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Graham G. Munro MHSM PhD(c)
La Trobe University, Victoria, Australia.

Peter O'Meara PhD
La Trobe University, Victoria, Australia.

Amanda Kenny PhD
La Trobe University, Victoria, Australia.

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RESEARCH**Paramedic Transition into an Academic Role in Universities: A Demographic and Qualification Survey of Paramedic Academics in Australia and New Zealand**Graham Munro MHSM PhD(c)¹, Peter O'Meara PhD¹, Amanda Kenny PhD¹1. *La Trobe University, Victoria, Australia.*

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Correspondence: *Graham Munro, Department of Paramedicine, La Trobe University. Email: graham.munro@utas.edu.au***Abstract****Objectives**

To identify the demographic and qualification characteristics of paramedic academics holding teaching and research positions at universities in Australia and New Zealand offering entry-level undergraduate or postgraduate degree programs in paramedicine.

Methods

A 17 item online normative internet survey was used to obtain demographic and qualification characteristics about the target group. The survey was divided into five categories: demographic data, professional qualifications, educational qualifications, learning and teaching experience, and level of academic skills. Data were collected over a two-month period in 2013 and then collated and reported utilising the capabilities of the Survey Monkey program.

Results

Of the estimated 66 eligible participants, 30 responded to the survey, 70% were male, the average age when entering academia was 43 years, and the average age when initially entering paramedicine was 23 years. Two-thirds completed their paramedic training in Australia and New Zealand, with the other third training in the UK, US, or Canada. There was a wide-range of levels of training and qualification reported with three having a PhD on entering academia, while most had little to no experience in research, academic writing, and publication.

Conclusions

Issues of the transference of cultural and professional capital from one community of practice (CoP) into another, the variance in the levels of academic qualifications amongst paramedics when entering academia, and the resources needed to mentor and educate a large majority of these new academics pose significant challenges to new academics and the universities employing them.

Keywords: *paramedicine, university, degree, transition, role***Introduction**

In this article we present the results of a survey of paramedic academics employed in Australian and New Zealand universities. The number of universities offering paramedicine degree programs is growing, and creates demand for qualified practitioners to assume academics roles. The results of this study indicate that most of those entering academic roles are underqualified to meet the traditional expectations of universities and there exist a number of challenges for paramedic academics and the institutions employing them. Little is known about the transition of paramedic practitioners into academic roles in universities. This study addresses this gap.

Paramedic Education

The discipline of paramedicine is relatively new compared to other more established healthcare disciplines, such as medicine and nursing. Universities provide undergraduate and postgraduate degree programs in Australia and New Zealand, where paramedic education has been situated in the university sector since 1995.(1) The

Ambulance Service of New South Wales provides a vocational training pathway for entry as an alternative to graduate entry.(2) The employee then graduates with a Diploma in Paramedical Science after three years. The longevity of this pathway is unknown.

In its move toward official recognition as a registered health discipline in Australia and New Zealand, the quality of education and training in paramedicine at tertiary institutions must meet industry standards, that in Australia are jointly administered by the Council of Ambulance Authorities (CAA) and Paramedics Australasia (PA).(3) In the United Kingdom (UK), where professional registration has been in place since 2000 (4), paramedic education standards are set by the Health and Care Professional Council (5) and the College of Paramedics.(6) With the increase in the number and size of paramedicine programs in Australia and New Zealand, with six programs in existence in 2006 (7) to 19 in Australia and two in New Zealand as of 2016 (8), there is a high demand for academically qualified paramedics to assume teaching and research roles. A major challenge for both the universities and the paramedics is the demand by

many of the universities that candidates for fulltime, lecturer positions have a PhD or are actively working toward a PhD, as a condition of employment.

The Paramedic Association of Canada has recently released proposed changes to the way in which paramedics will be educationally prepared for entry-level practice. As part of the Canadian vision, the Association is advocating for all paramedic education to be at baccalaureate level by 2025. (9) In the Republic of Ireland, graduate diploma-level post-employment courses, as well as Master of Science degrees in Emergency Medical Services, are being offered at the University College Dublin (UCD).(10) They are planning to offer a baccalaureate degree in paramedicine at a future date to be determined. The University of Limerick has commenced a four-year undergraduate degree program in 2016 along with an online honours degree for experienced paramedic practitioners.(11) Our findings will assist in the development of tertiary education for paramedics internationally, providing universities and potential paramedic academics with insights into some of the issues that may confront them, particularly those related to recruitment and preparation of future academics involved in university paramedicine programs.

