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The lived experience of women studying nursing online in regional, rural and remote areas: an integrative literature review

Keden May Montgomery^{1,2*}, Kathie Ardzejewska³, Alison Casey⁴ and Rosemarie Hogan⁵

Abstract

Background There is a critical shortage of registered nurses working in regional, rural and remote Australia. It is the people from these areas that are most likely to address this shortage. This research therefore sets out to explore the question “what is known about the experiences of regional, rural and remote Australian women undertaking a Bachelor of Nursing program delivered online?”

Methods The methodology was an integrative literature review which included: 1) problem identification, 2) literature search, 3) data evaluation, 4) data analysis and 5) conclusion. Articles identified as part of the review explored different aspects of the research question.

Results Using thematic analysis, it was possible to extrapolate four interrelating themes: (1) juggling ‘women’s work’ and study, (2) the online learning environment is isolating, (3) the cost of clinical placement, and (4) maintaining overall wellness while studying.

Conclusion The literature consistently failed to explore the intersection of the complex challenges facing these students. What is important about this integrative literature review, however, is that the themes identified provide a small and incomplete insight into the experiences of such women, and with a workforce shortage already in play and students continuing to withdraw from their studies, there is a need to find a way to better serve regional, rural and remote Bachelor of Nursing students and their communities.

Keywords Nurse education, Online learning, Rural women

Background

There is a critical shortage of registered nurses working in regional, rural and remote (RRR) Australia, with only 28% of nurses choosing to practise in these areas [1]. Nursing students living in RRR areas are the most likely

people to address this shortage [2, 3]. The problem is, however, higher education students from RRR areas are an identified equity group who experience poorer educational outcomes in comparison to their metropolitan counterparts. For example, even if they were to consider nursing as a career, RRR students are 40% less likely than students from metropolitan areas to gain a tertiary level qualification at all, and 50% less likely to gain a Bachelor degree by the age of 35 [3]. Despite such challenges, supporting students to remain in RRR areas while they study reduces the need for students to relocate to metropolitan areas and subsequently promotes the opportunity to continue to live and work in RRR areas during and after graduation, reducing the nursing shortage.

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The Regional, Rural and Remote Tertiary Education Strategy [3] called for action to improve educational opportunities and outcomes for RRR Australians. This integrative literature review aims to identify:

“what is known about the experiences of regional, rural and remote Australian women undertaking a Bachelor of Nursing program delivered online?”

Ultimately, the result of the literature review is to determine the direction for future research that in turn could better understand the experiences of and subsequently improve the retention and completion rates of women studying nursing in regional, rural and remote (RRR) Australia, and ultimately redress the workforce shortage of one of Australia’s vulnerable populations.

Methods

The methodology is an integrative literature review adapted from the processes outlined by Whitemore and Knafl [4] which included: 1) problem identification, 2) literature search, 3) data evaluation, 4) data analysis and 5) conclusion. Articles identified as part of the review explored different aspects of the research question. Together, the articles help to draw an understanding of what is known about this topic, and where there is clearly opportunity for further research and understanding.

Inclusion criteria

The inclusion criteria are identified below in Table 1: RRR women Bachelor of Nursing (BN) students; qualitative research or qualitative findings from mixed methods research in order to hear their voices; English language

publications matching the researcher’s first language; and articles published since 2010 when the online BN degree was formally accredited [5]. All articles which focussed on BN degrees were included, as were online undergraduate programs with similar external accreditation requirements, requiring a blend of online learning and face to face attendance, on-campus, and on clinical placement. Articles which focussed on a single component of the BN, such as clinical placement, and articles which focussed on the experiences of students studying in RRR Australia were included. Articles which focused on the experiences of Australian students were included. Although the research aims to capture the experiences of women specifically, articles with a non-gender specific focus also met the inclusion criteria for the purpose of the integrative review, due to the lack of available research highlighting women’s voice specifically.

Exclusion criteria

Exclusion criteria included those articles which did not meet the inclusion criteria outlined below in Table 1.

