processes and government guidelines, in a complex and rapidly changing situation.

3.2. Adjustment to new modes of teaching and learning

Participants identified a period of adjustment to new modes of teaching and learning that were introduced in response to physical distancing requirements and social restrictions. Four themes were identified: flexible teaching and new strategies; improved study techniques; fewer face-to-face classes; and quality of teaching strategies and techniques (themes and supporting quotes are provided in Table 3).

3.2.1. Flexible teaching and new strategies

Physical distancing and social isolation due to lockdown rules led to changes in the delivery of teaching and new strategies such as flexible online seminars (theoretical), recorded seminars, online exams, more flexible conditions for extension of assignments, ability to attend intensive simulations, and access to a variety of facilitators. These were

Table 2
Psychosocial effects of the pandemic.

Sub-Theme	Quotes
Reduced motivation	<p><i>I feel very flat and unmotivated as I have so much down time at home that finding motivation to study is hard as I'm at home in the same environment all the time.</i></p> <p><i>It is hard to keep motivated when you are stuck in the same room constantly.</i></p> <p><i>It [lockdown] has decreased my motivation and enthusiasm towards my learning.</i></p> <p><i>I have become less motivated with my studies. I am finding it very difficult to study for a career that is hands on and reliant on human interaction via the internet at home.</i></p> <p><i>Due to the pandemic I have found it extremely difficult to maintain any motivation in regards to completing course work and assessments. I have struggled to imagine any long term goals which also makes it more challenging motivation wise. I have also not had face to face classes to keep me accountable for completing work that would usually help to keep me on top of things and organised.</i></p> <p><i>It's extremely difficult to stay motivated or be productive at home ... therefore, I now often feel like I'm behind and find myself procrastinating a lot more, and getting extensions for every assignment where I normally wouldn't.</i></p>
Mental health affected by isolation and pandemic	<p><i>This makes me feel really depressed, lethargic. I really tried to study but it is really hard to concentrate on my studying.</i></p> <p><i>I have been feeling very anxious and sad which has impacted my study in a negative way.</i></p> <p><i>Have not been able to concentrate and I am falling very behind in my units ... I am so stressed I cannot really enjoy my degree as much.</i></p> <p><i>It has been more difficult to engage in classes and find motivation to complete uni[versity] work. Along with this I have felt a strong sense of aloneness in my studies which has made it a lot more stressful and overwhelming.</i></p> <p><i>Exacerbated my long-standing mental illness with anxiety, depression and an eating disorder...</i></p> <p><i>Since covid my mental health [has deteriorated], due to increased stress, lack of stability, lack of supports ... leading to a need to restart my [mental health medications]. I feel my mental health is still not recovered and I currently am extremely behind on uni [versity] work as a result.</i></p> <p><i>I went through a period of depressive episodes which caused anxiety, impacting my study habits.</i></p> <p><i>My mental and social health has significantly declined due to extremely limited interactions with other students and potential connections I could be making on campus, which has made quarantine extremely lonely and isolating. Having to do the majority of my course online has impacted my mental health greatly as I have been at home for most of this year, and not out and about, seeing other people. This has made me lose sight of my ambitions and goals and impacted me to struggle to continue to believe in myself as I feel I've not been doing my best.</i></p> <p><i>My mental health has really suffered due to Covid-19. I find it hard to complete small tasks and to keep on top of uni[versity] work. I am unmotivated and I don't feel like I can reach out to anyone to help me. Due to the pandemic I feel as though my learning this year has suffered because of a lack of social interaction</i></p>

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Table 2 (continued)

