Research

Motivating factors influencing student paramedic choice of paramedicine as a career

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Abstract

Introduction

This study aimed to identify and assess the factors, motivations and influences on undergraduate students' choice of paramedicine for their studies and ultimately a career in paramedicine.

Methods

A survey was available to 205 first-year Bachelor of Paramedic Science students to assess background, motivational factors and influences on choosing their undergraduate studies.

Results

The response rate to an online survey distributed to 205 students yielded an almost 25% response rate (n=51). Altruistic factors were the main reason students chose to study for a degree in paramedic science and ultimately a career in paramedicine. Although essential, extrinsic, sociodemographic and interpersonal factors were less motivating factors. Despite other research suggesting media coverage leads to increased student enrolments, the media coverage of paramedics as frontline health professionals during the COVID-19 pandemic and the 'lights and sirens' effect of ambulance/paramedic reality television shows as influences were not highly regarded.

Conclusion

The altruistic factors influencing career choices in paramedicine are generally similar across the healthcare industry. In this review, the motivating nature of extrinsic, interpersonal and sociodemographic factors was generally inconclusive. However, these factors may well apply to a university's initial recruitment strategy and as a factor for ambulance services to consider when identifying the motivating factor of a student paramedic to join the workforce.

Keywords:

paramedic student; paramedic science; career; university; motivations; influences

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Introduction

In 2018, paramedicine was recognised as a regulated profession, requiring paramedics to register with the Paramedicine Board of Australia (1). A requirement of registration as a paramedic in Australia is completing an approved qualification, as determined by the Paramedicine Board of Australia (1). Enrolments in Queensland-based universities offering paramedic qualifications have plateaued since 2016, sitting at 2820 in 2019, but account for the highest enrolment numbers of any state in Australia (2).

Previous studies have indicated that motivating factors to pursue a career in paramedicine and undertake the study are ambiguous (3). Despite anecdotal evidence that there are limited employment opportunities for paramedic graduates, the Australian Industry and Skills Committee predicts an increased demand for paramedic jobs by 2024 (4). Additionally, paramedics have emerging opportunities to work in non-traditional roles in primary and community healthcare settings, including primary healthcare centres and vaccination centres, especially in rural and remote locations (5).

Despite recent press coverage about some of the negative aspects of paramedicine and the job demands, enrolments for undergraduate paramedic degrees remain strong (5,6). In this article, the authors aimed to identify and assess the factors, motivations and influences on why students chose and enrolled in paramedic science in a regional Queensland university and the ultimate motivation to pursue a career in the paramedic profession.

Methods

Design

We employed a cross-sectional non-experimental survey design for this study. The study used a self-report web-survey data collection instrument to measure factors that may influence student paramedic career choice in paramedicine. Quantitative and qualitative sections divided the 17-question survey tool.

Participants

This study was conducted at a Queensland regional university, college of clinical sciences, paramedic science degree. The university's school of health, medical and applied science has about 4000 students. The Bachelor of Paramedic Science course has about 456 students, with a first-year intake of about 205 students in 2021. The design of the paramedic science degree was an internal offered degree and a degree delivered online with practicum block residential schools. The degree is offered as a 3-year full-time or 6-year part-time course.

Instrumentation

The researchers developed the online survey after canvassing

the literature on what factors influence career choices among health students. The development of the survey was to identify if the COVID-19 pandemic played an essential factor in the students' choice to become paramedics. The basis of the themes used in the quantitative 7-point Likert section of questions was on previous works by Wu et al (7) and their systematic review of factors influencing career choice among healthcare students.

The first question was an open-ended qualitative response from students about why they chose a career as a paramedic. Question three ascertained the mode of study undertaken for their degree, with responses based on traditional face-to-face, online, full time or part-time study. The next four questions were related to the participant's demographics; followed by groups of questions that required responses to a 5-point scale with bipolar responses. The respondents were required to answer questions of their knowledge of paramedicine and the extent to which they considered a paramedic career pre-COVID-19. This question, and a later 7-point Likert scale question focussed on the impact COVID-19 in the media influenced their decision to become a paramedic. The final group of questions reviewed intrinsic, extrinsic, sociodemographic, interpersonal and media influences on becoming a paramedic. This group of questions required a response to a 7-point Likert scale and involved 44 separate items.