Database searching

A systematic search of databases was undertaken between August-December 2021 using keywords and Medical Subject Headings (MeSH) combined with Boolean operators are outlined below in Table 2. Keywords were organised around the five parts of the research question: women; regional, rural and remote; Bachelor or Nursing; online mode and lived experience. Terms were trialled and refined in consultation with university research librarians to ensure an evidence-based and systematic approach. The Authority, Accuracy, Coverage, Objectivity, Date, Significance (AACODS) Checklist [6, 7] was employed to evaluate grey literature, with grey literature being identified as any literature not formally published in a journal database. The Mixed Methods Appraisal Tool (MMAT) [8, 9] was utilised when determining relevance of mixed-methods research to the research question. In addition to searching grey literature and journal databases, manual searching through reference lists of included articles also occurred. This process was undertaken to ensure relevant articles that may have been missed were identified [10]. Twenty-four journal databases were searched including: CINAHL Plus with Full Text, JBI EBP Database, PubMed, Cochrane Library, Informit Health Collection, Internurse, JAMA Network, ScienceDirect—Health Sciences Collection, Scopus, A+Education, Education Source, Education Resource Information Center (ERIC), FiNDit, Academic Search Ultimate, Computers and Applied Sciences Complete, Google Scholar, Humanities & Social Sciences Collection,

Table 1 Inclusion criteria

	Inclusion
Population/type of participants	Students living in regional, rural or remote areas Women Non gender specific Undergraduate university students
Context	Published since 2010 BN programs Online undergraduate programs with similar blended learning and external accreditation requirements
Outcomes	Experiences, views, perceptions
Study designs	Qualitative research Discussion articles Mixed methods research Reviews Grey literature Full text available

Table 2 Search terms

Question part	Search terms
Lived experience	Experience* OR lived experience OR phenomenolog* AND
Women	Wom#n OR female* OR mother* OR gender AND
Regional, rural and remote	Regional OR rural OR remote OR isolated OR non-metropolitan AND
Undergraduate	Undergraduate AND
Nursing	Tertiary education OR study OR learn* OR higher education OR nurs* OR registered nurse OR pre licensure nurs* OR pre-registration nurs* OR nurs* program OR nurs* course OR nurs* science OR student nurse OR nurs* student AND
Online	Blended learning OR online learning OR online OR distance learning OR distan* OR off campus mode OR computer-based learning OR computer-based education OR online course OR online degree OR remote learning OR remote education OR online program OR blended classroom OR blended mode OR online classroom OR mixed mode OR online mode OR blended mode OR blended education

The PRISMA flow diagram [10] below outlines the systematic review process (see Fig. 1)

IDP Database of Research in International Education, Australian Public Affairs—Full Text, Indigenous Collection, JSTOR, SocINDEX with Full Text, Taylor & Francis Online and Trove.

Results

Abstracts were reviewed against the inclusion criteria (Table 1). Excluded articles were held in an individual file and reviewed by the research team to identify whether any had been excluded in error. Three articles were subsequently determined as meeting the inclusion criteria. Due to the diverse representation of the literature, and that it was also agreed no one article answered the research question, using the process of Whitemore and Knafel [4], each selected article was coded according to two key criteria: methodological rigour and relevance to the research question. When coding, a score of one or two was applied, with one indicating the highest methodological rigour and relevance to the research question. A score of two did not exclude the article, however it meant that the article was assigned a lesser weight during the analysis stage. After the researcher applied the coding, the team undertook a blind coding of the articles, confirming the scoring, adding another layer of rigour to the analysis.

A table was constructed outlining each article's author, title, country of origin, purpose, methodology, participants, key findings, limitations and score out of two [4, 11, 12] (Table 3). The table facilitated the systematic comparison of the articles and served as the starting point for interpretation.

Using a qualitative analytical method, the articles were first presented in a review matrix (Table 3) as suggested by Braun and Clarke [22] and subsequently ordered and

categorised according to their primary focus [4]. Inductive “complete coding” identified new themes that were relevant to the research question, p. 206 [23]). These codes were then collated into early themes. Four inter-relating themes were identified: (1) juggling “women’s work” and study, (2) the online learning environment is isolating, (3) the cost of clinical placement, and (4) maintaining overall wellness while studying. Importantly, no one theme stands alone but shows the intersection of complex challenges facing this group of students.

