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Postgraduates' Perceptions of Preparedness for Work as a Doctor and Making Future Career Decisions: Support for Rural, Non-traditional Medical Schools

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ABSTRACT

Introduction: The intern year is a critical time for making career decisions and gaining confidence in clinical skills, communication and teamwork practices; this justifies an interest in junior doctors' perceptions of their level of preparedness for hospital work. This study explored Australian junior doctors' perspectives regarding the transition from student to doctor roles, their preparation as medical undergraduates within either traditional metropolitan schools or smaller, outer metropolitan-based (rural) programs such as Rural Clinical Schools (RCS), and the educational environment they experienced in their internship.

Methods: A qualitative cross-sectional design used semi-structured interviews with postgraduate year one and two junior doctors (9 females and 11 males) within teaching hospitals in Queensland Australia. Interview questions focussed on four major content areas: preparedness for hospital work, undergraduate training, building confidence and career advice. Data were analyzed using a framework method to identify and explore major themes.

Results: Junior doctors who spent undergraduate years training at smaller, non-traditional medical schools felt more confident and better prepared at internship. More hands-on experience as students, more patient contact and a better grounding in basic sciences



were felt by interns to be ideal for building confidence. Junior doctors perceived a general lack of career guidance in both undergraduate and postgraduate teaching environments to help them with the transition from the student to junior doctor roles.

Discussion: Findings are congruent with studies that have confirmed student opinion on the higher quality of undergraduate medical training outside a traditional metropolitan-based program, such as a RCS. The serious shortage of doctors in rural and remote Australia makes these findings particularly relevant. It will be important to gain a better understanding of how smaller non-traditional medical programs build confidence and feelings of work readiness in graduates. Career advice should become a more regular part of the medical education continuum.

Keywords: Postgraduate medical training, undergraduate medical training, non-traditional medical schools, career decisions, junior doctors, interns

Introduction

In Australia doctor workforce shortages are being addressed by a combination of creating more medical schools and increasing enrolment. The resulting increase in medical students and graduates will pose an obvious challenge to maintaining the quality of undergraduate and postgraduate clinical training¹⁻³. There is a risk that medical, surgical and emergency departments will become overburdened with medical students and junior doctors, creating difficulties in providing adequate supervision and thus diluting clinical experiences. Undergraduate medical programs and teaching hospitals may need to reassess their ability to train this influx of students through registrars^{2,4,5}.

In 2006, Australia identified the national curriculum framework for junior doctors⁶. This was a significant and positive initiative toward continuity in medical education throughout the transition period from medical student to intern year⁷, when the literature has identified a gap in the support provided to learners⁸⁻¹⁰. Recent studies^{11,12} have helped define what students want in an internship and indicate that two years before graduating students are already considering their internship plans.

The early postgraduate years provide a vital opportunity for junior doctors to strengthen their knowledge and skills and acquire a range of professional competencies to help them make or confirm career decisions^{13,14}. The intern year in particular is perceived as a major transition with an abrupt increase in workload and responsibility, where performance transfers from “knowing” to “doing”¹⁵.

Concerns about the hospital working environment and available learning opportunities reinforce studies that suggest that interns feel unprepared for all the skills and knowledge needed to undertake the responsibilities of their new role^{9,16}. Furthermore formal education and training during early postgraduate years is often reported to be insufficient and of variable quality, and to lack career guidance^{9,16-19}. Quality of training and job satisfaction in medicine are important because errors in medical practice can be catastrophic, as they can be in other high risk industries such as aviation²⁰.

The need to maintain the quality of teaching and learning justifies an interest in students’ perceptions of their feelings of preparedness for working as doctors. Their perceptions can help educators better understand this transition period, implement ways to prepare students for this period and ultimately help them become better doctors²¹⁻²³. With these issues in mind, the aim of this study was to canvass the opinions of junior doctors (postgraduate years one and two; PGY1 and 2) in Queensland teaching



hospitals regarding their reflections on the quality of their undergraduate preparation and the educational environment they experienced in their internship.

To acquire a better understanding of the transition from student to doctor and to help identify gaps in the medical education continuum, the research questions ask: 1) how junior doctors perceive their transition from student to doctor, 2) their opinion on how their undergraduate training prepared them for their intern year, and 3) what guidance they received on career choices.

