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Community participation and belonging during rural nursing placements in Queensland: A cross-sectional study

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Abstract

Background

Rural professional experience placements for nursing students are an important strategy for strengthening the future rural nursing workforce. While social connectedness and belonging are increasingly recognised as important outcomes of rural placements, quantitative evidence examining nursing students' sense of community remains limited. This study examined nursing students' perceptions of belonging and community connectedness during rural professional experience placements and explored associations with community engagement, interaction and rural placement experiences.

Methods

A cross-sectional survey was conducted with undergraduate nursing students who had completed a rural professional experience placement within public health services located in rural and remote Queensland, Australia. Data were collected using an online questionnaire comprising demographic and placement-related items, measures of community interaction and participation, and the Brief Sense of Community Scale. Non-parametric tests were used due to non-normal data distributions. Descriptive statistics, Spearman's rank-order correlations, Mann-Whitney U tests, Kruskal-Wallis tests, Wilcoxon Signed Rank tests, and chi-squared tests were used to analyse associations between community engagement, placement experiences, and belonging.

Results

A total of 153 students participated. Students reported more frequent community interaction during placement than within their home communities (p = .007) but participated in a broader range of community activities at home (p = .005). Placement duration was associated with greater community interaction (p = .023) but not belonging. Female students reported significantly stronger belonging than males (p = .009). Belonging differed according to the number of previous rural placements completed (p = .022). Belonging was not significantly associated with the frequency of community interaction (p = .268) although was positively associated with the breadth of community participation during placement (ρ = .188, p = .044) and within home communities (ρ = .225, p = .015), suggesting that active participation may be more important for fostering belonging than exposure alone.

Conclusion

Belonging during rural nursing placements is shaped through the interaction of placement exposure, community participation, and repeated rural experiences. While exposure creates opportunities for

engagement, belonging is most strongly associated with participation in community life. Supporting meaningful community participation may strengthen belonging and enhance future rural workforce capacity.

Background

Rural and remote communities worldwide experience persistent health workforce shortages and difficulties in recruiting and retaining health professionals. [1] These workforce inequities contribute to reduced access to healthcare services and poorer health outcomes compared with metropolitan populations. [1]

Similar challenges exist within Australia, where rural and remote communities continue to experience significant nursing workforce shortages affecting the sustainability and equity of healthcare delivery. [2, 3] Small rural towns are disproportionately impacted by the workforce shortages, resulting in service gaps, delayed access to care, reduced continuity, and increasing workload pressures for existing healthcare professionals. [4] Despite sustained policy attention and workforce initiatives, rural health services continue to face difficulties in attracting and retaining nurses, contributing to poorer health outcomes for rural populations. [3]

Strengthening rural nursing workforce pipelines therefore remains a national priority, with undergraduate nursing education increasingly recognised as a critical period for shaping students' perceptions of rural practice and supporting future workforce capacity. [3] Rural Professional Experience Placements (PEP) are a key strategy employed by universities and health services to expose nursing students to rural clinical environments and models of care. [5–8] These placements enable students to develop clinical competence while gaining insight into the distinctive features of rural healthcare, including broader scopes of practice, interprofessional collaboration, and closer relationships with patients and communities. [7]

However, growing evidence suggests that students' experiences of rural placements are shaped by more than clinical learning alone. [9, 10] While PEPs have traditionally focused on developing clinical competence and exposing students to rural models of care, emerging research highlights the importance of social connectedness, belonging, and community integration in shaping placement experiences and future rural workforce intentions. [7, 9] Despite this, these social dimensions have received comparatively less attention within placement design and evalution. [9, 11] Students who feel welcomed, supported, and socially connected to supervisors, staff and community members during placement experiences report enhanced learning, greater confidence, and stronger motivation to pursue rural practice following graduation. [9]

For nursing students undertaking rural placements, feeling welcomed, included, and valued within both the workplace and the broader community supports learning, confidence, and professional identity

development. [12–14] Conversely, experiences of isolation or exclusion, particularly in geographically distant placements, can negatively impact students' wellbeing and perceptions of rural practice. [10] Rural placements may present heightened risks of social isolation due to physical distance from established peer networks, limited local social opportunities, and unfamiliar community environments. [9] Understanding how students experience community connection during rural placements is therefore essential to ensuring placements are not only educationally sound, but also socially supportive. [12, 14]

