



Recruitment Of Rural Students To The Health Professions

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The Commonwealth's Rural Health Support, Education and Training Program (RHSET) funded a 30 month pilot project to develop, implement and evaluate strategies to increase the recruitment of rural students into tertiary health profession courses, particularly into medicine and the therapies. The aim was to increase the pool of tertiary students with the characteristics identified as likely to lead to rural practice in the health professions.

The Project Genesis

The recruitment of health workers to rural practice was one of the issues considered at the 1st National Rural Health Conference. American studies had indicated that students from a rural background were more likely to enter rural practice (1, p1-3) so, as part of the first National Rural Health Strategy (2, p29) it was suggested that

- (i) "Programs in country high schools to promote the health professions as a career choice for high school students should be considered ... " and
- (ii) "Selective admission policies for rural students to enter undergraduate health courses need to be evaluated".

These recommendations implied that rural students were under-represented in health courses. The initial research showed that lower proportions of eligible students from rural and provincial schools apply for entry to medicine compared to those from metropolitan schools. This had been demonstrated for Queensland by Thomson in 1980 (1) and for Western Australia by Kamien and Buttfield in 1990 (3). An examination of data from the Queensland Tertiary Admissions Centre and the Board of Senior Secondary School Studies for 1989 to 1991 showed that while rural students formed approximately 16% of senior school leavers they formed approximately 10% of the school leavers offered a place in medicine and, furthermore, the successful rural students tended to come from within a 200 km radius of Brisbane. Again it was demonstrated that rural students are less likely to be eligible applicants to medicine (ie. to achieve the top tertiary entrance scores) and that eligible rural school leavers had maintained their lower application rate for medicine compared to the eligible metropolitan school leavers. These findings strengthened the calls for increasing the numbers of rural students admitted to medical school but there was little support in the literature for programs that would lower the academic ability of the intake (1, p13). However, the difficult question of the relationship between tertiary entrance score and academic ability was rarely addressed.

This research was the background and justification for the "Recruitment of Rural Students to the Health Professions" project. The scope of the project was extended beyond medicine to include the therapies, professions also acutely needed in rural areas; however no health profession was completely excluded. Given the competition, and consequently high tertiary entry scores, for places in the therapies it has been assumed that rural students are also under-represented in these courses. Anecdotally, this may not be true of physiotherapy.

Tertiary Aspiration Barriers For Rural Students

Literature review

To understand why rural students are under-represented in tertiary institutions a literature review was conducted. The results of the review formed the basis of a survey of rural senior students covering career aspirations, availability of career education and perceived barriers to a career in health. This survey was later repeated for a sample of metropolitan schools and for rural boarders in private metropolitan schools. Full reports of these investigations can be found in "Towards Increasing the Participation of Rural Students in Health Profession Courses" (4) and "Career Aspirations in Metropolitan Schools: A Comparative Study" (5).

The barriers identified in the literature as those faced by rural students, and particularly by students in rural schools, were academic, cultural, deficient or inappropriate career education, and financial.

Academic performance

Queensland students obtain a tertiary entrance score (OP = Overall Performance) ranging from 1 to 25, the top 2% of students gain an OP of 1. An OP of between 1 and 5 is required for entry into the majority of health courses leading to a registered profession (except nursing), a score obtained by less than 15% of eligible students.

As a group, rural students do not attain the proportion of top OP scores expected from their percentage of the school population. The academic performance of rural students is said to be disadvantaged by limited subject choice (especially in schools with 'secondary tops'), inexperienced and highly mobile teachers, their lower expectations and the lack of a competitive academic environment.

Cultural inhibitors

Barriers to tertiary aspirations were seen in the inherited traditions of the community, in peer pressure at school not to excel academically or aspire to tertiary study, in the limited occupational role models due to the restricted range of rural occupations and in a limited media coverage. Limited local employment encourages early leaving, especially among boys. This trend is exacerbated by the wealthier parents sending their children to boarding school so that the population of country schools is biased towards the lower end of the socio-economic scale.

Students are very influenced by parental schooling expectations but parents are often ill informed. Those with limited family networks to distant urban sites are disadvantaged and a study of rural undergraduates found that the majority of persisters had experienced other lifestyles.

Career education deficits

The need was expressed in the literature for the provision of more appropriate career information to parents, school counsellors and science teachers (in the case of health careers). Information on admission requirements, application procedures and alternate entry strategies was needed. For the students, exposure to work places and active professionals was seen as in need of improvement.