The Transition to Academic Roles

There are many challenges that confront professional practitioners who transition to academic roles within universities. These challenges are arguably the result of new academics being under-qualified and underprepared for their future roles. These characteristics impact on their level of academic appointment, induction and mentoring, performance management requirements, expectations of research and publication output, and professional development.(12) The existing literature largely deals with the experiences of those transitioning from nursing and teaching positions into academic roles in universities.(13-22) It is unclear whether paramedic practitioners experience similar issues.

The demographic and qualification characteristics of paramedic academics are unknown and a greater understanding of the makeup of this group would assist universities and the members of the paramedic academic community of practice (CoP) to facilitate the successful recruitment and transition of new academics. Our aim was to identify the demographic and qualification characteristics of paramedic academics holding teaching and research positions at universities in Australia and New Zealand offering entry-level undergraduate and postgraduate degree programs in paramedicine.

Methods

This study used a 17 item normative internet survey through Survey Monkey (Sydney, Australia®).

The target population consisted of all paramedic - qualified individuals holding academic positions in

universities offering entry-level undergraduate or postgraduate degree programs in paramedicine in Australia and New Zealand. They were contacted by email to participate in the survey using the membership list of the Network of Australasian Paramedic Academics (NAPA). The membership of NAPA is currently restricted to fulltime lecturers in paramedicine degree programs in Australia and New Zealand and is a Special Interest Group (SIG) of Paramedics Australasia.(23) Non-members of NAPA were contacted through email and word-of-mouth by NAPA members. Reminders were sent out by email through the NAPA mailing list one-month following the original request for participation. It is estimated that there were 66 members in NAPA at the time of the survey, based on the email list for the group.

A search failed to identify any surveys that identified the demographic and qualification characteristics of paramedics in academic positions in Australian or New Zealand universities. As there was no previous validated survey instrument, the survey questions were initially developed by the researchers, then piloted with five individuals with similar backgrounds to the participant population outside of the target geographic region of Australia and New Zealand. Revisions were made to the survey before it was made available via the Survey Monkey website.

Data were collected over a two-month period in 2013. The survey consisted of an electronically-based questionnaire (Survey Monkey) with 17 items requesting responses. All items were designed as forced responses with no provision for "other" responses. The data were stratified into five groups; demographic data, professional qualifications, educational qualifications, learning and teaching experience and level of academic skills. All participants were presented with an information sheet that fully described the nature of the research and the conditions of participation, along with a consent form. By accessing and attempting to complete the questionnaire, they gave their consent on the date of access. A link to the survey was provided for the participant to access anonymously.

This study received ethics approval from the La Trobe University, University Human Ethics Committee Approval No: FHEC13/088.

The data were collated and reported as part of the capabilities of the Survey Monkey tool. Where applicable, data were illustrated as both bar graphs and by number of responses and percentages for each response in that item. Other data were illustrated as individual responses to the specific survey item. Any data that required means and medians for reporting were calculated by using Excel (Microsoft, Redmond, Washington). Because of the normative nature of the survey no statistical analysis software programs were required.

Results

Response Rate

The number of paramedic academics that are employed in universities offering undergraduate paramedicine degrees in Australia and New Zealand is unknown. An estimate was made that the potential study population was 66 paramedic academics, based on the number of members of The Network of Australasian Paramedic Academics (NAPA) on the email contact list. It is unknown how many potential participants were not on the NAPA list. At the end of the data collection period, 30 participants had completed the survey, providing a response rate of 45%.