A sense of community is a multidimensional construct encompassing feelings of belonging, mutual influence, fulfilment of needs, and shared emotional connection within a group or place[9]. McMillan and Chavis[15] conceptualised a psychological sense of community as comprising four core dimensions: membership, influence, integration and fulfilment of needs, and shared emotional connection. Within rural contexts, these dimensions may be especially salient due to the visible role that communities play in shaping social interactions, cultural norms, and support networks. [16] For nursing students undertaking rural PEP, developing a sense of community may support integration, mitigate experiences of isolation, and strengthen professional socialisation and identity formation. [9]

Despite growing recognition of the social dimensions of rural PEP, much of the existing research has relied on qualitative or mixed methods approaches. [10, 11, 17, 18] While these studies provide valuable insights into students lived experiences, there remains limited quantitative evidence using validated measurement tools to examine a sense of community, particularly within rural nursing placement contexts. Quantitative approaches can complement qualitative findings by providing systematic and replicable assessments, enabling comparisons across placement settings and experiences. [19, 20] Furthermore, little is known about whether belonging is associated with the frequency of community interaction or the breadth of community participation during rural placements. Addressing this gap is important to inform evidence-based strategies that support students' social wellbeing and engagement during rural placements.

Understanding nursing students' sense of community during rural PEP has important implications for rural health services and host communities seeking to enhance placement quality, sustainability, and student wellbeing. Accordingly, this study examines nursing students' sense of community and social connectedness during rural PEP and explores associations between these measures and experiences of socialisation within rural placement contexts. Overall, the study aims to contribute to the rural health education literature and inform universities, rural health services, and host communities in developing socially inclusive and supportive rural placement environments.

Method

Study design

A quantitative, cross-sectional survey design was employed to examine nursing students' perceptions of sense of community and social connectedness during rural PEPs at one regional university. The study focused on identifying aspects of rural placement and community experiences that support students' socialisation, integration, and feelings of belonging. A priori sample size calculations determined that a minimum of 100 participants was required to achieve a 95% confidence level with a ± 5% margin of error. Participation was voluntary, and informed consent was obtained prior to survey completion. This study is reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines[21] for cross-sectional studies.

Setting and participants

Participants were undergraduate nursing students who had completed a rural PEP as part of an accredited Australian Bachelor of Nursing program. In Queensland, public healthcare is organised into geographically defined Hospital and Health Services (HHS), which are responsible for delivering regional health services across designed catchment areas. Placements were undertaken South West and Darling Downs Hospital and Health Service. Together, these regions span approximately 409,000km^2, an area comparable in size to Germany, and supports a combined population of approximately 320,000, equating to a population density of approximately 0.78 persons per km^2. [22, 23] The regions encompass communities classified as Modified Monash Model (MMM) categories 4–7, ranging from medium rural towns to very remote communities. [24] The MMM is the Australian Governments' official geographic classification system, categorising locations according to population size and remoteness from metropolitan centres[24]. Placements within the Darling Downs footprint were predominantly located in MMM4-5 communities, whereas the South West footprint predominantly comprised MMM6-7 communities, with one MMM4 location. Consequently, the South West footprint encompasses more geographically dispersed and remote communities than the Darling Downs footprint. [22, 23] Placement sites within the Darling Downs footprint were generally located within approximately four hours' drive of Brisbane (metropolitan city), whereas some South West placement locations were situated more than 10 hours' drive form Brisbane, highlighting the substantially greater remoteness and travel distances associated within the South West region. [22, 23] Nursing students were eligible to participate in the study if they had completed at least one rural placement with a minimum duration of four weeks. A minimum duration of four weeks was required to ensure participants had sufficient opportunity to interact with local communities and develop experiences relevant to community engagement and belonging.

Data collection

Data were collected using an online, self-administered questionnaire distributed to nursing students following completion of their rural PEP. The survey comprised of demographic items (e.g., age and gender), placement-related items (e.g., including placement duration, location and previous rural placement experience), and questions relating to community interaction and participation. Students

were asked to report the frequency of interaction with both their placement and home communities and indicate participation in a range of social, recreational, and community-based activities undertaken within each setting. The survey was designed to examine students' experiences of community engagement, social connectedness, and sense of belonging during rural placement and within their home communities, using a concise format to minimise respondent burden.

Measures of community engagement

Community engagement was assessed using questionnaire items developed for this study. The community engagement items were developed based on findings from previous rural placement literature and the study aims. Students were asked to report the frequency of interaction with members of both their placement community and home community. Responses were recorded using an ordinal scaled ranging from "never" to "very often". Students were also presented with a list of recreational, social, and community-based activities and asked to indicate which activities they participated in within both settings. Activities included participation in community events, local sports teams, volunteering, fitness classes, outdoor recreation, social gatherings, and other community-based pursuits. The total number of activities undertaken within each setting was calculated to provide a measure of the breadth of community participation, allowing examination of whether frequency of interaction and breadth of participation were differently associated with belonging.