It was stressed that career information needs to be accompanied by career counselling and access to personal development opportunities. The lack of specialist staff, and the infrequent access to and the poor quality of career counselling were seen as disadvantages also suffered by rural students.

Financial barriers

The need to relocate and the cost of transport to urban centres depress the tertiary aspirations of rural students. Parents of rural tertiary students provide high levels of financial assistance to their children and available support schemes often disadvantage the 'asset rich' but 'income poor' rural families. The Higher Education Contribution Scheme (HECS) was found to deter poorer rural students from tertiary education (6).

An examination of past and present State medical scholarship holders (7, p46) found that they were more likely to come from a rural background. Given the barriers faced by rural students with tertiary aspirations it is not surprising that they were found to be one of the groups identified as likely to reject the offer of a place in a tertiary institution. (8)

Surveys of Career Aspirations

Based on the above research and in order to determine the barriers that discourage rural students in Queensland from aspiring to a career in health a survey was conducted in the 20 rural schools in the Central, Central West and Northern Regional Health Authorities (an area ranging from Yeppoon to Bowen and inland to the border, excluding the coastal cities). These schools contained one third of the Year 12 students in rural state schools. The response rate was 80% and 1064 returns were processed.

An opportunity arose towards the end of the school year to obtain comparative data by repeating this survey in Brisbane. Year 11 students from three metropolitan high schools drawn from different socio-economic areas and the Year 11 boarders from 11 of the 14 independent metropolitan schools with boarding facilities participated in the survey. The response rate was 81%. Of the 796 metropolitan respondents, 43% (n=346) were from state schools and of the 450 independent school boarders, 33% (n=148) had a rural home address. Thirty one percent of the rural Year 12 students could not nominate desired job or career (at the end of Term 1).

This compares to 39% of the total metropolitan sample (at the end of Term IV), there being no difference between the metropolitan state school students and the rural boarders.

A career in health was nominated by 10% of the Year 12 rural students, 7% of the metropolitan students and 13% of the rural boarders. These figures are of the same order as those reported by Kelly et al (9) in their Victorian research. The issues identified in the literature as barriers to tertiary education for rural students were confirmed as barriers to a health career.

Academic performance

Over one third (36%) of the Year 12 rural students whose job preference was not in health gave academic performance as one of the reasons for not choosing a health career. Fewer of the metropolitan state school sample gave this reason (26%) but more of the rural boarders (40%). The rural boarders were the least likely to say they were "sick of studying" - 15% compared to 25% of both state school samples. The 1992 tertiary entrance scores for the 20 rural schools surveyed also were examined. Six students had received an OP of 1 and 138 gained scores in the top 20% of the state - HALF the numbers expected from their proportion of the Year 12 population. If, as a group, these rural students have the same cognitive potential as other students then the education provided in rural schools and the method used to determine tertiary entrance scores must be amended so that they may reach their potential and be able to compete fairly for the scarce positions in health career courses.

Cultural inhibitors

Those rural students who had had little exposure to city life were more unlikely to have a job or career in mind. Gender differences were very noticeable among the Year 12 rural students. There was a lower proportion of boys in Year 12, they tended to be less able academically, more unrealistic in anticipating their OP score and more were sick of studying. Boys were less likely to have a job or career in mind, were less likely to nominate a career in health and were more likely to have a job lined up. Gender differences were not as noticeable among the metropolitan sub-samples, both of which contained comparatively higher proportions of males. There were no significant gender differences in anticipated OP scores or in having a job or career in mind. Girls were more likely to nominate a health career and boys were more likely to have a job lined up, especially the metropolitan state school boys.

The paucity of health occupational role models was evident in the Year 12 rural student responses. They were familiar with a narrow range of health professions - ambulance officer, dentist, nurse, optometrist, pharmacist, physiotherapist and surgeon. Few had immediate family members who were health professionals. Although the small numbers of aspiring health professionals in the two metropolitan samples makes comparison difficult, neither of these sub-samples had a better health professions knowledge and comparatively fewer had immediate family members as health professionals.

The number of desired health careers listed by the Year 12 rural students was 16 compared to a total of 10 for the two metropolitan samples, however it must be noted that there were more aspiring health professionals among the rural state school students (103:42). The sampling of the metropolitan state schools also makes this comparison dubious.