Seventy percent (n=30) of the respondents were male, reflecting the current gender profile of the paramedic practitioner workforce in Australia and New Zealand which is 68% male and 32% female(24). The percentage of female paramedics in the 20 – 29 age group is 53% and growing, which is reflective of the changing demographic profile of the profession, which was predominately male until the mid-1980s.(24) The ages ranged from 28 to 56 with the median age being 43 years. The six age groupings and their data are illustrated in Table 1. The mean age when the participants entered the profession of paramedicine and the mean age of the participants at the time of the survey, equates to a mean time of 20 years of involvement in paramedicine before becoming an academic.

Table 1. Demographics

Variable	Value
Male n (%)	21, 70%
Age in years (mean, median)	43, 43
Age by category n (%)	
25-29 years	1 (3)
30-44 years	2 (7)
35-39 years	3 (10)
40-44 years	11 (37)
45-49 years	6 (20)
50-55 years	6 (20)
Age not reported	1 (3)
Median age (in years) at which respondent entered the profession	23

For the participant population, 67% (n=30) entered the paramedic profession in Australia and New Zealand. The remaining 23% began their careers in North America or the United Kingdom. The remaining 10% were non-respondents. As there are no clear, internationally recognised definitions of paramedic qualifications or role descriptions, the levels of paramedic qualification used were obtained from the Paramedics Australasia document, Paramedicine Role Descriptions.(25) An Emergency First Responder is someone that has received accredited training in Advanced First Aid and usually responds prior to the arrival of more highly-trained emergency personnel. Primary Care Paramedic, Advanced Care Paramedic, or Paramedic is a healthcare

professional who provides rapid response and a higher-level of assessment and treatment in the out-of-hospital environment. Presently, the entry to practice qualification in Australia and New Zealand is a Bachelor Degree in Paramedicine, with New South Wales still offering a vocational entry pathway in addition to the degree entry pathway. The Critical Care or Intensive Care Paramedic has a more advanced scope of practice which encompasses advanced resuscitation and treatment modalities. They may function in a land-based ambulance service or provide critical care retrieval services in a flight environment. The present qualification in many states is a Master Degree in Intensive Care Paramedicine. The category of Special Teams was included because of the potential number of participants that practiced in North America. Special Teams are comprised of paramedics that receive specialized training in Tactical Paramedicine (work with Police and/or Military tactical teams), and Chemical, Biological, Radiological, and Nuclear (CBRN) teams to name two. These specialized teams have yet to be formalized in Australia and New Zealand. Each of these definitions and qualifications vary according to the state or country. The length and type of their entry-level training, the location of their paramedic experience, and the level of scope of practice is illustrated in Table 2.

Table 2. Paramedic qualification and experience

Variable	Value n (%)
Location of paramedic system where initial training obtained	
Australia	20 (67)
United Kingdom	1 (3)
Canada	3 (10)
USA	3 (10)
No response	3 (10)
Length of entry-level training	
<6 months	7 (23)
6-12 months	5 (17)
1-2 years	4 (13)
3 years or greater	14 (47)
Type of entry-level training	
In-house vocational	16 (53)
College vocational	10 (33)
University diploma	3 (10)
University degree	1 (3)
Paramedic system where majority of experience gained as a paramedic	
Urban city	23 (77)
Urban/rural fringe	3 (10)
Rural	3 (10)
Remote	0
Military	0
Industrial	0
Air ambulance	1 (3)
Level of paramedic certification obtained	
Primary care paramedic	1 (3)
Advanced care paramedic	10 (33)
Critical care paramedic	14 (47)
Special teams	0
No response	5 (17)

The level of postsecondary education prior to entering academia is profiled in Table 3. This data contributes to the discussion of the influence of their experience in academia as a student to their perceptions and expectations of their role as a new academic in a university.

Table 3. Education	
Variable	Value n (%)
Level of post-secondary education completed prior to entering academia	
None	1 (3)
College	1 (3)
Undergraduate degree	9 (30)
Graduate Diploma	5 (17)
Master's Degree	10 (33)
Doctorate/PhD	3 (10)
No response	1 (3)
Mode of tertiary education	
Full time/on-campus	6 (20)
Part-time/on-campus	11 (37)
Distance/online	11 (37)
No response	1 (3)

Table 4 depicts the level of instruction/teaching experience the participant had prior to entering an academic role in a university. This contributes to the discussion surrounding the type of learning and teaching experience the participant had in comparison to the methods and expectations of tertiary learning and teaching. In addition, Table 4 depicts the participant's average years of clinical practice before becoming involved in instruction/education.