Methods

The study employed a qualitative cross-sectional design. Ethical approval was obtained from the Behavioural and Social Science Ethical Review Committee of the University of Queensland.

Participants

Participants were junior doctors (PGY 1 and PGY 2) currently employed in Queensland Health training hospitals who indicated their interest in participating in an interview as part of a survey from a related study (total respondents = 167; 40% agreement to participate rate). The major demographics of this larger study comprised 60/40% female/male, 53% were aged between 26-29 years old, 79.4% were graduates of a large traditional metropolitan medical school (large metropolitan university = LMU) and 48% spent a portion of their undergraduate training at a smaller outer metropolitan medical school, typically a Rural Clinical School²⁴. Rural Clinical Schools (RCS) are smaller, located in outer metropolitan locations and considered 'non-traditional' but still operate a full medical school program.

From the pool of interested junior doctors, males and females were alternately contacted at random in order to obtain a balanced representation by sex. All junior doctors who indicated their willingness to be interviewed agreed to an interview when contacted.

Materials

The semi-structured interview questions were derived from the literature and from results of an associated quantitative survey²⁵. Questions focussed on junior doctors' reflections of their transition from student to doctor, feelings of preparedness for their intern year and early career decisions (see Table 1).

All semi-structured interviews took place in March 2009, were conducted by telephone, audio recorded and lasted between 30-40 minutes. An experienced researcher unrelated to this study and not known to any of the participants carried out all the interviews. Confidentiality was assured and made clear to each participant as required by ethical protocol. Interviews were transcribed verbatim prior to analysis using the five stage framework method²⁶ which entails: familiarizing with the raw data, identifying the thematic framework, coding the framework, organizing codes into themes and interpreting the themes. The author and one other researcher shared the analysis. Inter-coder reliability was checked and confirmed twice during the analysis to ensure consensus of themes and integrity of the findings.

**Table 1: Interview Schedule Data collection and analysis****First I'd like to ask you about your perceptions on how prepared you were to start postgraduate training i.e. your internship**

How prepared do you feel you were for your first year of internship?

How work ready do you feel you were?

Was the work and the workload what you expected?

- If not – how was it different than what you expected it to be?

How much of your work readiness was down to your efforts and how much was down to your medical education (your MBBS curriculum)?

Would you have benefited from a more solid grounding in the basic sciences?

- If so – which sciences in particular?

How would you have benefited from more procedural / practical skills experience?

How would you have benefited from more work on your communication skills?

How would you have benefited from more work on clinical reasoning?

How would you have benefited from more patient management skills?

How would you have benefited from more interprofessional experience and exposure to working in a healthcare team e.g. allied health professionals, nurses?

Did you do a 4- or 6-year medical course?

- Are you happy with how it was structured and what was taught?

On a scale of 1 to 10 with 1 being least confident and 10 being most confident; how confident;

- Did you feel at the start of your intern year?
- Do you feel now?

What do you feel is most important in building the confidence you need to start out your intern year?

- More work on your part
- More specific training in med school

Finally I'd like to ask you about your perceptions on your postgraduate training

How much of what you know now as an intern or junior doctor do you feel you got from your undergraduate education at university and how much from your postgraduate training in the hospital?

How well supported were you, by your hospital, as an intern?

What advice and support is given to you regarding early decisions you need to make toward your career pathway?

Results

Data saturation was reached when no new information was provided by the interviewees. This occurred after 20 interviews. Interviewees included 11 males and 9 females and ages ranged from 26 to 29 years. Sixteen junior doctors had graduated from four-year medical programs and the other four from six-year programs. Just over one-third (n=8) attended a RCS as part of their



undergraduate training. The major areas of enquiry focussed on preparedness for hospital work, undergraduate training, building confidence and career advice.

Perceptions of preparedness for hospital work

The majority felt that overall they were only 'adequately' prepared for their intern year. The notion adequate comprised a range of preparedness but further detail always indicated the feeling that they were more under- than over-prepared.

I was prepared for the fundamentals, not the basics. I felt the science behind me was good for why you would do it - but not how you would do it. (LMU#10 = large metropolitan university student number 10)

The exceptions were students who had attended a RCS. All of these students reported feeling well-prepared, and the difference between the RCS and non-RCS students became more apparent through subsequent questions.