Procedures

Students were emailed via the university's learning management system (Moodle) course portal initially in their orientation week, at the end of their first week of studies and again at the end of week three. The university's human ethics committee cautioned the researchers on the over-surveying of students. Therefore, the researchers decided that three specific times of informing students via the Moodle portal were sufficient: their orientation, first week of studies, and census date.

Data analysis

Data used in the analyses came from the student paramedic-based online survey of factors that may influence paramedic career choice in paramedicine. Data collected by the electronic questionnaire were stored on a Microsoft Access database that resided on the university's computer server. Survey data were coded and transferred from the Access database to an SPSS 26.0 (SPSS, 2019) statistical package software program.

Descriptive statistical analyses were conducted using frequency distributions, means and standard deviations to describe the respondent population and identify trends or data abnormalities among study variables. T-tests assessed differences between student factors for wanting a career as a paramedic and were conducted to evaluate differences among the student cohorts regarding the factors (continuous variable). All tests were two-tailed, with the results considered statistically significant if the p-value was <0.05.

Ethics

Ethics approval was with the University's Human Ethics Committee, ethics approval number 0000022849.

Results

Of the 205 students enrolled in their first year of the Bachelor of Paramedic Science course, 51 students participated in the study, a 24.87% response rate. The first email to students yielded 47 responses, three responses, and only one response on the last reminder email. The researchers therefore declared that saturation point had occurred. Most of the participants were female (69%, $n=35$), and 43% ($n=22$) studied online and full-time. The average age of the participants was 28 years, with the highest level of studies before enrolling into the Bachelor of Paramedic Science being Year 12 or a certificate level qualification (60.41%). Of particular interest was their yearly income (before tax), with \$60,000 to \$150,000+ being most participants' wages (58%), suggesting that most participants were also working full-time.

To ascertain if the participants had considered undertaking a career as a paramedic before the COVID-19 pandemic, 74.5% ($n=35$) stated "definitely yes". The response corresponds with the 7-point Likert question asked of participants, if recent media on paramedics as first responders to the pandemic crisis was a motivating factor. Most of the participants (60.87%) answered that they disagreed or completely disagreed with this factor (mean=3.54, SD=2.02). However, all but 6% of students admitted to knowing about a career as a paramedic.

The participants shared the significant reasons why they chose paramedicine as a career in the free-text response. Stand-out areas included: 'helping', 'career', 'people', 'interest' and 'rewarding'. A deep-dive analysis of these responses revealed that female participants highly rated "helping others" as the main reason for choosing a career as a paramedic ($n=15$, 33.3%); this also achieved statistical significance ($p=0.005$). A combination of male and female participants of varying ages highlighted working in healthcare ($n=13$, 28.9%) as the main reason for choosing paramedicine. However, the 17 to 20 years of age group identified "to make a difference" as the main reason for choosing paramedicine for their career choice was not statistically significant ($p=0.08$). Finally, using entry into the Bachelor of Paramedic Science as a leap into another medical degree accounted for 11% ($n=5$) of the participants.

Intrinsic factors include the desire to help others and also considerable interest in the area of paramedicine. The five areas that focussed on intrinsic factors were: a challenging career, desire to help others, personal interest in paramedicine, personal interest in healthcare generally and personal fulfilment (Table 1).

Using Pearson product-movement correlation coefficient, the relationship between all the intrinsic factors was investigated.

Preliminary analysis ensured no violation of the assumptions of normality, linearity and homoscedasticity. As a result, there was a strong positive correlation between all the intrinsic variables and the participants' motivation to become paramedics ($r=.628-.943$, $n=51$, $p<.001$) with higher personal fulfilment levels with a challenging career.

Table 1. Intrinsic factor results based on 7-point Likert scale

Factor	Minimum	Maximum	Mean	SD	Variance
Challenging career	4.00	7.00	6.17	0.89	0.80
Desire to help others	5.00	7.00	6.63	0.70	0.49
Personal interest in paramedicine	5.00	7.00	6.50	0.77	0.60
Personal interest in healthcare	5.00	7.00	6.39	0.85	0.72
Personal fulfilment	4.00	7.00	6.26	0.87	0.76

There was an investigation of the extrinsic factors such as job security, employment opportunities, lifestyle, career opportunity and autonomy. The most significant negative response to these factors was the question raised around not getting into another health discipline. Over 80% of participants responded from disagreeing to completely disagreeing with the statement. The highest-ranked extrinsic factor was that participants believed the profession was worthwhile and noble ($M=6.18$, $n=51$). Responses are identified in Table 2.

