SHORT REPORT:

Near-peer teaching in paramedicine education: A cross-sectional study of student experiences

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Abstract

Near-peer teaching (NPT) has been identified as a contemporary and valued pedagogical approach in higher education health programs, and it has recently gained momentum in paramedicine education. The objective of this study was to investigate the perceived experience of student paramedics involved in a near-peer teaching program over two academic trimesters. A cross-sectional study design was utilised in the form of an online questionnaire. The questionnaire contained a variety of questions that related to the experience of student paramedics involved in paramedicine near-peer programs. Of the 65 students enrolled, 34 completed the questionnaire (52.3% response rate). The results indicated that NPT was overwhelmingly considered a valuable and positive pedagogical method for use in paramedicine education.

Keywords: paramedicine education; near-peer teaching; NPT; student paramedic

Introduction

In Australia, paramedic practice was once focused on basic life support and clinical skills, such as bandaging and splinting, which required only basic instruction (Brooks, 2018; O'Brien, 2014). However, paramedicine has recently emerged as a modern, highly-educated, independent profession, with future paramedics educated in higher education institutions. These programs have expanded the paramedic capability in line with increasing community expectations (Brooks, 2018). As a result of these developments, the volume of theoretical knowledge expected of graduates, coupled with clinical skills, has

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grown exponentially (Brooks, 2018; O'Brien, 2014). This places pressure on paramedicine higher education programs to provide a novel and safe learning environment.

Near-peer teaching (NPT) has been identified as a contemporary and valued pedagogical approach in higher education health programs, and it is gaining momentum in paramedicine education (Akinla et al., 2018; Hogan et al., 2017). This innovative approach supports the development of both mentee and mentor through support and collaborative opportunities (Akinla et al., 2018). The programs utilise experienced students in mentoring and teaching roles to assist their junior peers develop the knowledge and skills required to succeed (Aba Alkhail, 2015; Singh et al., 2014).

The benefits of introducing such programs into health and medical education programs are well documented, however there is a paucity of literature relating to NPT programs in paramedicine education (Hogan et al., 2017; Williams, Wallis, & McKenna, 2014). In the Griffith University paramedicine program, a series of successful NPT years have been facilitated in both first- and second-year curricula since the program's inception 5 years ago. The NPT appointment was a 12-month voluntary role whereby NPT mentors were supervised by academic staff members in the delivery of clinical skills workshops. The process involved an expression of interest distributed to second-year paramedicine students, who were then selected by academic staff to participate in a training day during orientation week. During the training sessions, the students were introduced to teaching and learning concepts, debriefing techniques and facilitation skills. To date, the student perceptions of this experience have not been assessed.

Whilst these NPT programs were developed with an evidence-based approach, this evidence has been reliant on, and largely drawn from, medical education and not paramedicine education. This research aimed to identify the perceived experience of student paramedics involved in paramedicine-specific NPT program at an Australian university through the distribution of an online questionnaire to students involved in the program. Their experience was measured between the first and second trimester 2020.

Methodology

Study design

A cross-sectional study design was utilised in the form of an online questionnaire containing an assortment of personal experience questions that related to the experience of student paramedics involved in a paramedicine-specific NPT program.

Participants

There were 65 students eligible for enrolment in this study. Fifty five were first-year mentees and 10 were second-year mentors who had previously participated as mentees the year before. All first-year students enrolled in the Griffith University Bachelor of Paramedicine program were eligible to participate. Only second-year paramedicine

students who had completed the NPT training day and facilitated at least three sessions as an NPT mentor were eligible to participate.

Instrumentation

The online questionnaire consisted of two parts. The first part identified student demographics; the second part identified student attitudes towards and experiences of paramedicine-specific NPT. The questionnaire utilised an adapted version of the Williams, Wallis and McKenna (2014) peer-assisted learning (PAL) student study.

There were 19 questions in total, comprising three demographic questions (Q1, 2, 3) and 16 questions relating to teaching, student development and the perceived culture of NPT. Nine questions investigated the students' experience (Q5, 7, 9, 12, 13, 14, 16, 18, 19), and six questions investigated the students' perceived clinical ability (Q6, 8, 10, 11, 15, 17). One question asked if student paramedics believed that teaching was an important role in paramedicine. Although this was an isolated question, it was deliberately included to gauge a student's awareness of the professional role of a registered paramedic. Since November 2018, the Paramedicine Board of Australia has established roles and responsibilities under The Australian Health Practitioner Regulation Agency (AHPRA). This was the first time that a national definition of the roles and responsibilities of paramedics had been established, and it included mentoring and teaching of junior paramedics (Paramedicine Board, 2020).

