

Impact of rural and remote clinical placements on future intention to practice

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Abstract

Background: Living in rural and remote areas decreases health equity due to the health workforce shortages experienced in these locations; this is particularly experienced by our Indigenous population. To address this, there has been an increased number of students participating in rural and remote clinical placements. **Aim:** To identify factors that both encourage and limit students from participating in rural and remote healthcare placements whilst simultaneously assessing future intent to work in these areas. **Methods:** Australian students undertaking a degree in health completed an online survey distributed via the National Rural Health Student Network in 2021. **Results:** A total of 508 students from across 27 universities and 15 health disciplines completed the survey. More than half of the respondents had completed a placement in a rural or remote area. Most students were satisfied, or very satisfied, with the placement, which appears to be linked to an intention to return

to rural and remote locations to work. Exposing students who had not considered practicing rurally to a rural or remote placement increased the odds of rural practice intention. Twenty-four students identifying as Aboriginal and/or Torres Strait Islander completed a rural or remote placement—12.5% of these students had an increased intention to undertake rural or remote practice. **Discussion:** This study added to the known body of evidence, that when health students enjoy their clinical placement experience, they have an increased intention to pursue rural or remote employment. Emerging evidence contrastingly corroborates that students who had the desire to return to rural and remote areas prior to their clinical placement didn't have as strong motivation when compared to others without this intention.

Key words: Allied health students; Medical students; placement; rural; remote; Aboriginal and Torres Strait Islander.

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Introduction

Geographical access to equitable healthcare is an international issue, particularly for Indigenous populations. Across the globe, there is a discrepancy between populaces living in rural and remote locations and the ratio of healthcare workers.¹ Nationwide, this results in one third of Australians living rurally with inadequate access to healthcare services.²

Addressing this inequity, various angles need to be considered: including educating students of rural

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background, incentives, and personal and professional support.³ The focus of this paper is to increase the number of health students participating in rural and remote placements, to increase the likelihood of students electing to work in these areas once they have graduated. This is due to recognition that completing clinical placements, and being from a rural area, are factors associated with health graduates electing to work in rural areas.⁴ Across many university health disciplines, students are actively encouraged to participate in clinical placements in rural and remote areas.

Aboriginal and/or Torres Strait Islander people (respectfully referred to as Indigenous hereafter) experience inequitable access to health care.⁵ An Indigenous health workforce is integral to ensuring that health services meet the needs of Indigenous people. Through encouraging more Indigenous students to consider studying to become health professionals, inclusive of potentially undertaking a rural placement, would improve accessible and culturally safe health care.⁶ However, Indigenous health professionals are under-represented in the healthcare system, with 1.6% of the Indigenous population employed in health-related occupations compared with 3.4% of the non-Indigenous population.⁷ To date, there is a paucity of research exploring whether Indigenous students are accessing rural and remote placement opportunities; further understanding of this is required.

This research aims to identify factors that encourage and limit health students from participating in rural and remote clinical placements. Moreover, this research aims to determine if these strategies have facilitated Indigenous health students to undertake clinical placements. The findings of this research will be compared with a preliminary study, *Early Barriers for University Rural Clinical Placements*, which looked at factors that influenced placement participation and enjoyment.⁸

Method

A cross-sectional survey was developed to identify the various factors that encouraged or limited health students from participating in rural and remote placements, adapted from the previous survey

conducted by the National Rural Health Student Network (NRHSN) in 2004.⁸ The online survey was distributed to approximately 11,000 students via the NRHSN and their associated 28 Rural Health Clubs through email and social media. Students were encouraged to participate by going into a draw to win a \$200 voucher sponsored by Canberra Rural Allied Health and Nursing Collective (CRANC). This study has received ethics approval (Approval number: UC 8083).

Responses for each item were summarized as frequencies. The total number of responses differed between items due to non-response, as responses to every question were not compulsory, resulting in varying denominator *n* between items.