Brief Sense of Community Scale

Sense of community was measured using the Brief Sense of Community Scale (BSCS), an eight-item instrument grounded in McMillan and Chavis' theory of psychological sense of community. [15, 25] The BSCS assesses four domains: membership, influence, integration and fulfilment of needs, and shared emotional connection, with two items representing each domain. [25] Items are rated on a five-point Likert scale ranging from "*strongly disagree*" to "*strongly agree*", with higher scores indicating a stronger perceived sense of community.

The BSCS offers a theoretically grounded and psychometrically validated measure of psychological sense of community across the four domains proposed by McMillan and Chavis. [25] Although widely applied in community psychology research, its use in nursing education and rural placement research remains limited. Applying the BSCS within the context of rural nursing placements provides an opportunity to examine students' experiences of belonging and connectedness using a rigorous yet minimally burdensome instrument.

The BSCS has demonstrated acceptable to strong internal consistency and construct validity across diverse populations and community contexts, with reported Cronbach's alpha values coefficients ranging from 0.77 to 0.94 across subscales. [25] In the present study, item wording was adapted to reflect the rural placement and community context while retaining the original item structure and response format.

Internal consistency reliability of the adapted BSCS was assessed using Cronbach's alpha and demonstrated excellent reliability within the study sample (α = .969). The brevity of the BSCS makes it well suited to health education research involving student populations and facilitates the identification of generalisable patterns across placement settings.

Data analysis

Data were analysed using IBM Statistical Package for the Social Sciences (SPSS) (Version 31.0.1.0). [26] Descriptive statistics were used to summarise participant demographics, placement characteristics, community engagement variables and BSCS scores, including means, standard deviations, frequencies and percentages. Cases with missing BSCS data were excluded from analyses involving belonging and community connectedness, while other analyses were conducted using available data. Internal consistency reliability of the BSCS was assessed using Cronbach's alpha coefficients, with values of ≥ 0.70 considered indicative of acceptable reliability. [27]

Preliminary analyses indicated that several variables were non-normally distributed. Accordingly, non-parametric statistical tests were used. Associations between continuous and ordinal variables were examined using Spearman's rank-order correlation coefficients. Group differences were examined using Mann-Whitney U tests and Kruskal-Wallis tests, while paired comparisons between placement and home community measures were assessed using Wilcoxon Signed Rank tests. Associations between categorical variables were examined using chi-squared and Fisher's Exact tests. Data were considered statistical significance when $p < .05$.

Ethical consideration

Ethical approval

for the study was obtained from the University of Southern Queensland Human Research Ethics Committee (Approval number: **BLINDED FROM REVIEWER**). All study procedures were conducted in accordance with the Declaration of Helsinki and applicable ethical guidelines. All participants provided informed consent prior to participation.

Results

To address the study aims, analyses examined factors associated with community interaction, community engagement, and belonging. Results are organised into six sections that explore participant demographics and placement characteristics, patterns of community engagement during rural placement and within home communities, the influence of placement characteristics on community participation, factors associated with belonging and community connectedness, the relationship between rural placement experience and belonging, and associations between community engagement

and belonging. Particular attention was given to whether the frequency of community interaction and the breadth of community participation are associated with belonging and community connectedness.

Demographics

A total of 153 undergraduate nursing students completed the survey, representing a response rate of 38.3% from 400 eligible participants. Thirty-five participants had incomplete BSCS data and were excluded from analyses requiring complete BSCS responses, resulting in 118 cases available for reliability analysis. Analytical sample sizes for subsequent analyses ranged from 105 to 115 depending on response of key questions.

Participants ranged in age 19 to 58 years (M = 32.35 years, SD = 9.54). The sample was predominantly female (80.0%, n = 92), and most students completed a four-week rural placement (63.5%). Most students had not previously completed a rural placement (75.4%), highlighting that, for many participants, the placement represented an early exposure to rural practice settings. Among students who reported previous rural placement experience, most had completed only one or two prior placements, indicating relatively limited cumulative rural placement exposure across the cohort. Table 1 summarises participant demographics and placement characteristics and presents analyses examining associations between these variables and community interaction frequency. Gender and placement duration were significantly associated with community interaction frequency, whereas age and history of living rurally were not (Table 1).