Career education deficits

The principals of the schools surveyed were asked to indicate which of the seven commonly available career education resources and which of the 10 commonly undertaken career education and personal development activities their school provided. Seven of the 20 rural schools reported having all seven resources (80% had at least five) as did 2 of the 3 metropolitan state schools (all had 5) and 11 of the 13 independent schools (all had 5). No rural school had the services of a Guidance Officer full time, four had such services at least half time. All 16 metropolitan schools had the services of a Guidance Officer at least half time. Eighty percent of the career education and personal development activities were provided by 11 of the 20 rural schools; the metropolitan schools tended not to organise trips to tertiary institutions or undertake job visits.

When the students were asked to identify the career education activities in which they had participated, the rural students were found to have been the most active and the metropolitan state school students the least active. The metropolitan state school students had the highest participation rate for local career markets, the rural boarders in activities indicative of a good Careers Resource Room and the rural school students had high participation rates in school organised activities. When asked to identify the personal development activities in which they had participated the same rates were found across all three sub-samples. In the rural schools, being active in career education and personal development activities was associated with having a job or career in mind but these associations were not statistically significant in the metropolitan sub-samples.

Financial barriers

When the students who indicated that they did not want a career in health were asked if this was because they could not afford to do further study, 20% of the Year 12 rural students answered in the affirmative compared to 6% of the metropolitan state school students and 5% of the rural boarders.

Other barriers to a health career

The most frequently given reasons for not wanting a career in health were lack of interest and ignorance. This accords with common sense and findings in the literature (10). Of those who had a preference for a non-health career, 60% of the Year 12 rural students, 52% of the metropolitan state school students and 41% of the rural boarders said they 'had never considered working in a health field'. Forty eight percent of the Year 12 rural students, 46% of the rural boarders and 38% of the metropolitan state school students said that they did 'not fancy working with sick people'. Thirty eight percent of the Year 12 rural students, 32% of the rural boarders and 29% of the metropolitan state school students said that they 'did not know much about careers in health'.

Knowledge of health career courses

The majority of students who did nominate a career in health were aware of the pre-requisites for their chosen course (81% of metropolitan state school students, 71% of the Year 12 rural students and 68% of the rural boarders) and of the institutions offering the course (95% Year 12 rural students, 80% of the rural boarders and 64% of the metropolitan state school students). The tertiary entrance score needed for the preferred course was not as well known - 62% of the two metropolitan sub-samples and 48% of the rural students said they knew the likely entrance score. Nearly all the rural students (89%) were able to list at least one strategy to adopt if unsuccessful in gaining entry to their first choice of tertiary course.

The survey conclusions

The results of the survey conducted in the metropolitan schools fully support the conclusions arising from the survey conducted in the rural schools. These were that

- changes are needed in the cultural milieu of rural students; gender stereotyping and the lack of competitive drive need to be addressed;
- changes are needed to take advantage of the level of career education resources within rural schools and to enable greater use of resources available outside the school;
- changes are needed in the methods of teaching in rural schools so as to increase the range and academic quality of the subjects offered;
- changes are needed to the methods of determining tertiary entrance requirements for students in rural schools and in the selection criteria for tertiary health courses; and
- changes are needed to the support structures for rural undergraduates to reduce the financial and cultural barriers to tertiary study.

Intervention vs Exposure

Research should inform the strategies developed to increase the number of rural students recruited into, and who graduate from, health career courses so that they increase the pool of likely recruits to rural practice. It appears that rural students are able to obtain information on the health career of their choice but that the choice is made by few and from a narrow range of options. Increasing student awareness of the range of health careers would seem a good starting point and the work by Kelly et al (9) has shown some promising results.

Increasing the amount of health career information available at rural schools is a necessary but insufficient pre-condition to increasing the number of rural students in health career courses. Many schools are already bombarded with information so that a targeted, not scattergun, approach is required.

Career counselling and support to increase the chances of overcoming the barriers facing the rural student with tertiary aspirations are also needed. Work is necessary at both individual and institutional levels.

A start was able to be made on this work by the securing of a Rural Health Support Education and Training Program grant for a joint pilot project by the Rural Health Policy Unit, Queensland Health, and the Faculty of Medicine, The University of Queensland. At the individual level, residential health careers workshops were held and a student support scheme established. At the institutional level, a review of the literature and the sources of career information available to rural schools in Queensland was conducted, career aspiration surveys undertaken and a review of the equity and access programs for rural undergraduates in all universities is currently being completed.

The Health Careers Workshops

Full details of the Health Careers Workshops conducted as part of this project can be found in "Evaluation of the 1993 Health Careers Workshop" (11) and "Evaluation of the 1994 Health Careers Workshops and Student Support Services" (12).