The data was used for data analysis conducted in R statistical software.⁹ Inferential statistics focused on the impact of respondent characteristics on the enjoyment of placement; their willingness to pursue rural employment; and the reported effect of their placement on their attitude towards rural or remote employment. Binary response variables were assessed using penalized logistic regression models, and ordinal response variables using cumulative-link models, in a mostly univariable approach.^{10,11} As the univariable models cannot consider simultaneous contributions of the different predictors, these analyses should be considered exploratory. Data that was collected via the open text box, were thematically coded manually by the lead researcher (Author 1) and project supervisor. (Author 6)

Table 1: Students who completed rural or remote placements.

| Placement types | Count (%) |
|------------------------------------|------------|
| Rural | 232 (45.7) |
| Remote | 40 (7.9) |
| Did not complete a rural placement | 236 (46.5) |

Results

Participants

A total of 508 student respondents participated across 27 universities and 15 health disciplines, from which we approximated to be 11 000 students, although a definitive number cannot be known due to the survey being distributed via social media. From this sample, 7.9% (n=40/508) of students

completed a remote placement as defined by the Modified Monash 2019 scale (MM 2019). The remainder were approximately evenly divided into students who completed a rural placement, and students who had not completed either a rural or remote placement.

Indigenous students made up 4.7% (n=24/516) of respondents; from this, half of the Indigenous

Table 2: Breakdown of Health disciplines

| | Count (%) |
|----------------------|-----------|
| Medical | 143 (28) |
| Pharmacy | 20 (4) |
| Occupational therapy | 32 (6) |
| Radiography | 43 (9) |
| Nursing | 180 (36) |
| Physiotherapy | 26 (5) |
| Speech pathology | 19 (4) |
| Other † | 40 (8) |

† These include Health Science, Medical Science, Dentistry, Social Work, and Nutrition and Dietetics

students (n=12/24) completed a rural placement and one student completed a remote placement. None of whom completed their placement in an Aboriginal Medical Centre, or equivalent. Of these students 30% (n=6/20) completed their placements in an identified position, while 20% (n=4/20) students were supported with an identified scholarship.

Students who did not complete a rural or remote placement

Of the 46.5% students (n=236/508) who had not completed a rural or remote placement, over half of these students (54.3%, n=126/232) were not yet at the stage where such placements were possible; 7.3% (n=17/232) of students were not enrolled in disciplines that offered rural or remote placements; 4.8% (n=11/232) of students didn't have supported rural or remote placements offered by their discipline, and 33.6% (n=78/232) of students listed other reasons. These reasons included COVID-19 restrictions cancelling or delaying placements; financial hardship; personal reasons; and applying but not being allocated a placement due to the finite number of placements.

Overall satisfaction

Satisfied students represented 38.3% (n=92/240) of students and very satisfied students represented 52.9% (n=127/240) of students. With 94.1%

(n=224/238) students stating that they enjoyed their placement.

When disciplines were compared, there were lower odds of pharmacy students reporting enjoyment when compared to medical students (OR=0.183, CI=0.023-1.241).

Students who chose to complete a rural placement compared with those who did not choose such a placement were more likely to state that they enjoyed their placement after completion (OR=3.4, CI=0.99-12.75).

Influencing factors

Accommodation and Transport

Accommodation was found to be an important contributor to placement satisfaction. In total, 41.5% (n=105/253) of respondents who completed a rural or remote placement, had their accommodation arranged by someone other than themselves (e.g., University placement team). Of this, over half (54%, n=57/105) were medical students, compared to 3.8% (n=4/105) of pharmacy students. This is consistent with arranged transport, of the 8.6% (n=21/243) of students who had their transport arranged, 81% (n=17/21) of these were medical students.