Table 1
Participant demographics, placement characteristics, and factors associated with community interaction frequency

Characteristic	n	%	Statistic	*p*-value
Gender (n = 115)				
Female	92	80.0	*U* = 726.50	.017*
Male	23	20.0		
Placement duration (n = 115)				
4 weeks	73	63.5%	*U* = 1153.50	.023*
8 weeks	42	36.5%		
History of living rurally (n = 80)				
Yes	33	41.3	*U* = 685.00	.364
No	47	58.7		
Previous rural placement experience (n = 118)				
Yes	29	24.6		
No	89	75.4		
Number of previous rural placements completed (n = 68)				
0	36	52.9		
1	11	16.2		
2	10	14.7		
3	8	11.8		
4	1	1.5		
5	2	2.9		
Age (years)				
Mean (SD)	32.35 (9.54)		*ρ* = .150	.112
Range	19–58			

* $p < .05$ indicates statistical significance.

The following analyses examine patterns of community engagement during rural placement and within students' home communities. Comparisons were undertaken to explore whether students engaged differently across these settings and to identify demographics and placement factors associated with community interaction. Particular attention was given to understanding where opportunities for

engagement during placement differed form established patterns of community participation within students' usual communities. For comparison purposes, students were also asked about community interaction and participation within their home communities, defined as the communities in which they ordinarily resided when not undertaking rural placement.

Community engagement during rural placement and at home

Patterns of community engagement differed between placement and home settings. Overall, community interaction during placement was moderate, with 36.6% of students reporting interactions with the local community (often or very often), 33.0% reporting interacting sometimes, and 30.4% reporting rare or no interaction while undertaken PEP. Female students reported significantly higher levels of community interaction than male students ($U = 726.50$, $p = .017$). In contrast, neither age ($\rho = .150$, $p = .112$) nor a history of living rurally ($U = 685.00$, $p = .364$; $\chi^2(4) = 1.91$, $p = .752$) was associated with community interaction frequency during placement. More than half of students (54.7%) reported rare to no interaction with their home community, and no significant associations were identified between interaction frequency and age, gender, or history of living rurally.

Students reported significantly more frequent interaction with the community members during placement than within their home communities ($Z = 2.684$, $p = .007$). Community interaction frequency within home communities was moderately associated with interaction frequency during placement ($\rho = .407$, $p = < .001$), indicating that students who reported greater engagement within their home communities were also more likely to engage during placement. A strong positive association was also observed between the number of community activities undertaken within home communities and during placement ($\rho = .724$, $p = < .001$). Students who participated in a broader range of community activities at home also tended to participate in a broader range of activities during placement.

While the preceding analyses examined interaction frequency, the types of community activities undertaken were also explored. During rural placement, students primarily engaged in informal recreational and social activities, including visits to local pubs and wineries (45.8%), attending community events (22.2%), hiking and nature walks (21.6%), swimming (20.3%), and participating in local tours (17.0%). Participation in structured, community-based activities such as volunteering, community groups and educational programs were uncommon (Fig. 1).

Activity participation within home communities was also examined to provide context for students' usual patterns of community involvement. The most frequently reported activities included community events (26.8%), fitness classes (24.8%), swimming (20.9%), hiking and nature walks (19.6%), camping (17.6%), local sports teams (17.0%), and running or cycling activities (16.3%).

Comparison of the two settings indicated that students were more likely to participate in organised and recurring activities within their home communities than during placement. Notable differences were observed for fitness classes (24.8% vs 7.8%), local sports teams (17.0% vs 7.2%), volunteering (10.5% vs

0.7%), and camping (17.6% vs 2.6%). Consistent with these patterns, students participated in significantly more community activities overall within their home communities than during placement (Z = 2.807, p = .005), completing an average of 2.41 activities at home compared with 1.86 activities during placement.

Placement characteristics and community engagement

To further explore factors associated with community engagement, analyses were conducted to examine whether placement characteristics influenced students' opportunities for community participation during rural placement. Placement characteristics were associated with some aspects of community engagement (Table 2). Students undertaking eight-week placements reported significantly more frequent community interaction than those undertaking four-week placements. Differences were also observed between the two health service footprints, with students in one footprint participating in a significantly greater number of community activities overall than students in the other footprint. These findings suggest placement context may influence opportunities for community engagement during rural placement.

Table 2
Placement characteristics associated with community engagement

Outcome	Group	Mean Rank	Test Statistic	*p* value
Community interaction frequency	4-week placement	52.80	*U* = 1153.50	.023
	8-week placement	67.04		
Total community activities	Health service footprint 1	44.76	*U* = 957.00	.005
	Health service footprint 2	60.78		

* $p < .05$ indicates statistical significance.