Procedure

Students were notified by a course site announcement about the study and asked to participate following a clinical workshop in trimester one. Students who remained after the workshop had their name and email recorded. A link to the information sheet highlighting the aims and the voluntary and confidential nature of participation in the study and a link to the electronic questionnaire was sent to them by a staff member not involved in the study. Students consented to participate in the study by completing the anonymous electronic questionnaire and submitting it. Students could not withdraw from the study once they had submitted the questionnaire due to its anonymous nature.

Data analysis

Data was analysed using SPSS (Statistical Package for the Social Sciences Version 26.0, IBM Corporation, Armonk, New York, USA). Descriptive statistics were used to report student demographic information and student perceptions of NPT using means, standard deviation (SD), medians, proportions, percentages and ranges. All confidence intervals (CI) are 95% with the results considered statistically significant if the p-value was less than 0.05.

Ethics approval was obtained from Griffith Human Research Ethics Committee (Reference number: GU Ref No: 2020/372).

Results

Demographic data

Of the 65 students eligible for this study, 34 participated (52.3%). Of the 34 students, 22 were female (64.7%), and 12 were male (35.3%). The student age varied between 18 and 42 years. There were 27 students (79.4%) under the age of 21, four students (11.8%) between 21 and 30 years of age and three students (8.8%) over 30 years of age.

Student experience data

Students involved in this study provided encouraging feedback on their paramedicine NPT experiences (see Table 1). A majority of the students (94.1%) agreed that teaching was an important role for the professional paramedic (m = 4.56, SD = 0.991). All students (100%) agreed that they learnt more through their interactions with near-peer mentors than they did previously without them (m = 4.56, SD = 0.504). More than half of the students (58.8%) either agreed or strongly agreed that they learnt more from the academic staff instructor than their peer mentors (m = 3.65, SD = 0.691), and a large number of students (64.7%) identified that being taught a clinical skill by an academic instructor increased their sense of responsibility more than when taught by a peer mentor.

Most students (76.4%) agreed that they were less anxious when performing skills in front of peer mentors than academic staff (m = 3.88, SD = 7.69), and over half the students (58.8%) agreed that being taught clinical skills by a near-peer mentor increased their interactions with other students more than when taught by an academic instructor only (m = 3.65, SD = 0.691). All students (100%) agreed that peer mentor involvement in the practical sessions helped them learn (m = 4.74, SD = 0.448), however only half the students (58.9%) agreed they were able to communicate more freely with near-peer mentors compared to academic instructors (m = 3.62, SD = 0.817).

All of the students (100%) agreed that near-peer mentors made a positive contribution to the first-year practical sessions (m = 4.74, SD = 0.448), and more than half the students (58.8%) agreed that because the feedback from near-peer mentors was from a student perspective, it was more honest, realistic and helpful than from an academic instructor (m = 3.88, SD = 0.739). All students agreed that near-peer mentor involvement in the first-year practical sessions was beneficial to their practical skills development (m = 4.76, SD=0.431), and all students agreed that they would recommend the continuation of the near-peer program involving practical skills development for first-year paramedicine students (m = 4.88, SD = 0.327).

The Cronbach's alpha score was 0.715, demonstrating acceptable internal consistency.

Table 1

Paramedicine Near-Peer Teaching Experience Questionnaire Results (n = 34)

Survey Questions	Mean	SD
Teaching is an important role for paramedics	4.56	0.991
I felt freer to approach my instructor for help than I did with my peer mentor teachers	3.12	0.729
My ability to problem solve improved more from instructor teaching than from my peer mentor teachers	3.38	0.853
I was less anxious when performing a paramedic skill in the presence of my peer mentor teachers than my instructor	3.88	0.769
Being taught clinical skills by my peer mentor teachers increased my interaction and collaboration with other students more than when being taught by my instructor	3.65	0.691
Being taught clinical skills by my instructor increased my sense of responsibility more than by being taught by my peer mentor teachers	3.58	0.969
I learnt more from my instructor than my peer mentor teachers	3.65	0.691
I learnt more through my interaction with peer mentors than without them	4.56	0.504
I was able to communicate more freely with my peer mentor teachers than with my instructor	3.62	0.817
The feedback received from my peer mentor teachers was from a student's viewpoint, therefore more honest, realistic and helpful than from my instructor	3.88	0.739
My peer mentors are more supportive of me when I am performing a paramedic skill than my instructor	2.97	0.797
I am more self-confident and able to perform independently because of being taught by my peer mentor teachers, more so than by my instructor	3.29	0.719
I think the peer mentor teachers made a positive contribution to my first-year practical sessions	4.74	0.448
The peer mentor involvement during practical sessions helped me to learn	4.74	0.448
I would recommend continuing to have peer mentors in the first-year practical sessions	4.88	0.327
The peer mentors' involvement in the first-year practical sessions was beneficial to practical skills development	4.76	0.431