Table 4. Learning and Teaching Experience	
Variable	Value n (%)
Involvement in training/education prior to first position as part-time/full-time academic	
CPR/First Aid Instructor	10 (37)
Sessional instructor in vocational programme	13 (48)
Sessional instructor in tertiary programme	10 (37)
Full-time instructor/trainer	15 (56)
<i>*Some participants responded more than once to some of the questions.</i>	
Years of paramedic experience before pursuing any educator role	
Mean	8
Median	10

Table 5 details participants' levels of qualification and experience in each of those academic skills categories that universities expect of novice academics. These data are particularly relevant to the discussion about levels of academic appointment, issues related to induction and mentoring, performance management requirements, and professional development.

Table 5. Academic Skills	
Variable	Value n (%)
Level of experience in research before entering academia	
None	11 (37)
Participant	9 (30)
Member of investigation team	5 (17)
Chief investigator	3 (10)
Higher education qualification	8 (27)
Level of formal education in research before entering academia	
None	9 (30)
Self-taught	1 (3)
Undergraduate subject	4 (13)
Postgraduate subject	11 (36)
Research qualification	4 (13)
No response	1 (3)
Level of experience in academic writing before entering academia	
None	5 (18)
Self-taught	4 (13)
Undergraduate	7 (23)
Postgraduate	13 (43)
Doctoral/PhD	1 (3)
Experience in journal/book publication before entering academia	
None	20 (67)
Co-author	5 (17)
First author	6 (20)
Number of publications prior to entering academia	
None	21 (70)
1-3	8 (27)
3-5	1 (3)
> 5	0
<i>*Some participants responded more than once to some of the questions.</i>	

Discussion

The path taken by paramedics when entering academic roles in universities is strewn with challenges and obstacles. While these transition experiences are not unique to paramedicine, there is little to no knowledge of their experiences.

The traditional role of the academic is to provide transference of knowledge and cultural tradition through formal and informal teaching and learning, as well as conducting research into their discipline and expanding the foundation of knowledge through publishing in peer-reviewed journals and other media. In addition, they are role models and mentors to the students who assist them with their entry into their respective community of practice (CoP).(26)

The demographic profile of paramedic academics in this study closely resembles that of the paramedic workforce in Australia and New Zealand.(24) One advantage is that this provides paramedicine students in university programs with a realistic representation of the workforce they will enter following graduation. This type of role modelling has been

shown to have a substantial influence on career choices, particularly for underrepresented groups such as women.(27)

For most students, their first exposure to the culture of paramedicine is obtained during their initial time spent in the classroom with academics and instructors prior to being exposed to practicing clinicians during field placements in paramedic services. This is the time when the effect of mentorship and role modelling can have its greatest impact. (28) The importance of this timeframe is demonstrated by Gibson (28), where he explores three major aspects of positive role models. First, students are able to perceive that they are similar in some aspects to the role model, which provides a level of satisfaction. Second, the role model can provide role-expectation information, standards of performance and expertise of skills that can contribute to Bandura's concept of self-efficacy.(29) Third, a role model can exemplify what the novice can possibly accomplish, after attaining prominence within the CoP. These aspects are all part of the early development of a student's emerging professional identity.

Australia and New Zealand have been graduating degree-qualified paramedics since the first undergraduate program was started at Charles Sturt University in 1995.(1, 30) Subsequent programs have evolved over the past 20 years, yet there remains a dearth of academically qualified paramedics willing to move from clinical practice into academic roles in universities. This has necessitated the recruitment of qualified paramedics from overseas to fill some of the growing demand in Australia and New Zealand (see Table 2).