Approximately half of students, 52.3% (n = 125/239), stayed in a self-contained house/unit/flat, with less people staying in nurses' quarters or similar (15.5%, n=37/239), room only (15.1%, n=36/239) or other e.g., family (17.2%, n=41/239). In total, 37.4% (n=82/219) of students were reimbursed for the cost of their accommodation; 51% (n=41/82) of these were medical students. Overall, 62.6% (n=137/219) of students paid for their own accommodation. Students stated accommodation cost approximately \$100 per week.

No significant association was found between transport being arranged and placement enjoyment. A total of 42% (n=99/236) of students rated their access to transport to reach their placement site to be average, 27.1% (n=64/236) of students finding it excellent, and only 6.8% (n=16/236) of students finding it to be poor. Most students paid for their own travel costs, with 35.7% (n=86/241) of students being reimbursed.

Table 3: Suitability of accommodation

| | Suitably priced | Suitably clean |
|----------------------------|-----------------|----------------|
| | Count (%) | Count (%) |
| Strongly agree | 127(52.3) | 117 (48.4) |
| Somewhat agree | 36 (14.8) | 68 (28) |
| Neither agree nor disagree | 57 (23.5) | 48 (19.8) |
| Somewhat disagree | 16 (6.6) | 5 (2.1) |
| Strongly disagree | 7 (2.9) | 4 (1.7) |

It cannot be interpreted if reimbursement of travel costs impacted enjoyment. From the 'best estimate' of reimbursement compared to paid impacting on enjoyment (OR: 0.812, CI: 0.19, 4.1), very little was learnt, and we cannot rule out that the effect was quite large in either case.

University support

The support extended from the students' universities elicited varied responses. The reported support from the university was considered excellent by 31.9% (n=77/241) of students and above average for 27.8% (n=67/241) of students. The reported support from site supervisors was excellent as noted by 49.6% (n=120/242) of students and above average for 28.5% (n=69/242) of students. The overwhelming majority of students (93%, n=227/242) had an identified mentor or supervisor for their placement and 79.8% (n=193/242) students attended placement at the same time as other students.

Intention to work in rural or remote location.

Students' intention to return to work in rural or remote locations appeared to be influenced by their level of enjoyment, rather than their initial intention to work in rural or remote locations *prior to*

completing placement. As prior to undertaking a rural or remote placement, most students, 55.8% (n=134/240), had considered working in a rural or remote location, 30% (n=72/240) had considered working in only a rural location and only 0.4% (n=1/240) had considered working in only a remote location. A total of 13.8% (n=33/240) students had not considered this pathway; after the completion of their clinical placement this value was lowered to 3.3% (n=8/240) of students. From this cohort, 10.4% (n=25/240) of these students considered returning to a rural location following a rural placement and similarly with the 0.8% (n=2/240) of students completing a remote placement. It is suggested students that enjoy their placement are more likely to report intention to work in rural or remote areas in the future, with the log-odds for both rural and remote being approximately two units larger for enjoyment compared to no enjoyment. Although this may not be a causal effect, as students' attitude towards completing the placement may influence their enjoyment of placement.

After the completion of their placement, 43.8% (n=105/240) of students strongly agreed that they would like to return to the same workplace. The

Table 4: Intention to work in a rural or remote location before and after completing a placement in rural and remote location.

| | Before | After | Relative difference (%) |
|--------|------------|------------|-------------------------|
| | Count (%) | Count (%) | |
| Both | 134 (55.8) | NA ‡ | |
| Rural | 72 (30) | 203 (84.6) | 54.6 |
| Remote | 1 (0.4) | 29 (12) | 28 |
| No | 33 (13.8) | 8 (3.3) | -25 |

‡It was not asked as the survey was asked to be completed regarding one placement experience.

reported intention to work in a rural or remote location increased for 55.8% (n=134/240) students after completing a rural or remote placement. The students who reported they enjoyed placement have a moderately positive effect on their intention to return. Whilst for 42.1% (n=101/240) of students, their intentions remained unchanged. From this, 38.3% (n=92/101) of students were already considering working in a rural or remote location prior to the placement.