Sub-Theme	Quotes
Competing responsibilities affects ability to focus and engage in learning: (financial stress)	<p>with ... peers and lecturers, a lot of self-learning which has been hard to complete due to mental health status.</p> <p>I feel more worried and anxious than I have ever felt in my life.</p> <p>I am mentally and physically exhausted from having to juggle all that COVID-19 has brought on top of the already stressful course I am completing.</p> <p>I am SO TIRED. A mass amount of placement, assignments, homeschooling and life has meant I feel really unprepared ... it's all just adding up.</p> <p>It's hard to study when all my family is home and want to interact or do their own thing making it hard to study in a quiet environment. Inability to focus entirely on my studies whilst at home has impacted my education this year. The constant interruptions at home during the day and then staying up late to focus on studies has had an impact on my physical and mental well-being.</p> <p>My mental health, stress levels, managing unemployment/re-employment/unemployment, home schooling, family and support network being in Melbourne, and not having assistance to look after children during placement.</p> <p>It has been immensely hard to complete university assignments ... in the midst of the pandemic, when you are stressed as to how you will pay rent or see your family or friends again.</p> <p>Haven't been able to afford textbooks as less work.</p> <p>I lost my job and finding extremely hard to get money for my tuition fees.</p> <p>Remote learning for my primary school children has totally changed my available hours for study and assignment production...I have missed out on many [classes].</p> <p>I live away from my family, and only have my partner as my main support here and his parents don't want him near me during placement. It makes placement an extremely daunting time...</p> <p>While it is a very unique learning experience, being in a hospital or clinic during the pandemic has been quite confronting - especially as I worked in the COVID clinic in one of my placements, including swabbing symptomatic patients for the virus. This was definitely a learning experience, but caused stress as I was aware I had been in contact with possible cases, and thus could contract the virus myself, and bring it home to my family.</p> <p>I learned how to be more resourceful and taught me how to use the available resources that can help me with my online studies.</p> <p>Covid 19 taught me how to be more resilient and still aim for the best despite the hardships that can be experience[d] in these trying times. The pandemic is very relevant to our studies so it's an amazing learning experience to prepare us for our careers. I feel that it has united the cohort more, even though we see a lot less of each other. I feel a greater sense of purpose in my nursing/midwifery practice, the work feels more meaningful.</p>
Building resilience	

mainly seen as positive outcomes arising from the pandemic. Participants were offered the opportunity to attend online seminars, which allowed them to balance their personal commitments with study requirements. The seminars were also recorded allowing students to watch the seminar when they had time to engage in the learning. Arising from

Table 3

Adjustment to new modes of teaching and learning.

Sub-Theme	Quotes
Flexible teaching and new strategies	<p>I was happy about how quickly [the university] converted to online learning and the big range of times available to us for [online seminar] sessions for most subjects.</p> <p>I liked the flexibility and choice of class day/time/facilitator.</p> <p>I really appreciated the flexibility of online learning, and felt this was the most appropriate delivery of education during the pandemic, as it ensured we were not coming on campus and in contact with other students.</p> <p>I have worked full time since starting my degree and often had to miss classes ... now I [can] watch [recorded seminars] after work.</p> <p>I like the recorded seminars that has helped me so much as sometimes I am not quick enough in taking notes and this allows me to process everything being said and take time to think about other possible scenarios.</p> <p>I found online exams less stressful and less intimidating compared to the sit down exams.</p> <p>Assessment extensions have been very helpful in combating the lack of motivation and poor mental health caused by covid and impacting on study.</p> <p>I enjoyed the face-face simulation with only 4 people as it was easier to get through the content and everyone got [to] have a go at the task.</p> <p>I like having multiple teachers online during a class as you get different opinions and tips from each one.</p>
Improved study techniques	<p>The positive side of the pandemic would be having more time to spend on readings, assessments and other things since travelling to the university is omitted on our daily plans.</p> <p>I ... enjoyed studying online and found having to stay home during lockdowns encouraged me to study more as there wasn't much else to do.</p> <p>I watched lectures more than 5 times compared to face to face classes. I had more time to read and find resources to develop my skills and knowledge.</p> <p>More freedom to ask questions on [online seminars].</p> <p>I find being online has given me more confidence to speak up.</p>
Fewer face to face classes	<p>Not seeing the facilitator in person can make it hard for questions or to show something on your laptop [computer].</p> <p>Harder to concentrate in class due to the social disconnect/not being face to face.</p> <p>I need to perform the skill and see it be performed in order for me to understand.</p> <p>Learning skills is hard to do from watching videos and reading texts. I've found it hard during the 2 allocated simulation days as I feel like I need to practice the skill a couple of times to feel confident.</p> <p>I know its only my first year but I'm worried that because I haven't seen a patient or been in the simulation centre as much, that I'm going to struggle when I do go out into the workforce. Being a ... visual learner I am ... struggling to understand certain physical concepts needed for nursing.</p> <p>There's a social aspect involved in attending classes on campus and I miss being able to study and learn with my peers. It feels more lonely just watching my screen at home, where as nursing is meant to be hands on and working as a team. I'm just sad I don't get to spend my final year of university experiencing uni[versity], participating in activities, and being a student.</p> <p>It is difficult not getting to see people on campus.</p> <p>Normally before and after class we would discuss our experiences and placements and learn from each other informally, but this doesn't happen anymore.</p> <p>Being at home to study independently has been incredibly challenging because I am a student who thrives in working in a specified environment to do my best work (classrooms, library etc) and really miss the social aspect of attending university lectures and collaborating with my peers to discuss content and assignments.</p>