Sense of belonging and community connectedness

Following the examination of community engagement, analyses explored associations between participant characteristics, placement experiences, community engagement variables, and a sense of belonging as measured by the BSCS. Overall, participants reported a moderate sense of belonging, with a mean BSCS score of 22.44 (SD = 8.77) and a median score of 22.00 (IQR = 13.50).

Associations between participant characteristics and BSCS scores are presented in Table 3. Gender was the only demographic characteristic significantly associated with belonging, with female students reporting higher BSCS scores than male students (p = .009). No significant associations were observed between BSCS scores and age, placement duration, rural living history, placement location, or health service footprint. Students who had previously completed a rural placement reported higher BSCS

scores than those with no previous rural experience (p = .045). In addition, the number of previous rural placements completed was significantly associated with belonging (p = .022), indicating differences in BSCS scores across placement-experience categories.

Table 3
Factors associated with BSCS scores

Variable	Group	Median BSCS (IQR)	Test Statistic	*p*-value
Gender	Female	24.0 (15.0)	U = 686.00	.009*
	Male	16.0 (9.0)		
Placement duration	4-week	20.0 (12.5)	U = 1412.50	.482
	8-week	23.0 (15.25)		
Previous rural placement	No	18.0 (13.0)	U = 970.50	.045*
	Yes	24.0 (13.0)		
Health service footprint	Footprint 1	22.0 (11.0)	U = 1348.00	.603
	Footprint 2	21.5 (15.0)		
Number of previous placements	0	16.0 (5.75)	H = 13.201	.022*
	1	17.0 (8.0)		
	2	24.0 (15.0)		
	3	26.5 (17.0)		
	4	34.0[+]		
	5	34.0 (4.0)		

[+] Only one participant had completed four previous rural placements; therefore, an IQR could not be calculated. * p < .05 indicates statistical significance.

Associations between community engagement variables and BSCS scores are presented in Table 4. Frequency of community interaction during placement was not significantly associated with belonging (p = .268). Likewise, BSCS scores did not differ according to home-community interaction frequency (p = .521). In contrast, participation in a greater number of community activities was associated during placement (p = .044) and within home communities (p = .015) was positively associated with BSCS scores.

Table 4
Correlations between community engagement and BSCS scores

Variable	n	Spearman's ρ	p-value
Community interaction frequency during PEP	115	.104	.268
Number of community activities during PEP	115	.188	.044*
Number of community activities at home	115	.225	.015*

* $p < .05$ indicates statistical significance.

Discussion

This study provides evidence that belonging during rural nursing placements is shaped through the interaction of placement exposure, community participation, and repeated rural experiences, highlighting the importance of community integration in fostering belonging and community connectedness. While longer placements increased opportunities for community interaction, and previous rural placement experience was associated with stronger belonging, the strongest associations with belonging were observed for participation in community activities undertaken both during placement and within home communities. Collectively, these findings suggest that exposure creates opportunities for engagement, participation facilitates relationship building and social integration, and repeated rural experiences may support the development of community connectedness and belonging over time.

Community participation and belonging

Belonging was strongly associated with the breadth of community participation during rural PEP. Students who participated in a greater range of community activities reported stronger belonging. Notably, the breadth of participation was more associated with belonging than the frequency of community interaction. While interaction with community members may provide opportunities for engagement, simply having more frequent contact may be insufficient to foster belonging. Interaction may involve brief or superficial encounters, whereas participation requires active involvement within community activities and social networks. [15, 28] In contrast, participating across a diverse range of community activities may expose students to different social groups, settings, and experiences, creating opportunities for relationship building, social integration, and shared community experiences. [9, 17, 28] Participation in meaningful activities has been proposed as a mechanism through which individuals develop connectedness and belonging because active involvement facilitates social interaction, community integration and engagement in shared experiences. [17, 28, 29]

Previous qualitative research has identified participation in community activities, opportunities for social interaction, and relationship building as important influences on students sense of belonging during rural placements. [10, 11, 17] Consistent with McMillan and Chavis' theory of psychological sense of community, the present study findings suggest that belonging may emerge through meaningful participation,

fulfilment of needs, and shared emotional connection rather than contact alone. [15] Participation in meaningful activities has similarly been associated with increased connectedness, social integration, and opportunities for individuals to develop a sense of belonging within their communities. [28] Previous research has also highlighted the importance of socialisation, relationship building, sense of place, and place attachment in shaping students' experiences of rural environments and their future engagement with rural communities. [9, 17, 29] Participation across diverse activities may therefore strengthen belonging by providing broader opportunities to establish social connections, develop familiarity with local people and places, become integrated into community life and experience a sense of inclusion and shared purpose within the community. [17, 28, 29]