The level of satisfaction with the rural and remote placement had a positive influence on motivation to work in rural and remote locations. This effect was greater in students who did not intend to work in rural and remote location (proportional OR: 7.02; 95% CI: 1.82, 30.2) when compared against those who already had intentions of practicing in a rural or remote location (proportional OR: 0.373; 95% CI: 0.142, 0.884). Overall, if students enjoyed their placement, their motivation to engage in rural and remote work increased; whereas for those who already had a desire to return, their motivation to return was not as high.

The intention to work in rural and remote locations appears to be influenced by the experience, rather than initial intentions, with a large portion of students interested in returning to work in the workplace where they completed their placement.

Qualitative data

The open-ended question regarding enjoyment highlighted students’ positive perspectives—particularly surrounding team environments, mentors and preceptors, a strong sense of community, and opportunity for greater learning

experiences. This is articulated with one student’s response; ‘Most supervisors [were] happy to teach and have students... [it supported] more hands-on learning opportunities.’ Students also identified the quality of supervision as a key factor influencing their enjoyment of the placement with responses such as ‘best facilitator by far,’ ‘supervision was excellent’ and ‘one-on-one teaching’. The more negative responses arose when asked about improvements. These included increased support to address financial barriers, travel difficulties, accommodation affordability and the extent of university support received when undertaking the rural placement, with one student indicating that ‘[The university] sent me to the middle of nowhere without resources and offered zero care factor’.

Discussion

Positive factors have been highlighted to further build upon, whilst new and known barriers have drawn our attention. The barriers recognized by Turner, in the original iteration of this study [2004], remain prominent in regards to: rural and remote placements not being offered (28%); no supported rural and remote placements offered (13%), and rural and remote placements not being financially possible (34%).⁸ A new finding of this study was that the most significant barrier identified was that students were not yet at the stage where placements were possible (54.3%), which reflects the sample population, not necessarily the placement opportunities. Barriers identified related to other reasons (33.6%) such as: COVID-19 restrictions, personal reasons, or applying but not being allocated. The reported impact of COVID-19 presents a novel confounding factor in our study and contributes to evidence that the pandemic impacted

students' placements, including accommodation and immersion into rural lifestyles.^{12,13} This study reaffirms existing known barriers to successful rural clinical placements, including the financial burden of travel and accommodation expenses accompanying missed paid work opportunities during placement.¹⁴ These known barriers are further compounded for Indigenous students who are more likely to have carer responsibilities.¹⁵

There has been a demonstrated increase in the uptake and enjoyment of rural and remote placements for Indigenous students, which may have the potential to improve access to culturally safe healthcare. One study has identified that 1.8% of students that participated in rural placements were of Aboriginal and/or Torres Strait Islander descent (n=3328) compared to the 3.9% (95% CI = 2.5%-5.8%) of students in this study that identify as Aboriginal and/or Torres Strait Islander,¹⁶ this being representative of the current Indigenous population.¹⁵ Although this is a marginal improvement, it demonstrates that despite a small number of these students being supported with identified scholarships (20%), there is increasing number of Indigenous students completing placements in rural and remote areas. This research highlights the increased number of Indigenous students considering working in a rural or remote location with 13% of students furthering their consideration, while 31% remain unchanged after completing their placement—all of which had previously considered working in a rural or remote location. This is a positive change for rural and remote practice intentions. If intention translates into actual workforce, this could improve healthcare provided by Indigenous people for Indigenous people.¹⁸

Due to the aggregation of allied health students, it is difficult to determine if one discipline had a more positive experience when compared to another. Although, it could be determined that pharmacy students are less likely than medical students to report enjoyment. This may lead to the question of whether implementations such as financial allowances, such as those from the Seventh Community Pharmacy Agreement (7CPA), that domestic pharmacy students have access to, are improving placement satisfaction.¹⁹

Medical students receive greater support, particularly with the organization of accommodation and transport. This trend is acknowledged across the board with a 2019

NRHSN survey identifying that across all domains non-medical students were given significantly less support for rural placements compared with medical students.^{8,10} Financial and organizational support is an important aspect that can potentially be linked to greater satisfaction and enjoyment during their placements.