Table 2. Extrinsic factor results based on 7-point Likert scale

Factor	Mean	SD	N
Job security	5.2745	1.16753	51
Good pay	4.9412	1.12092	51
Worthwhile and noble	6.1765	0.91007	51
Ideal employment	5.0784	1.58547	51
Shift work	4.6078	1.40112	51
Lifestyle provided by the job	4.9020	1.45952	51
Ease of finding a job	3.9216	1.77587	51
Good work-life balance	4.8039	1.38592	51

However, the research highlighted that the relationship between good pay and other extrinsic factors had a medium to large negative correlation; however, it was not statistically significant ($p>0.05$, $r=-.140$ to $-.205$, $n=51$). Interestingly, the participants' strongest positive correlation was that of paramedicine being identified as ideal employment and easy finding a job ($r=.933$, $n=51$, $p=0.01$).

The next series of questions related to sociodemographic factors such as would being a paramedic enhance your social status.

The questions and outcomes of the 7-point Likert scale are identified in Table 3. The participants rated professional interest ($p<0.01$) as the most significant sociodemographic factor contributing to them wanting to become a paramedic, with being a 'paramedic enhances their social status within the community' scoring the lowest rating ($p=0.01$).

Table 3. Sociodemographic factor results based on 7-point Likert scale

Factor	Mean	SD	N
Enhances social status	3.3333	1.49220	51
Professional interest	6.9412	7.09482	51
Provide a public service	6.1176	0.93053	51
The reputation of being a paramedic	4.5490	1.65304	51
The degree leads to a recognised job anywhere	4.8824	1.39495	51

Interpersonal factors were the next series of questions asked of the participants. Questions included influences from family, those identified as significant in their life, and their exposure to paramedics through friends or family situations (Table 4). Overwhelmingly the participants identified their influences, or paramedicine reflected their values and interests than any other influence on their decision ($M=6.24$, $n=51$, $p=0.01$). However, the relationship between teachers and family as an influence had the largest positive correlation ($r=.905$, $n=51$, $p<0.001$).

Table 4. Interpersonal factor results based on 7-point Likert scale

Factor	Mean	SD	N
Teachers were an influence	3.4706	2.00353	51
Family were an influence	3.9804	2.03460	51
Friends were an influence	3.6471	1.74153	51
Influence of paramedics	4.7255	1.88763	51
Paramedicine reflects your own values and interests	6.2353	0.92926	51
Paramedics in the family	2.2941	1.60367	51
Paramedics as friends	3.9804	2.37057	51

Finally, we investigated the effects of the media on participants wanting a career as a paramedic. The researchers wanted to ascertain if the media coverage of the COVID-19 pandemic or the current trend of ambulance/paramedic reality shows on television was a major contributing factor in their decision. Table 5 highlights that no real factor played a major part in the participants' decision to become a paramedic. The researchers identified that the 'lights and sirens effect' or influence by television series and documentaries/reality TV were the largest contributing factors ($p=0.01$). Further investigated using the Pearson correlation coefficient was the relationship between documentaries and reality TV shows and television series. The analyses identified a strong, positive correlation between the two variables ($r=.963$, $n=51$, $p<0.01$).

A further review into television series, documentaries or reality TV shows highlighted that the program 'Ambulance Australia' was the major factor contributing towards the participants' decision to become a paramedic ($M=4.37$, $SD=2.37$, $p=0.00$). Further analysis highlighted that television series/reality TV shows outside of Australia had a medium positive correlation ($r=.373$, $n=51$, $p<0.01$). This is opposed to the Australian television shows with high positive correlation levels ($r=.979$, $n=51$, $p<0.01$).