The principle behind the Workshop programs was that intervention, not exposure, was needed if the Workshop aims were to be realised. This principle is supported by the research done as part of the project and also by the work done by Surman et al in the "Girls in Mathematics and Science" Workshops" (13). The Health Career Workshop aims were to increase student awareness of the roles of health professionals and of the range of health professions, to increase student knowledge of tertiary entry strategies and to form a network of rural students with similar aspirations. Workshop participants were selected on academic ability, interest in a health career, suitability for a health career and likelihood of rural practice. The target population for this pilot project was the Year 10 students in rural schools in the Darling Downs and South West Queensland and the rural boarders in the independent schools in that region. The selection criteria remained unaltered throughout the project but the indicators used to measure them were amended after the evaluation of the first Workshop. As a result, academic ability accounted for 35% of the selection score and the remainder of the score came in roughly equal amounts from the contributions of the student, the parents and the school.

The Workshop Program had two themes. The first, 'Learning about the Health Professions', had two topics - (i) an overview of medicine and the therapies and (ii) the associated health professions. The learning experiences came from illustrated talks and discussions with health practitioners and visits to hospital, clinic and community health settings. The second theme, 'Gaining Entry into Medicine and other Health Courses', also had two topics - (i) personal development and (ii) available support. The learning experiences came from work undertaken by a qualified counsellor, from discussions with secondary and tertiary educators and administrators and from visits to tertiary institutions. A wide variety of printed material was also available for the students and their parents.

Two Workshop models were trialed. The first cohort of 24 Grade 10 students was selected in late 1992. These students attended a residential Health Careers Workshop in Toowoomba (a large provincial city) in January 1993 and another at The University of Queensland (metropolitan Brisbane) in January 1994. Both Workshops were of 5-6 days' duration. The emphasis in the first Workshop was on the health professions and personal development; less emphasis was placed on tertiary education issues. In the second Workshop the emphasis was placed on the structure and content of the tertiary health courses, academic assistance and an introduction to university and city life. However, personal development sessions were continued as were the hospital and clinic visits, the latter being tailored to the students' career preferences. Over the two years as well as exposure to a variety of medical specialities and the therapies, Dentistry, Medical Laboratory Science, Optometry, Podiatry, Radiography and Social Work were included.

The second cohort of 20 Year 10 students was selected in late 1993. As the funding for the project was finite only one Workshop could be arranged for these students. A 4-5 day residential Workshop was held in Toowoomba in January 1994 at which equal emphasis was placed on the health professions, personal development and tertiary entrance issues. Again exposure was to the medical specialities and the therapies however medical records administration and radiography were also included.

Both Workshop models were evaluated using open ended Daily Evaluation Sheets completed during the Workshop and a structured questionnaire administered 2-3 months after the Workshop. The two-Workshop model was very successful in achieving its aims.

As a result of the TWO WORKSHOP INTERVENTION the participants felt that they had a good understanding of the work of health professionals. All participants felt that their knowledge of health courses and tertiary entrance requirements had increased and they were able to produce specific and realistic alternate entry strategies. Most participants rated the career information they had received from school very poorly. Almost all participants felt that their goal setting, study skills, time management and relaxation techniques had improved as a result of the Workshops and almost all had kept and used the handouts provided. The academic assistance given at the second Workshop was of variable quality but was generally appreciated by the students. Living on campus and the controlled exposure to public transport increased student confidence about undertaking the transition to a tertiary institution. A high degree of contact had been maintained among the majority of the participants after the Workshops. The retention rate between Workshops was 92%, a good indication of the worth of the project to these students. All but one of students returned the evaluation questionnaire.

The parents of this cohort were very supportive of the project. They approved of the inclusion of the Personal Development, Academic Assistance and Tertiary Life components in a careers workshop and applauded the decision to tackle a limited number of careers at a reasonable depth. Many commented on the positive changes in their children which they attributed to the project.

An interest in health had been one of the criteria used when these students were selected for the Workshops in 1992. Nearly 18 months later all but two of the 24 selected still aspired to a career in health. Those who had not wavered in their career choice said that the program had enhanced their interest and firmed their resolve. Those who refined their career choice said that the program had helped them make the decision and that they had made an informed choice.