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Table 3 (continued)

Sub-Theme	Quotes
Quality of teaching strategies and techniques	<p><i>Being a third and final year student, I feel this could have been the time that great support and relationships were cemented between staff and other students and I feel this has been something I missed out on.</i></p> <p><i>The lack of face to face lectures has affected my learning as I feel you can't 'bounce' ideas off of other students or ask your lecturers more in depth questions.</i></p> <p><i>We could not access the library physically due to restriction rules and sanitation guidelines. Although most references and resources were online, it is still different when you have access to all of it in the library physically. I'm used to going to libraries to study as it's where I can properly focus and get work done, but I can no longer do that as all libraries are closed.</i></p> <p><i>Living rurally in a multiple person household who were all home due to COVID makes accessing [internet] practically impossible.</i></p> <p><i>My internet was interrupted many times.</i></p> <p><i>The teachers are being extremely understanding and supportive in this struggle and continue to help me continue my education.</i></p> <p><i>[The University] have supported all students by providing a range of support services, and training and educating their staff in the online learning environment.</i></p> <p><i>Our facilitators made it more engaging and fun despite the barriers of distant learning.</i></p> <p><i>The facilitators are going above and beyond to ensure all students are able to learn as much as they can, they are also providing a lot of support and I am very grateful for their knowledge and support.</i></p> <p><i>More information and support has been provided in regards to assessments and cloud content to make the material easier to apply in a practical and real world setting.</i></p> <p><i>I'm really grateful for the efforts of the educators at [the University] - they have been so patient and endeavoured to clarify and answer all our questions, especially when there's been a lot of ambiguity surrounding aspects of my course ... Their encouragement and reassurance during weekly seminars ... has made a big difference.</i></p> <p><i>[The University] have been great with its use of technology throughout the teaching setting, I believe the [online learning platform] provides great tools for students to use to advance their learning.</i></p>

physical distancing requirements, exams were facilitated through online platforms, in contrast to prior compulsory attendance in large on-campus group settings. Participants expressed a preference for the convenience of undertaking exams in the comfort of their home and the open book policy. In recognition that students may have had competing demands including 'home schooling' and work commitments, guidelines were relaxed in terms of requirements for approval of assignment extensions. Students appreciated the opportunity for more time to complete assignment tasks. In contrast to the standard allocation of one facilitator per seminar, during the pandemic, at least two academics facilitated online classes. Participants appreciated exposure to different teaching styles which increased their engagement in the seminars. Participants valued the opportunity for practical, hands-on, experiential learning in on campus facilitated simulations.