Juggling “women’s work” and study

Almost half of the articles explored a theme of juggling responsibilities ($n=9$). It was clear that while women were expected to continue meeting assessment due dates, attending clinical placement allocations, and on campus face to face learning requirements, they also typically held caring responsibilities within their family units and these responsibilities were not understood or supported by their partners or their universities. Students reported simultaneously completing domestic work, caring for children and older parents, as well as working full or part time hours to meet financial responsibilities while studying [13]. Women also reported feeling tired and stretched, with guilt resulting in students considering withdrawing from their degree. In fact, these responsibilities outside of study made it difficult for women to feel like they belonged at university and was a common barrier to success [13, 16, 17, 19]. Partners of women in heterosexual relationships were reluctant to accommodate the time demands of university study, seeing study time as associated with leisure time and a burden that must be carried alone by the woman [14]. Some women also spoke of partners who were actively obstructive, behaviours

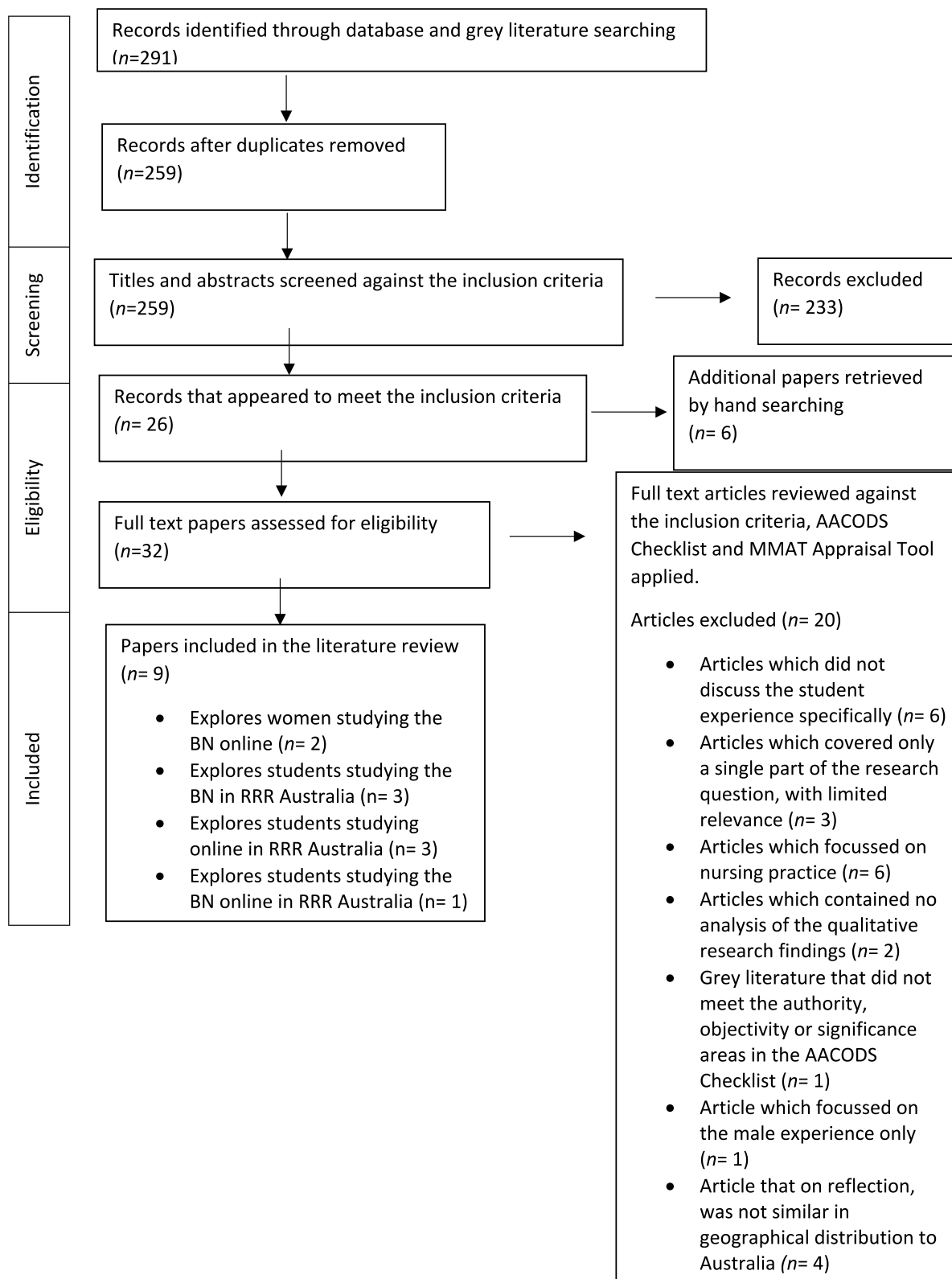


Fig. 1 PRISMA flow diagram (Page et al., 2020 [10])