Note: Questions utilised a 5-point Likert scale (5 = *strongly agree*, 4 = *agree*, 3 = *neutral*, 2 = *disagree*, 1 = *strongly disagree*)

Discussion

Results of this study closely match those found in the peer-assisted learning (PALS) study by Williams, Wallis and McKenna (2014), where the objective was to determine the perceptions of first-year paramedicine students involved in a similar program to that

of NPT. In 2018, the Paramedicine Board, established under the Australian Health Practitioner Regulation Agency (AHPRA), developed a list of paramedic responsibilities that not only ensured high-quality professional clinical services were delivered but also established education-based paramedic responsibilities. These included mentoring, teaching and the development of others (Paramedicine Board, 2020). Although the PALS study occurred prior to the establishment of the Paramedicine Board, the results of this study, as well as the PALS study and a study by Fox et al. (2015), showed that paramedicine students see a clear relationship between teaching roles and professional paramedic practice. This is pursuant with the paramedicine professional responsibilities (Fox et al., 2015; Williams, Wallis, & McKenna, 2014).

All of the students involved in the paramedicine-specific NPT program who were surveyed agreed that peer mentor involvement helped them learn, made a positive contribution and increased their interactions with fellow students. However, there were some disparate results in other areas. A division in responses saw only half of students agree that their ability to communicate with the near-peer mentors was easier compared to communicating with academic instructors. In addition, only half of students surveyed agreed they learnt more from their peer mentors than their academic staff instructors. These results align with several other NPT studies (Fox, 2015; Williams, Hardy, & McKenna, 2015; Williams & Nguyen, 2015). Considering the beneficial and positive experience reported by all students involved in this study, similar to other studies, this division in the reported benefit of instructor teaching and NPT was unexpected (Hryciw et al., 2012; Williams, Wallis, & McKenna, 2014; B. F. Williams, Fellows, et al., 2014). So, too, was the division reported by students in their capacity to communicate with academic instructors and near-peer mentors.

A further division in responses saw only half of students agree that the value of near-peer mentor feedback was more useful than academic instructor feedback. However, a large number of students agreed that they were less anxious when performing clinical skills in front of near-peer mentors compared to academic instructors, although they indicated that their involvement with academic instructors increased students' sense of responsibility, which was similar to previous findings investigating paramedicine NPT (Fox et al., 2015; Hryciw et al., 2012). Whilst it was expected that students would be able to relate to the near-peer mentors better than academic staff, it was unexpected that the results would show that a majority of students valued near-peer mentor feedback less than academic instructor feedback, particularly since the same students reported that because near-peer mentors' feedback was from a student perspective, it was more reliable than from an academic instructor. That said, all students agreed that they learnt more through their interactions with near-peer mentors than they did previously without them. This key finding was similar to several other studies, which suggests further inquiry into paramedicine-specific near-peer mentoring programs is warranted (Irvine et al., 2018; McKenna & Williams, 2017; Suija et al., 2020; Williams & Fowler, 2014).

Whilst the application of NPT has been demonstrated to be a valuable student experience in paramedicine education, its value in actual clinical skills development remains unverified based on the findings of this study. However, a study in 2017 suggested that skills acquisition by NPT participants was observed (McKenna & Williams, 2017). Whilst disparate results were found in several responses in this study, the overwhelming feedback from student participants indicated that the paramedicine-specific near-peer mentoring program was an enjoyable and positive experience. The findings in this study support previous studies that have also found NPT made a positive contribution to the student learning journey and increased student interactions with fellow students, thus promoting a stronger program community (Irvine & McKenna, 2017; Irvine et al., 2018; Williams, Olaussen, & Peterson, 2015; Williams, Fellows, et al., 2014). Despite the small sample size, the findings of this study were significant and will add to the growing body of knowledge in paramedicine-specific NPT programs.

Conclusion

The results of this study support previous studies into NPT whilst increasing the knowledge base that supports the notion that paramedicine-specific NPT is beneficial to the mentor and mentee. Students involved in paramedicine NPT were both receptive and supportive of NPT programs in paramedicine education continuing. Students overwhelmingly identified NPT as a positive experience and identified it as assisting them develop through their clinical practice. These results alongside other studies suggest that NPT is a valuable pedagogical method that should be used widely in paramedicine education and warrants further research and development.

Conflicts of interest and funding

The author declares no conflicts of interest or funding obtained for this study.

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