It is possible that medical students receive greater support as they typically undergo longer placements.²⁰ This can be beneficial, as it's suggested that those who complete longer placements have greater intentions to return, based on the idea of repeated rural exposure.¹⁶ Longer placements encourage greater immersion in rural lifestyle and community; although some research suggests that there is a link between cumulative shorter placements in rural or remote areas, that overall account for more than 20 days, and an increased probability to return to rural areas.²¹ Shorter placements, whilst still encouraging rural and remote practice, may have an increased burden, such as organizing and paying for transport and accommodation multiple times.²¹

Allied health students tend to obtain less financial and organizational support to complete rural or remote placements. Although it doesn't necessarily mean there is no support available, it could be associated with not having the same help that medical students have to obtain it. However, domestic pharmacy students have access to an allowance for accommodation and transport costs through the 7CPA.²² Despite this being available, only 40% of pharmacy students surveyed were reimbursed for their costs. The lack of uptake of this allowance was not investigated.

A large portion of students reported excellent site supervision, which substantiate to the value and role that direct mentors and supervisors play in student placement enjoyment, and the impact this has on their intention to return to a rural area. A total of 93% of students had an identified mentor or supervisor. This highlights the fact that supporting students with quality supervision to complete placement is a key recruitment strategy to increase rural practice intention.²³

It is thought that positive placement experiences are associated with rural workforce recruitment and retention.⁸ This study demonstrates such, with over 50% of students increasing their expressed intention to return to rural or remote areas following the completion of their placement. This is further

reiterated with the current literature wherein high levels of satisfaction (91.8%) were strongly associated with an intention to return to a rural location after the completion of their placement.¹⁶ The same survey found that students who previously did not intend on working rurally after the completion of their degree had increased intentions, while for those who aimed to work in rural locations prior to placement, their intentions fell marginally following placement.¹⁶ This decline in intention was mirrored in the current study—a concerning link when the ultimate purpose for rural placements is to increase the number of health students preferencing work outside of urban locations. Nursing and allied health students with a rural background are 4.5 times more likely to participate in a rural placement when compared with students with an urban background.²⁴ Further research into improving placements for rural origin students may be necessary to identify the gaps that reduce these students preferencing returning to rural and remote locations to work. Ultimately, a key finding of this study was that a large portion of students (43.8%), indicated an intention to return to the place where they completed their clinical placement to take up employment.

Limitations

These findings are limited as they do not establish a causal link to increasing the rural and remote workforce due to design constraints; furthermore, it is difficult to isolate the effect of the placement from pre-existing intention. This pre-selection bias occurred during sampling as the survey was distributed amongst the NRHSN, as these students are part of a club that represents rural health,

meaning they already have an established interest and potential bias. There is a risk of selection bias, due to a higher number of medical and nursing students responding, which meant allied health disciplines were aggregated in statistics contributing to generalizable results that may not accurately reflect each discipline.

Conclusion

High levels of satisfaction experienced during rural and remote placement opportunities is associated with higher levels of intentions to work in these locations in the future. The research provides contemporary findings that have the potential to improve future workforce retention in consideration with other aspects that drive work force intention.

Promisingly, more Aboriginal and Torres Strait Islander students are engaging in rural and remote placements. From the Indigenous students represented, there was an increase in the intention to work in rural or remote locations and this suggests that undertaking these placements could be one mechanism to improving equitable access to healthcare provided by and for Indigenous people.

This study has demonstrated that health student placement enjoyment is a key factor to improving the intention to work in rural and remote locations. We recognize that other factors will also contribute to workplace location intentions and these factors should be further investigated alongside the implications of rural and remote clinical placements.

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