With approximately 25% (n=30) of participants teaching into degree programs in Australia and New Zealand coming from outside of the region, important questions need to be asked about the positive and negative transference of paramedic culture, methods, practices and principles that overseas academics bring with them to paramedic programs in Australia and New Zealand. If students acquire their first exposure to the culture of paramedicine at university, what impact do these academics have on the formation of the students' professional identity? Wenger's concept of community of practice (CoP) would describe these students as legitimate peripheral participants (LPP); novices that remain on the outside of the community of practice with the aim of moving into the core of the CoP by attaining experience, knowledge, and acceptance (26), otherwise known as professional capital.(31) In relation to the international paramedic academic, the impact of differences in clinical practice, the philosophy of practice or ethos, and other principles that exist between their home cultures or CoPs and the cultures and CoP of paramedicine in Australia and New Zealand is unclear. More importantly, potential challenges to the international academic teaching in a paramedicine program needs investigation.

The reason that universities recruit internationally is possibly related to a desire to bring 'richness' and a

difference in perspective and experience to the courses offered. In research conducted on the culture of universities in the UK, Kim (32) argues to the contrary:

...the contemporary condition and pattern of transnational academic mobility is shaped by neoliberal policy and market-framed research competitions. The international recruitment of academics in universities is mainly for research and research assessment exercises in the UK, and certainly not for 'interculturality' in higher education (32, p.396)

With the increasing focus by Australian universities on obtaining research funding, conducting research and the resulting publications that ensue, if the focus of Australian universities is similar to those in the UK, then the recruitment of paramedic academics without research and publication experience seems to be counterproductive to the forces that drive academic output. Additionally, it might be a threat to the continuing viability of paramedicine programs in 'elite' universities that often have strong policies to only recruit academic staff with doctoral-level qualifications. As the data reveal, 67% of participants had no prior experience of involvement in academic publications and 70% had no publications of their own.

This suggests that universities may have difficulty recruiting enough qualified paramedic academics to deliver their programs and to satisfy other scholarly objectives. A radical change in the structure and delivery of some paramedicine programs may be indicated, with a core group of academics assuming the traditional roles of research and publication while providing supervision, oversight and mentoring of a greater number of sessional teaching staff. Another option being utilised is that of joint appointments seen in medical and nursing programs in which academics continue to work in practice while holding part-time or sessional positions at the university. These models provide economic savings to the universities while providing students with exposure to experienced practitioners as positive role models.

It has been estimated that the average amount of time needed to bring a novice academic with little to no experience to independent performance in a university is seven years. (33) Universities need to be aware of this issue and if they wish to employ academics from the professions that are lacking a sufficient number of academically qualified practitioners, then considerable resources need to be dedicated to mentoring and developing these individuals to bring them to expected levels of performance.

Aside from teaching knowledge and skills, there is an expectation from universities that academics will have the necessary skills to begin the core duties of an academic on commencement of employment. The data in Table 5 demonstrates that a large majority of paramedic academics beginning academic roles in paramedicine programs in Australian and New Zealand universities did not have the

requisite skills required to permit them to start meeting performance expectations within the first year of their employment.(21) Due to these deficits, many new academics required a considerable amount of time and resources to enable them to acquire these necessary academic skills, such as research, academic writing, and publishing in peer-reviewed academic journals and textbooks. There may be a correlation between these challenges and the relatively high-rate of turnover of paramedic academics at Australian and New Zealand universities.

Universities have expectations that new academics bring a certain level of expertise with them concerning the pedagogical approaches utilised in universities. In this study we found that the majority of participants acquired their knowledge and experience in teaching and learning within the vocational education sector (Table 4). Thus, many bring with them the skills and concepts learned in their vocational educational experience as well as the methods utilised when they may have attended university. This is of concern when the belief is that most teachers teach the way they were taught, bringing with them good and bad methods and attitudes.(34) The extent to which their own learning experiences influence their ability as paramedic academics to adapt to and implement pedagogies associated with centres of higher learning need to be explored. This issue is partially addressed by universities, in that they require most new academics to undertake some form of course work into the principles of university learning and teaching, but the depth varies between institutions.