Table 3 Summary of included articles

Author	Title	Purpose	Methods	Participants	Key findings	Limitations	Score
Andrew, L., Costello, L., Robinson, K., & Dare, J. (2021a) [13] Australia	Going-it alone: the university progression of women nursing students who are the first person in their intimate relationship to go to university	Explore the experiences of women nurse students, focusing on those who are the first person in their intimate relationship to enter HE	Qualitative longitudinal study with semi structured interviews	29 Women	<ul style="list-style-type: none"> Juggling domestic responsibilities Caring responsibilities Work responsibilities Unsupportive partners Added pressure of community responsibilities for RRR students Lack of sense of belonging 	<ul style="list-style-type: none"> Some students were from RRR areas but not all All students were in heterosexual relationships 	1
Andrew, L., Robinson, K., Dare, J., & Costello, L. (2021b) [14] Australia	Widening the lens on capital: conceptualising the university experiences of non-traditional women nurse students	Interpret the experiences of 28 mature-age women Bachelor of Nursing students and the factors influencing commencement and progression	Qualitative study with semi structured interviews	52 Women	<ul style="list-style-type: none"> Juggling family responsibilities Unsupportive partners Study as leisure time Relationship breakdowns Face to face demands 	<ul style="list-style-type: none"> Some students were from RRR areas but not all All students were in heterosexual relationships Not all students were studying in an online mode 	1
Bradley, D., Bourke, L., & Cosgrave, L. (2020) [15] Australia	Experiences of nursing and allied health students undertaking a rural placement: Barriers and enablers to satisfaction and wellbeing	To investigate the lived experiences of nursing and allied health students on placement in rural and regional Victoria. Its purpose was to identify the enablers and barriers most strongly affecting placement satisfaction and personal wellbeing	Qualitative study with semi structured interviews	18 Women and men	<ul style="list-style-type: none"> Communication barriers Clinical placements far away from home Commitments outside of university not considered Paid work Childcare 	<ul style="list-style-type: none"> The experience of women not highlighted specifically Both nursing and allied health students included Not all students were studying in the online mode 	1
Crawford, N. (2021) [16] Australia	"On the radar": Supporting the mental wellbeing of mature-aged students in regional and remote Australia	Explore the experiences of mature-aged students who are in an from regional and remote Australia, to more deeply understand the diversity and complexity of equity group cohorts, as well as the need to understand more about how universities can proactively support students' mental wellbeing	Concurrent transformative mixed-methods design with semi structured interviews	51 Women and men	<ul style="list-style-type: none"> Challenging study environment at home Juggling responsibilities of student and parent Lack of sense of belonging Cost of travelling long distances Road integrity 	<ul style="list-style-type: none"> All students were mature aged The experience of women not highlighted specifically 	1

Table 3 (continued)