Table 5. Media influence results based on 7-point Likert scale

Factor	Mean	SD	N
COVID-19 in the media	3.4510	2.09106	51
Newspaper articles	2.8235	1.62118	51
Books	2.8627	1.87638	51
Films about paramedics	3.4510	2.11956	51
Documentaries and reality TV shows	4.1569	2.22146	51
Television series	4.2549	2.22570	51
Other media	3.2157	1.64090	51

Discussion

Some useful trends were identified when reviewing the numerous factors contributing to a student's choice in studying paramedicine and ultimately wanting a career as a paramedic. Paramedic programs throughout Australia are starting to graduate large numbers of students. The number of paramedic students enrolled in university accredited courses in 2018 was 7465. This represents an almost 79% increase in student numbers in 5 years (8). In addition, the number of potential paramedic graduates in 2018 was 2692, an increase from 2013 of 984 students (8). These findings represent the significant factors contributing to students wanting a career in paramedicine and are essential in structuring recruitment strategies for universities and ambulance services, particularly if one specific factor leads to a spike in enrolment.

Altruistic factors played a dominant part in the career choice of paramedic students, with factors such as a desire to help others, a worthwhile and noble profession, is of professional interest, providing a public service, and paramedicine being a reflection of one's values and interests. These factors have been reported nationally and internationally in the paramedic literature previously (9). Studies out of an Australian university identified that motivating factors for a career as a paramedic included wanting to help people and save lives (10). These factors also correlate with findings from an earlier United States study that highlighted helping others as a strong motivator. Our study also identified that a paramedic's pay was not a significant contributor to a decision to become a paramedic. This finding is consistent with a systematic review of other healthcare areas that identified, where wages were regarded as a non-essential motivator, altruistic features and professional ethos become

more prominent for a student's motivation (9).

Intrinsic factors contributed much more than extrinsic factors regarding students' motivation to want a career in paramedicine. Despite job security rating relatively high as an extrinsic factor, students were more concerned with the intrinsic or desire to help others than job security. This finding correlates with Wu et al (7), who also identified that extrinsic factors such as job security were less motivator than altruistic factors, yet also reiterated that these factors are not necessarily less important. Pay as a lesser motivator was also highlighted in the study by Ross et al (10), highlighting that their study was when industrial action over wage disputes occurred. However, their findings are in correlation with our findings, which suggests that ambulance services that pay as an attractor are not essential in attracting paramedic students. The level of wages paid to paramedics once in the workforce may become a major contributing factor in retaining staff and has been long reported as the crucial element in workforce retention (11).

Gender differences could potentially be an influence on the choice of students in becoming a paramedic. Although data analysis for our study did not investigate the different motivations of the male participants to the female participants, the number of paramedic students that contributed to this study was 69%. This number is consistent with the ratio of female students entering paramedic degrees in Australia. In addition, the proportion of female students in paramedicine is consistent with female enrolment in universities where females accounted for 58% of all domestic students enrolled in Australia universities in 2016 (12). This finding is supported by a retrospective descriptive analysis of a 5-year dataset of paramedic science students where the majority of students were female (62%, n=528) (13).

From 2018 to 2020, Australia was at the peak of popularity for 'ambulance' or 'paramedic' television and reality TV programs being aired. Despite airing for over 3 years, ratings decreased from 734,000 viewers in 2018 to 447,000 in 2020 (14). However, despite these numbers, our study shows no evidence to suggest television programs contribute to enrolments. Ambulance Australia, the highest-ranked television program in our study by the participants (M=4.59), highlighted that reality TV shows about paramedics did not influence the decision to become a paramedic. This finding does not correlate with the literature, where programs such as CSI contributed to increased enrolment into forensic or criminal-investigation-themed courses (15); and L.A. Law contributed to increasing enrolment in law schools in the United States (16). This study instigated a review of the motivators for choosing a career as a paramedic. In addition, with student paramedic numbers increasing exponentially – especially for our university in 2021 with an increase of 134% – the researchers wanted to ascertain if the media effects of the COVID-19 pandemic or popular television shows were extrinsic factors. Ultimately, the findings have suggested that altruistic factors were the primary motivators for students studying for

their paramedic degree and are consistent with previous findings in both paramedicine and other healthcare disciplines.

Conclusion

The altruistic factors influencing career choices in paramedicine are generally similar across the healthcare industry. In this review, the motivating nature of extrinsic, interpersonal and sociodemographic factors was generally inconclusive. However, these factors may apply to a university's initial recruitment strategy and as a factor for ambulance services to consider when identifying the motivating factors of a student paramedic joining the workforce.

Competing interests

The authors declare no competing interests. Each author of this paper has completed the ICMJE conflict of interest statement.

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