I felt pretty well-prepared – I had my last two years in a clinical setting with plenty of practical and procedural stuff. Been in rural centres and had a good understanding of how hospitals work. (RCS#1 = smaller rural clinical school student number one)

Nearly all junior doctors reported that the workload they experienced in their first intern year was what they were expecting i.e. they expected the workload would be high. The most notable comments were associated with the long hours they were expected to work, in particular long weekends. Other comments regarding unexpected aspects of the workload were the pace of the work and the amount of paperwork involved.

I found it depends on where you go. Some rotations were well below and others like neurology were unbelievably busy. But I also didn't expect to spend most of my internship haggling on the phone and doing paperwork. (LMU#9)

Only a few reported feeling very ready and able to begin working as a doctor at the start of their intern year. In contrast just as many felt under-prepared but believed they were able to adjust and 'catch up' with the routine and expectations over time. The intense hours seemed to be the biggest hurdle for a small proportion of junior doctors who recalled feeling very unprepared for the workload.

Hours were much more than I expected - 12-13 hour days! Also the speed at which you had to get things done was faster than I expected. (RCS#7)

When asked to elaborate on factors that contributed to their level of work readiness, the predominant reason was due to 'their own efforts/experiences' with only a few junior doctors citing their undergraduate medical curriculum as primarily responsible, although some acknowledged both. By 'own efforts' students meant that they seek their own extra experiences, primarily existing of hands-on skills training. All the former RCS students fell into this category and all cited the benefits derived from the extra amount of hands-on experience and patient exposure they gained in doing so. It was also suggested that attending a RCS offered more opportunity to seek out this extra experience.



I was pretty proactive about taking advantage of extra training and exposure. I did some rural placements which gave me a lot of practical skills as well as the necessary cognitive skills to deal with most of the stuff in my intern year. But then you immediately build on that, so you soon feel more confident and you are on your way. (RCS#1)

Undergraduate training

The majority of junior doctors reported they were satisfied with the structure of their undergraduate education. Several comments highlighted the fact that students felt they needed to be very self-directed learners to do well and for this reason the problem-based learning (PBL) structure of teaching was a challenge to a few. Additionally, all offered comments relating to the increases in class size which was universally seen as a detriment to learning. Undergraduate training as a main theme was also defined by several specific sub-themes all of which related to its content and quality.

Basic sciences: The majority felt they would have benefited in their intern year from a better ‘grounding’ in the basic sciences, in particular anatomy followed by pathology and pharmacology. These comments were primarily from those who attended a four-year undergraduate program or did not have a bio-science background. Other comments suggested that there should be more integration of basic sciences in the later clinical years where it is more appropriate to training.

I noticed this more early in my degree when I felt certain aspects were underdone like anatomy but not so much now in the clinical years. Plus I’ve learned the skills to find the information I need if the information was not taught. (LMU#19)

Procedural/practical skills: The sample was divided on opinion about learning more procedural skills in undergraduate training. Those who felt they would have benefited cited confidence as the main reason for needing a good procedural skills base.

That [more procedural skills training] would have been very useful. A lot was implied that you would learn on the job but more structured training would have helped a lot. This I think is the key to adapting in your first year. It gives you that confidence and also allows you greater independence. You realise pretty quickly in ward rounds that you are not up to scratch. (LMU#13)

The other half of the sample felt they had adequate procedural skills starting out as an intern. It is noteworthy that all the prior RCS graduates were of this opinion. All cited instances of how they acquired exposure if not proficiency in many procedural skills while still an undergraduate. It was also noted that being pro-active was necessary i.e. the students needed to seek out opportunities for learning these skills. Indeed these students attributed their extra skills base to their own efforts.

Got lots [of procedural practice] because I did a lot of rural placements. So I felt pretty prepared for internship. Procedural skills need to be done as you do them – you need to experience and get in there and give it a go. They can’t be taught in a class. (RCS#6)

It’s better to learn the practical stuff yourself and besides I don’t think they could have fit anymore in (to the medical curriculum). (RCS#1)



Communication skills: All students felt they had acquired the necessary communication skills needed to start their internship from their undergraduate training. However a few comments suggested that there needs to be more attention on encouraging 'reflection' in students.

These are difficult to teach in a university setting – often something better taught and learned through clinical application. We got communication skills throughout, they could not have done better but what would be good is more emphasis on being a reflective doctor. Emphasis on reflection on our own practices so you learn how to be a reflective doctor. (LMU#10)

Clinical reasoning skills: There was a mixture of opinion regarding when clinical reasoning skills are best taught. Several felt that these are more appropriate and applicable to learning while doing i.e. during internship.