3.2.2. Improved study techniques

Arising from the changes related to physical distancing rules and lockdown restrictions, most participants attended online seminars from their home. They stated that this led to improved study techniques. Provision of theoretical seminars via online learning platforms meant that students were not required to attend the university for these. The reduced requirements for travel increased the amount of time students had for studying. Some participants also stated they felt more confident to participate in online seminars, compared with face-to-face forums.

3.2.3. Fewer face to face classes

A large proportion described that online learning is not as effective or engaging as face-to-face learning and teaching opportunities. Fewer opportunities to participate in self-directed practice of clinical skills in the Simulation Centre prior to undertaking clinical placement led to reduced confidence. Many participants were disappointed that they were unable to collaborate face-to-face with fellow students, thus missing out on opportunity to share common experiences and information. In addition, students missed being able to access academic staff, in person, for clarification of information and curriculum content. International students indicated they were often isolated from family in a foreign country and raised concerns about their inability to make connections with fellow students in the on-campus setting. For a period during the lockdown period, university libraries were closed. Hence, students had reduced access to on-campus learning spaces which also affected their learning. Some participants reported unreliable wireless network access at home which affected their ability to use online resources, including their ability to join online seminars.

3.2.4. Quality of teaching strategies and techniques

Overall, participants were appreciative of the support they received from academic and professional staff. During this time, participants reported they had adequate access to academic staff in relation to teaching and learning matters. Participants recalled that the teaching was of a high quality which enhanced their engagement in the online seminar groups. Various services, such as one-on-one virtual meetings with academic staff, study support, counselling and online networking, were available to students to support continuation in their courses. Participants reported they had adequate advice and information.

3.3. Concerns about course progression and career

Participants expressed concerns about the impact the pandemic may have on their course progression. Two themes were identified: worries about assessment; and preparation as a registered nurse and new graduate (themes and supporting quotes are provided in Table 4).

3.3.1. Worries about assessment

Participants raised concerns about successfully completing their course and feeling underprepared for theoretical and practical skills assessment. Although participants continued to have on campus face-to-face simulations, these were delivered as intensive sessions over a reduced number of weeks. Participants expressed the concern that this may have affected their learning, in turn affecting development of their clinical skills. In their view, this may have negatively affected their preparation for clinical skills assessment and preparedness for clinical placement.

3.3.2. Preparation for being a registered nurse and new graduate

As the number of COVID-19 positive cases increased in Victoria, many clinical placements at health services were cancelled. A small of participants reported having scheduled clinical placement cancelled multiple times, which led them to being worried about whether they would finish the course in a timely way to qualify for graduation, and then commence employment in the forthcoming year. This was of specific concern for the final year students, who also expressed concerns about their level of preparation for future employment as a registered nurse or midwife, mainly arising from their lack of confidence about using clinical skills.

4. Discussion

Nursing and midwifery undergraduate students indicated multiple impacts on their learning experiences during the COVID-19 pandemic. Changes to their personal, academic and working life affected their psychosocial well-being; they had to adjust to new modes of teaching

Table 4
Concerns about course progression and career.