Author	Title	Purpose	Methods	Participants	Key findings	Limitations	Score
Quilliam, C., Crawford, N., & McKinstry, C. (2021) [17] Australia	Building a rural workforce through identifying supports for rural, mature-aged nursing and allied health students: A systematic scoping review	To scope factors influencing rural, mature-aged nursing and allied health students' ability to access, participate, and succeed in higher education	Scoping review of student experience	14 articles Women and men	<ul style="list-style-type: none"> Juggling domestic and caring responsibilities with study Communication issues Financial pressures 	<ul style="list-style-type: none"> The experiences of women not highlighted specifically All students were mature aged Both nursing and allied health students included 	1
Ragusa, A.T., & Crampton, A. (2018) [18] Australia	Sense of connection, identity and academic success in distance education: sociologically exploring online learning environments at an Australian rural university	To investigate what students perceived most affected their academic success when learning by distance education at an Australian rural university	Mixed methods using phone interviews	122 Women and men	<ul style="list-style-type: none"> Sense of isolation when studying in RRR areas Disconnection Online learning environment inferior to on campus 	<ul style="list-style-type: none"> The experiences of women not highlighted specifically Both nursing and allied health students included 	2
Stone, C., & O'Shea, S. (2019a) [19] Australia	Older, online and first: Recommendations for retention and success	To examine the nature of the higher education online student experience with a focus on women aged 25 and over	Qualitative in depth interviews	74 Women	<ul style="list-style-type: none"> Dual identity of student and carer Guilt and tiredness Juggling multiple roles Financial responsibility and challenges University didn't appreciate life outside of university 	<ul style="list-style-type: none"> Not all students were in RRR areas All students were mature aged The voices of Bachelor of Nursing students not highlighted specifically 	1
Stone, C., & O'Shea, S. (2019b) [20] Australia	My children ... think it's cool that Mum is a uni student: Women with caring responsibilities studying online	To explore the experiences of women studying higher education degrees online	Qualitative in depth interviews	77 Women	<ul style="list-style-type: none"> Impact of gender Complex additional responsibilities Domestic and caring responsibilities more important than study 	<ul style="list-style-type: none"> Not all students were in RRR areas All students were mature aged The voices of Bachelor of Nursing students not highlighted specifically 	1
Wozniak, H., & McEl-downey, R. (2015) [21] Australia	Layers of transition: the lived experiences of online distance learners	To closely examine the lived experiences of regional online Bachelor of Nursing students who are managing a complex world of study, work and family life and build institutional responses to the realities experienced by such student cohorts	Qualitative interviews	5 Women and men	<ul style="list-style-type: none"> Juggling responsibilities including family, financial, other caring, community Life outside of university not appreciated Inflexible learning design 	<ul style="list-style-type: none"> Small sample size The experiences of women not highlighted specifically 	1

ultimately resulting in relationship breakdowns which had a profound effect on student success and progression [13, 14]. Despite these challenges, students did not experience university systems responsive to their needs [14]. Instead, the intersecting web of responsibilities experienced by women, coupled with unresponsive university systems results in students feeling disconnected from their universities and courses, primarily because that space does not seem to recognise their responsibilities as being an integral part of their experience [14].

The online learning environment is isolating

Students reported feeling overburdened trying to navigate the learning journey as isolated outsiders, experiencing little technological support in the online learning environment [14], [McEldowney, 2015]. Challenges with technology including poor and unreliable internet service impeded participation in online tasks and downloading online resources was a problem for RRR students due to download speed [19]. Students also reported feeling disconnected and isolated in their online learning environment [17–19]. Their decision to study online was not seen as a choice but as the only option to access study from a RRR area, exacerbating their sense of isolation and feeling as though they were ‘outsiders’ to the learning environment [21]. For example, students highlighted how the on-campus cohort felt superior [18–20].

There was also confusion with the perception in students’ understanding of an online enrolment where “flexibility” meant they chose where, when and the pace at which they studied. Instead, students explained rigid requirements of a course designed and taught for on campus students, including compulsory attendance at synchronous activities. The “office hours” approach to staff availability was reported as not in keeping with the needs of students, leaving them feeling unsupported [19].

The cost of clinical placement

Clinical placement was identified as a key challenge to success in all studies. Aspects of the curriculum, including clinical placement allocation without consultation between the university and students, was found to be detrimental to student retention and success [13–16]. Students were often allocated far away from home and were given little time to adequately plan to address commitments outside of university [15, 16]. The added complexities of travel that students face were also highlighted: needing to ensure they have a suitable car to travel long distances, sometimes on unsealed roads and in the dark along remote roads with wildlife; increased cost of fuel; and communication challenges where

internet and telephone services were unreliable [16]. There was also a significant lack of empathy and support when students experienced illness while undertaking unpaid clinical placement in RRR areas, with rigid university processes requiring students to provide contemporaneous evidence of their illness in accordance with the university’s policy, which was difficult to obtain in rural areas where a GP service was only open during limited times [19].