Clinical reasoning is difficult to teach in theory – better in practice. I had a very solid basis in basic science rather than clinical reasoning itself. Difficult to teach in university setting and small group teaching in a hospital setting is best, seeing real patients. (LMU#20)

Those who felt this should be covered in their undergraduate curriculum were divided in their views regarding how well that was achieved but all agreed that they would have benefited greatly in their intern year had they been more confident in their clinical reasoning.

It would have added to the confidence that you feel dealing with novel situations especially when you are in a term like emergency where you have to do a lot of clinical reasoning independently. It would have made early internship a lot easier. (LMU#13)

All junior doctors expressed concern about the increasing number of new graduates entering the system and already see the threat to the effectiveness of their learning.

With small group teaching the problem is getting that there are just too many students and not enough teachers to have small groups learning anymore. You learn by experience and applying the knowledge and these experiences are going to be less and less with more and more graduates. (LMU#18)

Escalating numbers are a serious concern and they should be looking at maintaining the quality of teaching whilst increasing the quantity (of students). (RCS#5)

Patient management skills: The majority felt they would have benefited from learning better patient management skills in their undergraduate training. The exceptions were those students who had a prior clinical qualification (e.g. nursing) and those who attended a RCS. Their comments were indicative of an understanding of multi-disciplinary work and the complex nature of patient care.

RCS experience was strong here, we were always encouraged to be part of the team and day to day management was something really encouraged. Things like managing aggressive behaviour and breaking bad news. (RCS#3)



Interprofessional experience: Junior doctors' opinion on their level of interprofessional experience was congruent with patient management skills. As indicated above, those who had a good grasp of managing patients also appreciated the interprofessional nature of that management. The concept of teamwork was a frequent comment expressed by those who felt better prepared for internship. Others acknowledged that although they were lacking in these skills at the start of their intern year these concepts became clear during their training.

I didn't have a good idea of how allied health professionals interacted – it would be good for med students to follow them around for a day to see what they do. I see now how understanding the roles of others improves your work readiness for things like referring so you know who can do what. (LMU#11)

Building confidence

Confidence was the overwhelming theme throughout all interviews in regards to feelings of preparedness for hospital work. According to our sample the most important factor in gaining this confidence was reflected in comments on 'practical experience' and 'exposure to hospital work' as an undergraduate.

More specific training on what is expected of us as an intern and how it all works in a hospital [environment]. For example, getting practical experience and hands-on in a protected environment. An integrated student role with increasing levels of responsibility would be ideal so we could progress and seeing that progression would give you a lot of confidence. (RCS#7)

Getting good clinical guidance at the start of your intern year from registrars and consultants and knowing my role and what is expected of me, I feel this is really vital. (LMU#10)

We asked junior doctors to reflect on how much of what they know now was due to their undergraduate training and how much to their first intern year of postgraduate training. Most attributed 40% of what they know to their postgraduate training and 60% to undergraduate training. Feeling supported was also felt to boost confidence. Half of the sample reported feeling very well supported by their hospital during their intern year and were most appreciative of that support. Only a few junior doctors felt unsupported some of the time and the remaining were generally satisfied with support throughout the year.

I couldn't speak more highly of the support I received throughout but being in a smaller sized hospital helped I think so I was very well supported. (RCS#9)

It depends a lot on the department, some were very good in their support for us but others didn't want to know. Generally people are pretty understanding that you are an intern and are pretty helpful as a whole. (LMU#16)

Career advice

All junior doctors were in complete agreement regarding the lack of help or advice available in their undergraduate training and intern year about issues of future speciality choice. There was a definite note of anxiety associated with this question. Most had not settled on their chosen discipline and none were aware of any resources or counselling available to discuss these early career decisions in their hospital nor could recall this advice or direction in their undergraduate years. All felt that more opportunities for



advice or information should be provided in undergraduate years but equally, that the intern year was most important to obtaining up-to-date advice and a chance to get some first-hand understanding of what is required in particular disciplines.