The ONE WORKSHOP INTERVENTION had benefited from the experience of the previous year. The selection process was more discriminatory and the Workshop program had been refined. All but one student returned the evaluation questionnaire. The participants found all the health profession sessions to be learning experiences and they were very appreciative of the time and effort put in by busy health practitioners. The range of health career options held by the group doubled as a result of their Workshop experience. Again parents supported the 'in depth' approach adopted seeing it as challenging to these able students. An increased understanding of the areas covered in the Personal Development sessions was reported by almost all participants and nearly half of the parents had noted an improvement in their child's study strategies. The students reported a greater understanding of tertiary courses and requirements, alternate entry strategies and sources of information. Again, half the parents reported an increase in the confidence with which their child was approaching tertiary study. All the participants would recommend this Workshop to a friend. It was seen as educational and fun and this view was supported by the parents.

It would seem that both Workshop models are robust. The great advantages of the two-Workshop model are the exposure to university and city life, the increase in the number of health careers examined and the strengthening of the student network. The disadvantages are in the doubling of the cost of the program per student and the increased administrative complexity of the second Workshop. The 1994 Toowoomba Workshop involved six university staff, nine hospital staff and four project staff. The 1994 Brisbane Workshop involved 18 university staff, six hospital staff, nine other health professionals, nine educators, two security staff and three project staff.

The Student Support Services

A support service was provided for all Workshop applicants (successful or otherwise), their parents and anyone referred to the Project Team. This service is another manifestation of the belief that it is insufficient simply to raise awareness of health careers among rural students; better access to accurate information is also needed. The main features of this support service were quarterly newsletters and a Health Careers Info-Link. The newsletters were used to channel relevant information to the students and to facilitate their networking. They contained articles of general interest about health research, university events and health calendar events. An 'info-link' section provided news of career education events and sources of information, distance education tutorial packages and city life.

For the Workshop participants a 'stu-link' section containing gossip and chat was included. When relevant, information for parents was included and the mail-out usually contained relevant brochures and leaflets. The recipients found these newsletters helpful and shared them with their school friends.

A collection of current information on health career courses was established and has allowed the Project Team to respond to requests for information or, more usually, provide contact numbers for the sources of the required information. The pursuit of information through the maze of university administrative and teaching departments can be very daunting for the uninitiated and very expensive in terms of telephone charges. Requests have been received for information on accommodation, upgrading, note taking and study skills, financial planning and sources of assistance as well as on specific health professions. Advice has been given on work experience, bridging courses, interstate tertiary entrance and job opportunities. The use made of this service has been its justification.

Conclusions

This pilot project is almost over. It has been immensely successful in meeting its short term goals and in terms of 'client satisfaction'. Insufficient time has elapsed for the medium term aim of increasing the number of rural students in health courses to be assessed and the long term aim of increasing recruitment into rural practice will not be seen for many years. However as the result of this pilot it is strongly recommended that state health authorities continue to support these intervention strategies among rural secondary school students. State Rural Health Policy Units should be resourced to record and analyse admission rates of rural students to health courses and to maintain and operate a Health Careers Info-Link. The Rural Health Training Units should be funded to conduct residential Health Careers Workshops for rural students in the large provincial cities. Health Science Departments and Faculties should initiate joint ventures with university equity services and provide 'rural clubs' and other support especially to their rural undergraduates in their first year of study.

Finally, the Rural Health Support Education and Training Program is to be congratulated on its vision in funding this pilot project and very sincerely thanked for the support given throughout this undertaking.

Addendum

The Queensland Tertiary Admissions Centre (QTAC) published the first round of offers for course placements on 17 January 1995. Of the 21 rural students who participated in the two-Workshop model, 18 were offered university places for 1995; one entered the army (still aiming at post-graduate medicine); one accepted an overseas exchange scholarship (still intending to pursue naturopathy on her return) and another student intends to enter the College of Natural Medicine in Brisbane.

Four of the participants were offered places in courses leading to non-health careers, eg Arts, Primary Teaching, Secondary Physical Education Teaching, Veterinary Science, and the remaining 14 students were offered places in courses leading to a career in health. These courses were Bachelors of Pharmacy, Physiotherapy, Social Science (Psychology) and Social Work - 4 offers, Bachelor/Applied Science (laboratory science, psychology and radiography) - 3 offers, Bachelor of Science (leading to medicine and the therapies) - 3 offers and Bachelor of Nursing - 4 offers.

Thus 81% of those who completed the two-Workshop model still aspire to a health career, 71% are expected to begin their health or health-related courses this year-- this is 63% of the original cohort selected in 1992. Although the numbers are small, comparisons will be undertaken as soon as further QTAC data are available.

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