Academics teaching in paramedicine programs in Australia and New Zealand constructed their perceptions of academic culture and process in various ways. The data in this study indicate that most academics teaching into paramedicine programs in Australia and New Zealand obtained their degrees by attending university in the traditional way as young, fulltime, on campus students. However, it should be noted that a considerable percentage of them (39%) acquired their degrees, and ultimately, their construct and perceptions of academia "from their dining room tables" through online or distance education formats as mature-aged students, having spent various numbers of years within their profession. The issues confronting both groups of academics are documented in the literature for other health professions (21), but the impact on paramedic professionals transitioning into academic roles in Australian and New Zealand universities is unknown.

There has been discussion over the past ten years that some of the reasons that paramedics are not entering the academy is that salaries and benefits in the paramedic services are superior to those in universities.(35) Other arguments are that university appointments are unattractive when fixed-term contracts of one or two years are offered and when a post-graduate degree or PhD is an essential or desired qualification for relatively junior appointments. Some universities are mitigating these issues with offers of teaching

focused positions, thus modifying the requirements for post-graduate qualifications and the need to demonstrate research and publication outputs.(36,37) These issues pose the question of why an academically gifted paramedic would leave a position of relative security to take on a role that is relatively insecure from a financial and professional perspective.

Even though Australia and New Zealand have a relatively high number of degree-qualified paramedics, there is limited evidence that universities or paramedic services are providing consistent and accessible avenues for professional development in an effort to assist those with a desire to upgrade their qualifications to post-graduate or doctoral levels before being recruited into academic roles. This raises the question of where the responsibility lies for the development of the paramedic academics of the future.

A dialogue between major stakeholders in the profession needs to take place to try and find a reasonable structure to facilitate professional development and career paths for those seeking to transition into academic roles. Possible avenues to explore would be to provide aspiring academic paramedics with academic professional development programs such as the program trialled at the University of Tasmania's Sydney campus in 2015/2016. Sessional tutors were mentored by academic staff and provided with learning materials and seminars on principles of adult learning, effective lecturing, debriefing of students engaged in simulated learning environments, and opportunities to conduct lectures with both written and verbal feedback provided by experienced academics. Anecdotal feedback from students, the sessional staff and academics was very positive indicating an increase in engagement from both sessional staff and students, an increase in satisfaction of the experience by the tutors due to more formal structure in the delivery of subject materials and a heightened sense of professionalism. Learning and teaching grants are available to provide support to the tutors who wish to pursue additional educational development opportunities. Further consideration is being given to exploring joint appointments and giving better qualified tutors opportunities to develop and deliver entire subjects under academic supervision. An additional benefit would be exposure to the culture of the university regarding research, publication and learning and teaching expectations.

Limitations

The survey instrument used in this study was constructed with forced-response questions that aimed to limit the responses available, thus forcing some participants to provide answers that may not have been an accurate description of their response.(38) In some of the questions, participants provided more than one answer thus skewing the results. Because the total number of paramedic academics working in paramedicine programs in Australian and New Zealand universities is unknown, it may be difficult to ascribe

accurate deductions from the data. There is presently academic debate concerning the relevance of response rates in quantitative surveys. In a survey by Carley-Baxter, et al. (39) of journal editors, they indicated that there was no agreed standard for acceptable response rates in the acceptance of papers for publication and that only 3% of respondents stated that they rejected primarily due to a low response rate; 69% indicated that this happened some of the time; and 29% stated that they never rejected a submission due to low response rates. So the effect of our response rate of 45% is a matter of debate.

Conclusion

The results of this survey indicate that a large percentage of paramedic practitioners transitioning into academic roles in paramedicine degree programs in Australian and New Zealand universities face challenges. These include the transference of cultural and professional capital from their previous community of practice (CoP) into the CoP of Australian and New Zealand universities; their ability to acclimate to the environment of academia; the degree to which they have developed the necessary academic skills to achieve an acceptable level of performance in undertaking research, obtaining research grants, academic writing and publishing, and teaching in the higher education environment; and the significantly increased burden of time and maintaining their psychological well-being as a result of the added workload needed to acquire or improve these necessary scholarly skills. Individual universities and the wider CoP need to recognise these challenges and decisions need to be made concerning the dedication of human and monetary resources to mentor and educate aspiring and new academics in the emerging paramedicine discipline.

Author contributions

GM was the principal author of the manuscript and performed the literature review. POM and AK validated the literature review and contributed to the final editing.

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