We got nothing. Have to find out for yourself but there are no resources or help for you to go by and we got very little support from administration regarding formal career advice – just some information session and haven't heard from most of the colleges. (LMU#19)

This was not dealt with very well. We certainly got no unbiased advice – surgeons want you to be a surgeon etc. Most information you get is anecdotal, nothing structured. You have to go out and get it yourself. (RCS#5)

Discussion

This study investigated junior doctors' perceptions of their transition from being a student to doctor in the state of Queensland in Australia. The major focus of discussion was about their feelings of preparedness to begin work as a doctor. The majority perceived their overall ability to start their intern year as inadequate. Congruent with other studies²⁷, they experienced varying levels of unease when suddenly faced with increased levels of responsibility, expectations, long hours, intense work load and work pace and unfamiliar hospital routines. Most junior doctors expected to feel some degree of ineptitude but over time were able to "catch up along the way". Feelings of confidence were very important and for most junior doctors this increased steadily by the end of their intern year.

In terms of undergraduate curriculum content the majority felt that a better grounding in basic sciences is necessary especially for those students without a bio-science background. Of particular note was the perceived importance of the acquisition of procedural skills, reported to be variable among the interviewees and noted elsewhere²⁸. Although good procedural and clinical reasoning skills were highly coveted and seen to be advantageous to a new intern, opinion was divided on when these are best taught. Those junior doctors who felt most confident with these skills admitted that they sought out extra opportunities to learn them. This supports the other common opinion that these are best "learned on the job", that is as one progresses through internship because there is "no room" in the undergraduate curriculum.

Patient management skills and interprofessional experience seemed to go hand in hand and reflected the level of teamwork both practiced and understood coming into their internship. Those who felt they had a good grasp of patient management skills also felt confident with working interprofessionally as a team in a hospital environment. Those who were most comfortable with the many different roles of hospital staff and other health professionals in managing patient needs had previous opportunity to work as part of a team for instance as a student on clinical placements.

This study has shown that perceptions of the adequacy of undergraduate training equated strongly with estimates of preparedness for work as an intern. What emerged most clearly from the findings was that junior doctors who had spent some of their undergraduate education at a RCS felt more prepared for work as an intern compared to those who had not. These findings are similar to Hill and colleagues²² and suggest that educational experiences in non-traditional undergraduate medical programs such as the RCS programs may be important in easing the transition from student to doctor and in preparing new doctors for their early working life.



These findings are congruent with studies that have confirmed student opinion on the higher quality of undergraduate medical training outside a traditional metropolitan-based program^{10,22,29,30} and their comparable performance against their urban-based peers³¹⁻³³. Studies highlight the increased amount of hands-on experiences, patient contact, procedural skills exposure, and the higher degree of autonomy afforded as a student in a smaller clinical learning environment^{29-31,33}. Likewise student evaluations of non-traditional training experiences consistently report greater feelings of confidence and a greater appreciation for what it takes to work like a doctor and not a student^{10,22,30}.

Further investigation is necessary to understand what it is that smaller non-traditional medical programs such as RCS provide that prepares their graduates to be 'work ready' doctors. Certainly the smaller cohorts inherent in RCSs could be a main contributor to a higher standard of clinical education. Indeed all students expressed anxiety regarding the increase in student numbers as a detriment to teaching time and the effectiveness of their learning. Medical schools might consider the RCS model by dispersing smaller cohorts of students to 'individual clinical schools' focussed around city hospitals. Future work is also necessary to evaluate more closely the intern experience and compare this across regional and metropolitan hospitals. For example "case mix" studies could compare the clinical skills and experiences available and quantify them to help identify gaps in that experience across different hospitals and training locations.

The findings also suggest that more collaboration and coordination between medical schools and teaching hospitals could bridge the gap between student and doctor. This sample of junior doctors called for more hands-on exposure to the responsibilities and expectations they are suddenly faced with on entering internship. This is not a new solution. The dilemma remains how to achieve this teaching intensive solution when the extant teaching resources are already under strain.

Finally, career advice must become a more important part of the education continuum. There appears to be little opportunity to help students and junior doctors make informed career decisions^{16,34}. Unanimous opinion from this sample was that guidance should begin in undergraduate training so that graduates entering the hospital environment are familiar with and not intimidated by the requirements and roles of certain disciplines. The healthcare system cannot afford the potential waste of time, resources or doctors to the workforce because of mistaken career choices.

Limitations

This study is limited by a small sample from one state in Australia. The inherent bias of participant self-selection is also acknowledged.

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