Maintaining overall wellness while studying

The inability to maintain mental, financial, social and physical wellness while undertaking the BN emerged as a consistent theme. This was clearly a significant challenge for women with dual identities of carer and student, needing to maintain financial wellbeing while successfully engaging in the degree [19]. Unpaid clinical placement had a negative spiral effect, limiting the capacity for students to succeed in their studies [14]. Individual circumstances, such as family breakdowns and new financial conditions were not acknowledged by universities as a specific reason alone to provide additional support, making these challenging times incompatible with ongoing success with studies [14, 19].

At home, partners often saw women’s studies as a hobby and pushed them to prioritise paid work over study [19]. Financial costs also resulted from the negative consequences of being away on clinical placement for extended periods of time or where clinical placement was too far to be able to continue to work on weekends. This was also exacerbated by high fuel costs and car maintenance [16]. Where exams were not available online as part of an online enrolment, women also felt at a disadvantage having to pay for childcare on these days [17, 19]. Students reported there was no budgeting support or easily accessible scholarships or subsidised options to support their financial wellness while undertaking the course, despite the multiple additional costs associated with undertaking the degree that could not be transferred to Higher Education Loans [17, 19].

Maintaining a healthy study-work-life balance also emerged as an important theme across the studies. Students described the need to put their personal lives on hold while they completed clinical placement, often missing regular sports and gym sessions. This ultimately impacted both their physical and mental health [16], with students reporting feeling isolated from support networks and the academic environment [17]. The stress of competing social and academic demands led to sacrificing both sleep and spending time with family and friends, resulting in students lowering their

personal achievement expectations. Emotional trauma and stress also affected students greatly, resulting in lower grades and ultimately leading to attrition [13].

Discussion

It is known that there is great disparity across tertiary education participation and attainment rates between RRR and metropolitan individuals [3]. The Regional Education Expert Advisory Group [3] reported that curriculum is designed for the lives of metropolitan students, impacting RRR student success. Bachelor of Nursing student characteristics include non-traditional enrolment categories of mature-aged, female, first in family, RRR geography, and low-socioeconomic status. This information supports that intersectional issues occur for RRR students enrolled in Bachelor of Nursing degrees specifically, resulting in unique challenges that inhibit success.

In this literature review, juggling “women’s work” with study inhibited study success as the complex responsibilities held by women were not understood or acknowledged by their partners or universities. This is significant because approximately 90% of BN students are female, and over half of these are mature aged (defined as older than 20 when enrolling [24]). Juggling “women’s work” and study impacts on learners’ success [25]. As acknowledged by Therborn [26], gender inequality is a complex and intersectional issue. The themes are in keeping with other research demonstrating that women are disadvantaged by social expectations and roles that include childcare, family responsibilities and domestic work which result in inequities in accessing higher education [27] and that the system of education itself, as well as the way in which society is structured traditionally, culturally and politically, can be significant barriers to a woman’s success in education [28]. In most western countries domestic duties continue along traditional gendered expectations and mature age women are more likely to have responsibilities associated with caring roles for children or older parents. Inflexible university learning and teaching expectations limit student success with regard to these responsibilities [26].

This literature review highlighted the intersecting challenges students experience when studying online. Regional, rural and remote learners explained that studying online was not necessarily their preferred learning style, but the only way they could access the degree.

One solution that has been proposed to rapidly address the nursing workforce shortage is to increase online offerings of the Bachelor of Nursing [29]. While an online enrolment option means increased opportunity to study for those living in RRR areas, those studying online experience higher attrition and lower completion rates than those students who study on campus [24, 30–33]. As this

literature review has shown, this is related often to a poor learning experience and lack of technological support. Lakhal and Klechine [34] who explored mature aged students from a broad range of disciplines concur with the results of the literature review. Their results led them to posit that gender, age and prior online course experience are variables which need to be understood when analysing the online learning experience. Further challenges for online learners in RRR areas include social dislocation, access to pastoral support and guidance, and establishing a sense of belonging within the online space [35]. Given the non-traditional age and gender characteristics of RRR, BN online learners, there may be further learning and opportunity for success that can be explored through a better understanding of these intersecting challenges.