Placement communities and home communities

An important distinction emerged between placement and home communities. Rural placements promoted more frequent interaction and opportunities for exploration whereas home communities supported broader participation through established social networks and ongoing activities. These findings are consistent with previous studies describing rural placements as important opportunities for socialisation and community exposure because they enable students to interact with residents, explore unfamiliar environments, develop new social connections, and gain insight into rural community life. [9, 10, 14]

However, the present study suggests that exposure and integration represent distinct constructs. Students were able to interact regularly with placement communities without necessarily reporting stronger belonging. In contrast, home communities provided opportunities for repeated engagement across diverse activities, potentially supporting stronger social ties, fulfilment of needs, and emotional connection, all central dimensions of psychological sense of community. [15, 16]

One possible explanation is that interactions within placement communities often occur during the early stages of community engagement, when students are exploring unfamiliar environments, forming initial connections, and learning about local people and places. [10, 14] While these interactions may facilitate exposure to community life, they may not provide sufficient opportunities for the development of deeper social relationships or a sense of membership within the community. [15, 16, 28] In contrast, home communities are characteristics by established relationships, ongoing participation, and repeated engagement across multiple social settings. [16, 28]

Through these experiences, individuals may develop stronger social networks, a greater sense of familiarity and a deeper attachment to place, all of which have been identified as important contributors to belonging and community connectedness. [9, 17, 29] Together, these findings suggest that belonging may be strengthened not simply through exposure to a community, but through repeated opportunities to participate in community life, develop meaningful relationships, and become integrated within local social networks. [9, 16, 17, 28]

Placement duration and repeated rural placement experience

Sustained engagement with rural communities emerged as another important influence on belonging. While placement duration was not directly associated with BSCS scores, students undertaking longer placements reported significantly greater community interaction. Similarly, students who had previously completed a rural PEP experience reported stronger belonging than those with no previous rural PEP experience, while belonging increased progressively with the number of rural PEPs completed. Together, these findings suggest that both longer and repeated placements may create opportunities for engagement that contribute to the development of belonging over time. [30–32]

These findings are consistent with Terry et al., [33] who identified that increased frequency and duration of rural placements positively influenced students' perceptions of rural practice. Likewise, Smith et al., [30] highlighted the importance of community engagement, social interaction, and integration into local life in shaping students' connections to rural communities through a process called ruralisation. Together, these findings indicate that repeated rural exposure may support socialisation, deeper community connection and belonging within rural settings. [30, 33]

A possible explanation is that longer and repeated placements provide opportunities for students to move beyond initial exposure and towards deeper social and community integration. Consistent with Levett-Jones et al's., [31] description of belonging, students require time to 'settle in', become familiar with people, routines, and community culture, and move beyond initial feelings of being outsiders before they feel comfortable participating fully within their placement environment. Similarly, Kern et al., [32] described belonging as a process through which students' progress from positioning themselves within a new environment towards gaining acceptance, participation, and access to richer learning and socialisation opportunities.

Repeated exposure may allow students to revisit familiar communities, strengthen existing social and professional networks, and develop a deeper understanding of rural lifestyles and practice contexts. [31, 33] As familiarity increases, students may participate more confidently in community life, build stronger relationships with community members and health professionals, and develop a greater sense of place. [30–32] These findings imply that longer and repeated placements may provide cumulative opportunities for participation and relationship building, allowing students to progressively transition from visitors within a community to recognised and connected members of that community. Through this process, social integration and community connectedness may strengthen, fostering belonging over time rather than through exposure alone. [30, 31, 33]

Gender and belonging

Female students reported significantly stronger belonging, higher levels of community interaction and greater participation in some community activities than male students. Although the reasons for these

differences cannot be determined from the current study, previous research suggests that experiences of belonging are closely linked to social participation, inclusion, relationship building, and opportunities for shared community experiences. [29] Women often describe belonging through friendship formation, social engagement, and participation in shared activities, with these experiences contributing to broader wellbeing and community integration. [29]

Research examining male nursing students and men studying within traditionally female professions provides an additional perspective on these findings. For example male students have reported experiences of marginalisation, heightened visibility, and challenges establishing a sense of belonging within predominantly female educational and clinical environments. [34, 35] They may experience being perceived as different from their peers, encounter gendered expectations, or feel excluded from informal social networks that facilitate integration. [34, 35] Men studying nursing, social work and education have also described difficulties developing a sense of belonging due to standing out within predominantly female cohorts and navigating expectations associated with their profession. [35] These experiences may influence access to social networks, willingness to participate in group activities, and opportunities for community integration. Consequently, lower participation in community activities among male students may not simply reflect individual preferences but may also be shaped by experiences of visibility, marginalisation, and reduced opportunities for social connection within the PEP environment. [34]