Sub-Theme	Quotes
Worries about assessment	<p>Placements being cancelled and rescheduled is very stressful, especially for a final year student where there are multiple time-sensitive priorities (e.g. graduate year applications) that have been affected due to having placements rescheduled ... This has caused me to fall behind in study and therefore affected my performance during simulations.</p> <p>As a nursing student, it has made it difficult to learn the assessment techniques ... It is making me very worried that I will be terrible when coming to the [skills assessment] as I have had little hands on practice.</p> <p>I don't feel prepared or like I have a good knowledge set.</p> <p>COVID-19 has brought on a lot of stress and anxiety for me, when I was already experiencing that being in my last year of uni. Its caused me a lot of trouble with getting assignments done and being able to focus on and understand class work.</p> <p>I am a distinction/high distinction ... student and last semester I scored the lowest grade I have ever received in a unit in my whole degree, and I am confident that covid influenced this.</p> <p>I feel like this year I have taken so many steps backwards and that it will undoubtedly have an effect on my ... marks.</p> <p>I feel unprepared to graduate. I feel extreme worry and concern if I were ... to [pass] a skills hurdle assessment.</p> <p>The pressure placed on students to undergo learning and completing new skills in one hour is immense and very anxiety evoking and not everyone can work well under pressure, which will cause failures.</p> <p>I feel further behind and less motivated to complete my studies, I feel as though my grades overall have been impacted because of this.</p> <p>I am concerned that I will be delayed in my learning due to not learning the skills as normal and this will affect my placement assessments and ability to graduate.</p> <p>Unable to practice all skills, resulting in feelings of being unprepared for placement.</p> <p>I am unable to attend regular simulations which has impacted by ability on placement to perform skills. Students do not feel prepared at all for placement or to become real nurses.</p> <p>I just feel like I'm not prepared for clinical placement because I haven't been able to really practice the skills.</p> <p>The thought of doing placement and then a graduate year is so daunting now (where I previously had been excited) because I feel online classes do not suit me best.</p> <p>Haven't had the same enriched learning experience and feel less prepared for my upcoming graduate [nursing] year.</p> <p>Not being able to practice skills in simulation makes me really anxious for the future of my nursing career - I feel like I'm going to be incompetent as a graduate nurse].</p> <p>Not being able to full[y] learn the content and not having enough time to properly learn the skills necessary for the clinical placement and for the future as an RN.</p> <p>I have been worried about my competency on placement and how completing this course during COVID will disadvantage me in the long run as a nursing student and eventual nurse when graduated.</p>
Preparation as a registered nurse and new graduate	

and learning; and they had concerns about course progression and career advancement.

4.1. Online learning experience

The participants reported needing to learn to adapt and be flexible, especially in the context of the rapid change from face-to-face teaching to online education at the start of the pandemic. Some participants reported increased confidence because on-line learning suited them. In particular, online learning gave them more time to reflect on their learning and they could access learning material at convenient times; hence they felt they managed both their learning and their time better. Growing confidence in nursing students was similarly reported in the context of the Middle East Respiratory Syndrome (MERS) outbreak in Saudi Arabia (Moawad, 2020). Strategies introduced in response to the MERS outbreak included support programs to meet the educational and psychological needs of nurses (e.g., education in infection prevention and control measures) and a helpline to inform anxious nursing students and their families about risks and to offer support (Stirling, Harmston, and Alsobayel, 2015). Other factors that assisted students to feel confident were highlighted in a UK MERS COVID-19 response study, which found that online learning activities needed to be flexible and adapted to the students' availability (Leigh et al., 2020). In addition, as Mashaa'1 et al, 2020 highlights, the stress levels among nursing students related to sociodemographic characteristics like family income, very low-income families, students who used smartphones for distance learning, students who found payment for internet services to be a financial burden, and students who had no private place to study.

Other studies reported that the use of digital technologies increased students' confidence during the COVID-19 pandemic (Ng and Or, 2020). These findings resonated with our study findings where participants reported that online learning provided them with the opportunity to include more activities into their days due to reduced requirements to travel to university or for some students to clinical placements too, as well as learning at diverse times that suited them. The participants in our study also highlighted their appreciation about having flexibility in submitting assessments, which helped them to manage university requirements. International studies conducted among nursing students in Singapore (Seah, Ang, Liaw, Lau, and Wang, 2021) and Spain (Ramos-Morcillo et al., 2020) similarly found that students appreciated efforts by universities to accommodate, or respond flexibly, to their needs. Many participants in our study explained the benefits of and embraced the swift change to online learning; however, their experiences differed depending on their social circumstances and learning style.