Clinical placement was identified as a key challenge to success across all studies in this literature review. In Australia, to qualify and register as a nurse an individual must successfully complete an Australian Nursing and Midwifery Accreditation Council (ANMAC) accredited program. In all BN programs, including where students enrol in an online mode, there is a minimum number of hours students must spend face to face, engaging in simulation-based learning activities and clinical placement [5]. Bachelor of Nursing students need to complete at least 800 h of unpaid clinical placement throughout their degree [5]. Many students work part time hours to accommodate for the need to care for children or older family members [3], however BN students also need to complete their clinical placement on a fulltime basis with little flexibility offered [36]. As this review has shown, online nursing students need to travel long distances under difficult circumstances to reach campus and clinical placements. The Regional Education Expert Advisory Group [3] have demonstrated that this contributes to student attrition. Jafarian-Amiri et al. [37] too has noted the impact of compulsory clinical placements allocated at short notice and/or in locations far from home. The need to arrange childcare and leave from paid work can pose significant challenges for students, with intersecting challenges experienced by students in RRR areas where there is likely to be difficulty accessing childcare and accessing flexible working arrangements shown in this literature review and in the work of Stone and Davis (2020). The need to apply for leave from work at short notice is negatively perceived by workplaces and some students are not able to maintain regular paid employment throughout the degree, ultimately resulting in the need to prioritise paid work over pursuing study [36]. Over 30% of RRR students are reported to be from low socioeconomic backgrounds [3]. Students from RRR areas generally face increased financial pressures through their socioeconomic disadvantage and this result in early termination

of their studies. In fact, over 30% of students from RRR locations cite financial pressure as the reason for leaving university, in comparison to 21% of metropolitan students [3, 38]. University policy and systems for clinical placement allocation are generally not supportive of individual student circumstances [36]. The studies in this literature review certainly suggest they are not. This lack of support substantially negatively affects the student experience. Looking more closely at how women experience the face to face requirements of the BN, such as clinical placement, while living in RRR areas will provide an evidence base for supportive ways in which these students can be retained within and successfully complete their studies.

In addition to financial pressure, students in the studies in this literature review also reported that health and stress were their greatest concerns impacting study success. This concurs with data from Quality Indicators for Learning and Teaching [QILT] [38]. Specifically, over 50% of RRR students cited stress as the most common reasons for departing their degree, compared with 44% of metropolitan students. There are significant challenges BN students face when looking to maintain a healthy work-study-life balance. The need to attend face to face learning on campus and at clinical placement reduces the time that can be spent being involved in regular sporting and community activities. Research by Luders et al., [36] agrees. Not knowing when or where a clinical placement will be allocated is obstructive to a regular study pattern and students constantly feel the need to adapt. A loss of sense of control is a common feature as students are told when and where they must go, without a period of consultation or consideration of life outside of study [36]. While these challenges are identified for BN students generally, the impact of these challenges when compounded with rurality, gender and online learning has not yet been explored.

Strengths and Limitations

To our knowledge, this is the first study which extensively reviews the literature regarding the experience of women studying nursing online in regional, rural and remote areas. A strength of this study is the rigorous search strategy and way in which it provides a lens in which one can start to view the experiences of the students, while highlighting that the intersection of these challenges has not yet been explored. A limitation of this study is that only articles published in English have been included, whereas rural and remote online nursing education is an option provided in non-English speaking countries. This may impact the global generalisability of the results of this study as well as limit the insight provided into student experiences across cultures.

Conclusion

No studies have been found that collectively explore the lived experiences of women studying a Bachelor of Nursing in the online mode in RRR Australia. The studies included in this review provide some limited insight into women or BN students or online learning or RRR student perspectives individually, meaning this paper provides evidence that currently available literature consistently fails to explore the intersection of the complex challenges facing these students. Using thematic analysis, this study was able to extrapolate four themes: (1) juggling “women’s work” and study, (2) the online learning environment is isolating, (3) the cost of clinical placement, and (4) maintaining overall wellness while studying. What is important about this integrative literature review, is that the themes identified provide a small and incomplete insight into the experiences of such women, and with a workforce shortage already in play and students continuing to withdraw from their studies, there is a need to find a way to better serve regional, rural and remote Bachelor of Nursing students and their communities.

Authors’ contributions

K.M wrote the main manuscript text and prepared the tables and figures. K.A, A.C and R.H contributed to the methodology, editing and review of the manuscript text, figures and tables.

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Data availability

All data generated or analysed during this study are included in this published article [and its supplementary information files].

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

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Competing interests

The authors declare no competing interests.

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