Implications for rural placement practice

The findings from this study indicate that strengthening belonging during rural PEP may require more than simply increasing placement duration. While exposure remains important, universities, rural health services, and host communities may need to work collaboratively to create opportunities for meaningful participation in community life. Activities that encourage students to engage with social, recreational, cultural, and community networks may provide pathways for relationship building, social integration, and community connectedness. Universities, rural health services, and host communities may therefore benefit from actively supporting student involvement in recreational, cultural, social and community-based activities as part of PEP planning.

The strong association between engagement behaviours at home and during PEP also raises important questions regarding student readiness for community participation. Students who were more actively engaged within their home communities were also more likely to engage during PEP, suggesting that existing patterns of community involvement may influence placement experiences. This finding suggests that community engagement during rural placement may be influenced by both pre-existing patterns of community participation and the available of opportunities for engagement within the placement setting. Consequently, strategies that actively facilitate community participation may help strengthen engagement and belonging among a broader range of students. While the current finings do not suggest that rural PEP should be preferentially allocated to students who are already highly engaged, they do highlight the potential value of identifying factors that promote community participation and belonging. Understanding these relationships may assist educators and placement providers to better

tailor support strategies and maximise the benefits of rural placements across a broader range of students.

Equally, rural placement outcomes may be strengthened through active collaboration with host communities to create meaningful opportunities for participation, social connection, ad inclusion. Such approaches may help students move beyond community exposure toward genuine integration within rural communities. Collectively, the findings support the proposition that belonging is fostered through community integration, participation in community life, and the accumulation of rural experiences over time, rather than through demographic characteristics or community exposure alone.

Limitations

This study is subject to several limitations. Participants were drawn from a specific rural placement context within Queensland at one university, which may limit the transferability of findings to other settings. In addition, the cross-sectional design prevents causal inferences regarding the relationship between community engagement and belonging, and all measures were based on participant self-reporting, which may be subject to recall and response bias. Missing responses for some variables reduced sample sizes for selected analyses. Some individual placement locations contained very small participant numbers, limiting statistical power to detect differences between sites. To address this, additional analyses were undertaken at the health district level to provide a broader comparison of placement contexts. Future studies involving larger multi-site samples are needed to better examine the influence of placement location and regional context on community engagement and belonging.

The findings relating to gender should also be interpreted with caution. Male students represented only a small proportion of the sample, limiting the ability to draw firm conclusions regarding gender differences in belonging and community engagement. Future research involving larger and more gender-balanced samples is required to explore these relationships in greater depth. Furthermore, the study was not designed to explore gender-specific mechanisms underpinning belonging. Future research should examine whether differences in community participation, socialisation patterns, or experiences of inclusion contribute to gender differences in belonging during rural placements.

Future research should also adopt longitudinal approaches to better understand how belonging develops over time and across multiple rural placements. The findings suggest complex relationships between placement duration, community participation, repeated rural exposure and belonging. Longitudinal and pathway analyses may help determine whether these factors influence belonging directly, or whether their effects occur indirectly through increased opportunities for participation, social integration, and community engagement. Such approaches would provide a more detailed understanding of the mechanism through which rural placement experiences contribute to belonging and community connectedness.

Conclusion

Belonging during rural nursing PEPs is shaped through the interaction of placement exposure, community participation, and repeated rural experiences. While longer and repeated rural placements create opportunities for students to interact with communities, develop familiarity, and build social connections, exposure alone may be insufficient to foster belonging. Instead, belonging develops through active participation in community life, relationship building, social integration, and the accumulation of meaningful rural experiences over time. The findings indicate that supporting belonging requires more than placing students in rural communities for longer periods. Universities, rural health services, and host communities may need to work collaboratively to create opportunities for meaningful engagement in recreational, social, cultural, and community-based activities that facilitate participation and connection. The strong association between engagement behaviours at home and during placements also suggests that students may differ in their readiness or predisposition to participate in community life, highlighting the need for strategies that support engagement among diverse student groups. Future research should further explore how student characteristics, placement experiences, and host community initiatives interact to foster belonging and community connectedness during rural placements, and how these processes may contribute to strengthening the future rural nursing workforce.

Declarations

Ethics approval and consent to participate

Ethical approval for the study was obtained from the University of Southern Queensland Human Research Ethics Committee (Approval Number **BLINDED FROM REVIEWER**). All study procedures were conducted in accordance with the Declaration of Helsinki and applicable ethical guidelines. All participants provided informed consent prior to participation.