4.2. Psycho-social impact on students

Mental health concerns were prominent for most participants. They indicated high levels of anxiety, and a lack of motivation in relation to their learning. Previous research prior to the pandemic identified that nursing students experience higher levels of anxiety compared with the general population (Cheung and Au, 2011; Savitsky et al., 2020; Simpson and Sawatzky, 2020). Another study established that anxiety increased significantly among nursing students during a previous pandemic (Cheung and Au, 2011). This study found that anxiety negatively affected nursing students' performance when undertaking a treatment procedure during the Severe Acute Respiratory Syndrome (SARS) epidemic in Hong Kong. High anxiety levels have also been reported in a Chinese survey, where approximately one-quarter of college nursing students reported experiencing anxiety because of the current COVID-19 pandemic (Cao et al., 2020). Protective factors against anxiety were found to be living in urban areas, living with parents, and having a steady family income. In contrast, having a relative or an acquaintance infected with COVID-19 was an independent risk factor for experiencing anxiety (Cao et al., 2020). In addition, a Saudi Arabian

study of university students (Moawad, 2020) reported that uncertainties around progression and assessment in their academic program had an impact on students' mental health, with similar findings among nursing students in Singapore (Seah et al., 2021) and Spain (Ramos-Morcillo et al., 2020). These findings are not surprising given many nursing and midwifery students' exposure to infectious environments and direct patient care. However, the challenge for academic institutions and health services is that they should provide protective measures such as access to counselling, financial support, and networking opportunities to maintain students' confidence and psychosocial well-being to support students to continue their learning to complete in their academic course.

Knowing that the social isolation during lockdown had an impact on nursing and midwifery students' psychosocial well-being, it is important to be aware of the particular needs of international students. It is highly likely that they felt more isolated being in a foreign country and a lack of opportunity to make connections with fellow students in the classroom setting. They also had limited opportunities to practice their English language, which might have had a negative impact on their learning, general mental well-being and coping (Simpson and Sawatzky, 2020). Culture has been found to play an important role in how undergraduate nursing students experience and cope with the 'new normal' during the COVID-19 pandemic (Kochuvilayil et al., 2021) when comparing Australian and Indian nursing students. This study found that while Australian nursing students had higher anxiety generally, Indian students reported significantly greater anxiety regarding the health of their loved ones in comparison to the Australian group.

The lack of motivation for learning which was reported by most participants in our study during the prolonged lockdown period of 7 months in Victoria, highlights the importance of psychosocial support and integration of programs that accommodate different learning styles. Our findings align with studies by Simpson and Sawatzky (2020) and Haslam, 2021 who found that increased online learning requires more motivation towards self-directed learning and better time-management than traditional methods. For some students, online activities affords more flexibility to balance lifestyle and family/working commitment (Haslam, 2021). However, like in our study, some participants are challenged by home-based learning because of poor study techniques, a lack of motivation, and reduced opportunities to communicate with fellow students and academic staff (Haslam, 2021). These factors might also have an impact on the psychosocial well-being of nursing and midwifery students and thereby heighten their anxiety levels (Simpson and Sawatzky, 2020) and in turn decrease their motivation (Ramos-Morcillo et al., 2020). Literature indicates that protective factors to lessen anxiety relate to clarity about study pathways to complete studies and accommodation of different learning styles (Kochuvilayil et al., 2021; Moawad, 2020). Academics therefore need to provide assurance to students about the effectiveness of varied ways of learning to minimise anxiety or stress caused by concerns related to academic progress (Kochuvilayil et al., 2021). Morin (2020) highlights the importance of academics differentiating between offering emergency online learning and ongoing robust online learning programs. Assurance and support to students was particularly important in the clinical learning environment.

4.3. Clinical placement

Most participants reported concerns about undertaking their clinical placements as they struggled to manage sudden changes in their clinical placement allocation, had fewer opportunities to practice skills, and worried about being infected and/or transmitting the COVID-19 virus to family or household members. Clinical placement is an essential requirement for nursing and midwifery students' professional development (Spence et al., 2019)(Ramos-Morcillo et al., 2020). At the height of the pandemic, nursing and midwifery students were seen as important to the health workforce, and government initiatives strived to maintain timely completion for final year students. At the university where this study was undertaken, all final year student clinical placements were

prioritised and as a result all students had the opportunity to complete course requirements, including required clinical placement hours, ensuring their eligibility for professional registration.