Consent for publication

Not applicable

Competing interests

The authors declare no conflicts of interest.

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Author Contribution

JE contributed to the conceptualisation, investigation, data curation, formal analysis, methodology, visualization and writing – original draft preparation. DT contributed to conceptualisation, methodology, formal analysis, supervision and writing – review and editing. LE and LR contributed to the conceptualisation, supervision and writing – review and editing. All co-authors reviewed the manuscript and approved the final manuscript for publication.

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Data Availability

The data are not publicly available because they contain information that could compromise the privacy of the research participants.

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Figures

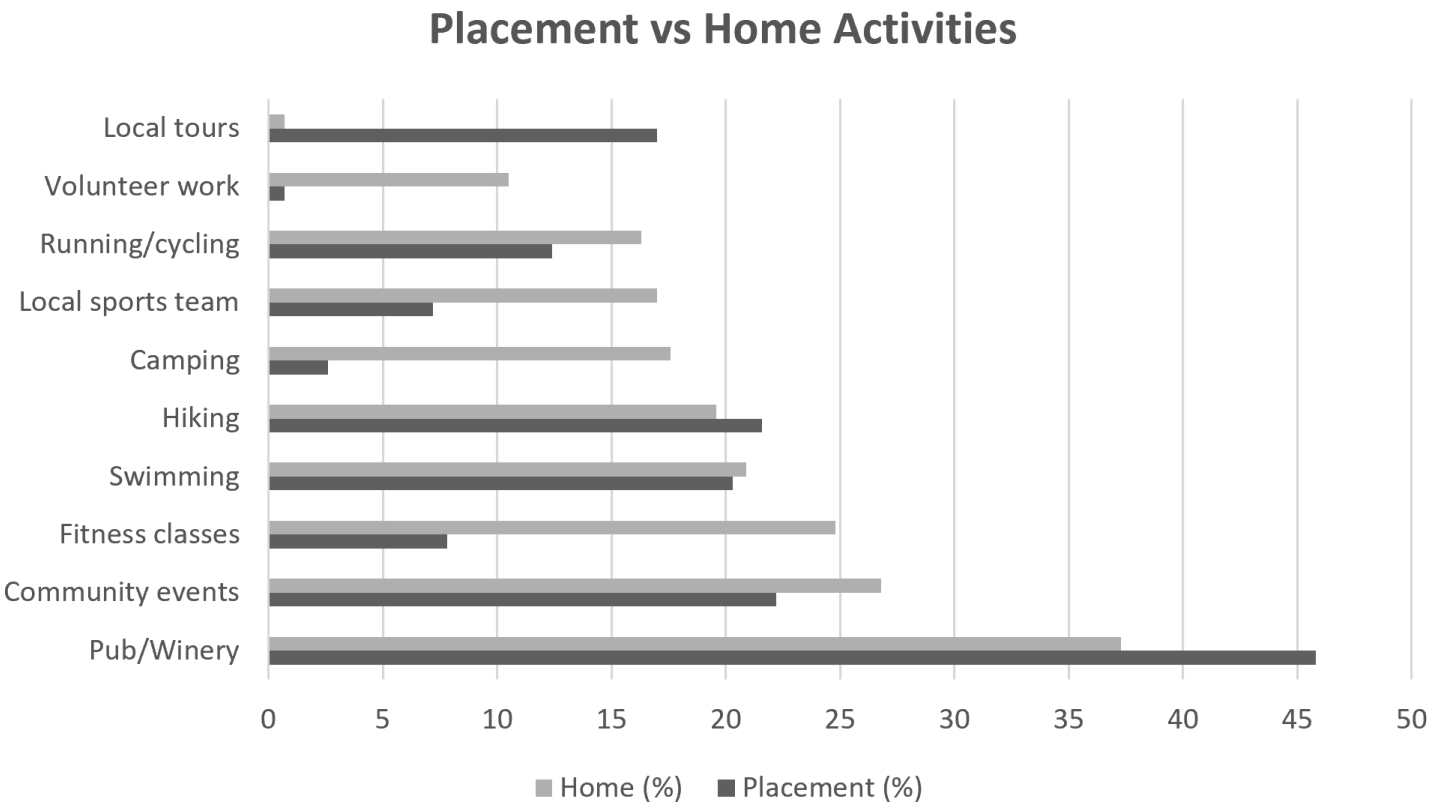


Figure 1

Community engagement activities undertaken during placement and within home communities.