Studies among nursing students during previous infectious disease outbreaks indicate that clinical skills can be learnt in simulation sessions supported by online videos and other material (Hayden, Smiley, and Gross, 2014; Sullivan et al., 2019) and that different delivery methods accommodate diverse learning styles, which in turn also benefits student learning. This resonates with some of our students' preferences for flexible learning modes as long as there was assurance that these pathways led to timely completion of the course and their clinical assessments. The latter was one of the main concerns because participants reported they did not feel adequately skilled to enter clinical practice.

Another major concern for participants related to their fear of being infected with COVID-19. Provision of education in infection prevention and control and the opportunity to develop skills to care for infectious patients is integral to students feeling safe in the clinical environment (Goni-Fuste et al., 2021); hence this particular university increased their teaching of infection prevention in simulations, for example how to don and doff PPE in each simulation. A Belgian cross-sectional study of nursing students during the COVID-19 pandemic found that support from both the nursing school and clinical agencies was essential for them to feel safe when entering the clinical environment (Ulenaers, Grosemans, Schrooten, and Bergs, 2021). Preparing students with specific skills to practice safely during infectious disease outbreaks is essential, along with regularly testing for COVID-19, provision of PPE, frequent organisational communication, and robust policy and procedure (Ulenaers et al., 2021). In addition, mentoring or supervision is even more important for student learning during a global pandemic than under normal circumstances (Goni-Fuste et al., 2021; Ulenaers et al., 2021).

5. Limitations

Several limitations must be considered. The data collected occurred in a relative short period of time and was initiated from a university offering students more frequent simulation learning opportunities than generally offered in other Victorian universities at this time. There might also be bias due to participation being voluntary; students with extreme positive or negative views may have been more likely to participate; however the high student response rate indicates that a range of views and experiences have been captured. Because the data were collected during the early stages of the pandemic, adaptation to new circumstances on social, learning, and psychological levels may have been substantial and might have had an impact on cognitive, psychological, and social impact on the students. It is possible third year students experienced higher levels of stress compared with first- and second-year students arising from concerns about course progression. However, this differentiation needs evaluation through a psychometric approach which is beyond the scope and purpose of this paper.

6. Conclusions

This study explored the impact of the COVID-19 pandemic on well-being and learning among nursing and midwifery undergraduate students at an Australian university. Whilst this was identified as a stressful time, participants were appreciative of different and flexible teaching modes that allowed them to balance their study, family and paid employment responsibilities. Support from academic staff was highly regarded. Recommendations arising from this research include: the provision of additional psychosocial support and integration of innovative teaching and learning strategies such as flexible delivery modes and interactive online methods; the provision of additional supports to increase student motivation to engage in their learning, such as specialised counselling and social networking opportunities; and the use of clear and timely communication of risk management strategies during clinical placement to help reduce stress and anxiety for nursing and midwifery students.

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CRediT authorship contribution statement

The following contribution were allocated to:

- 1) conceived and designed the survey (Rasmussen, Lowe, Kerr, Hutchinson, Manias, Wynter).
- 2) performed the experiments (N/A).
- 3) analyzed and interpreted the data (Rasmussen, Wynter, Hutchinson, Manias, Lowe, Kerr, McTier, McDonnell).
- 4) contributed to analysis (all authors).
- 5) wrote paper (Rasmussen but all authors were involved and reviewed paper several times).

Declaration of Competing Interest

There are no conflicts of interest for any authors.

Availability of data and materials

The authors may submit the raw data, on reasonable request from other researchers or centres.

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Conflict of Interest

The authors declare no conflict of interest.

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