

Factors influencing junior doctor workplace engagement in research: An Australian study

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Introduction: Engaging junior doctors in research can contribute to improved health outcomes, but there is a lack of guidance on how best to support junior doctor research engagement through their workplace experiences. This study aims to identify factors influencing Australian junior doctors' workplace engagement in research and inform recommendations for building research capacity.

Methods: This qualitative interview study, using convenience sampling, explored junior doctors' perceptions and experiences of research engagement. Seventeen junior doctors working at an Australian teaching hospital were interviewed. Data were analysed using the framework method, informed by workplace learning theory.

Results: Junior doctors found it challenging to engage in research activities and attributed this to the lack of a practice-based curriculum to sequence their learning. They described an absence of workplace affordances for research engagement, including time, research-active clinician mentors and accessible projects. Whilst career progression was one motivator for research engagement, a key motivator was engaging in research contributing to patient care.

Conclusions: The findings suggested that absence of practice-based curriculum, mentor guidance and engagement in meaningful research activities hampered research engagement. These findings may inform junior doctor research development programs in acute healthcare organisations.

Keywords: junior doctor; research; workplace learning; residents

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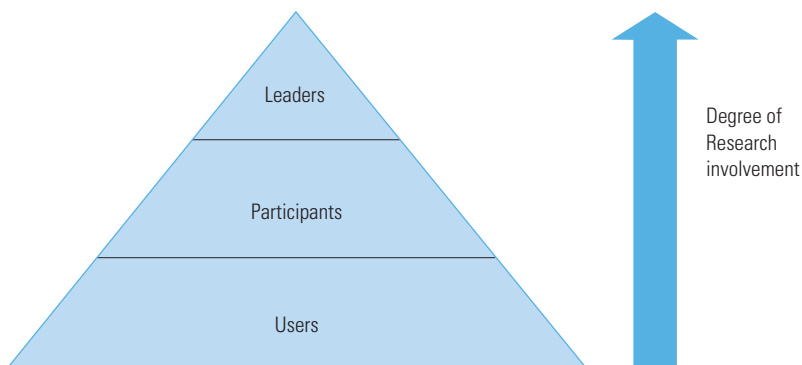
Introduction

Junior doctor engagement in research and scholarship contributes to provision of high quality patient care delivery and advances healthcare practice to improve patient outcomes (Frank et al., 2015; Hanney et al., 2013). For these reasons, international provocational accreditation standards promote junior doctor research engagement (Accreditation Council for Graduate Medical Education, 2017; Frank et al., 2015). In Australia, research engagement is encouraged across the medical professional development continuum from medical school (Medical School Accreditation Committee, 2012) to specialist training (AMC, 2015). However, a gap exists for junior doctor researcher development, that is, between completion of pre-registration medical studies and enrolment in specialist training programs. Whilst accreditation standards for both Australian medical schools (Medical School Accreditation Committee, 2012) and specialist training programs (AMC, 2015) require participation in research activities, junior doctor training standards only require the application of “principles of evidence-based practice and hierarchy of evidence” (Confederation of Postgraduate Medical Education Councils, 2012, p. 2).

It is important to note that different levels of research engagement exist, and these levels are not fixed. Del Mar and Askew (2004) describe three levels of research engagement within Glasziou’s triangle (see Figure 1). The first level, *users of research*, represents clinicians who use research evidence in their clinical practice. The second level, *participants in research*, encompasses those who get involved in research projects sufficiently to earn authorship. The highest level, *leaders in research*, refers to doctors who design, conduct and publish research. Thus, based on the junior doctor training standards, it seems that junior doctors’ engagement and development is likely to be limited to research utilisation rather than active engagement in research (Janssen et al., 2013).

Figure 1

How Junior Doctors’ Value and Experience Research Engagement in the Workplace¹



¹ as described by Del Mar and Askew (2004)

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Because of these external curricular guidelines, an important challenge for junior doctors emerges when they wish to gain entry to specialist training programs and are expected to have already conducted their own, or been involved in, research. Entry to specialty training programs is highly competitive, and research engagement is viewed favourably during selection. For example, the Royal Australasian College of Surgeons awards points for publications and presentations in the selection scoring for surgery training intake (RACS, 2011).

Most studies examining junior doctor research engagement and development have been conducted in the USA or Canada (Ahmad et al., 2013; Hsieh et al., 2014; Rivera et al., 2005; West et al., 2011). They suggest that key barriers to junior doctors' research engagement include lack of time, interest and knowledge (Ahmad et al., 2013; Eze et al., 2012; Noble et al., 2018; Rivera et al., 2005; Takahashi et al., 2009). Other studies have found that structured research-related curricula, mentorship, protected time and provision of courses and information on research significantly increase junior doctor engagement and research productivity (Hsieh et al., 2014; Phillips & Lin, 2010; Rivera et al., 2005; West et al., 2011). When evaluating junior doctor research engagement, research processes tend to privilege research outputs as a measure of engagement. Few studies have examined junior doctors' perspectives or considered the influence of the workplace context (Noble et al., 2018). Moreover, given most studies have been conducted in the USA or Canada, there is limited guidance on how to best support junior doctor research engagement in the Australian context (Kieu et al., 2011; Smoll, 2011).

We sought to explore, from the junior doctors' perspectives, the workplace affordances influencing their engagement in research and to inform recommendations for building their research capacity. Because medical practice is mainly learnt through participation in workplace activities, workplace learning theory (Billett, 2016), which explains how learning occurs through practice, was chosen as a theoretical framework for this study. Moreover, its use offers insights for generating practice-based research engagement strategies (Sheehan, Wilkinson, & Billett, 2005; Sheehan, Wilkinson, & Bowie, 2012). Effective workplace learning is influenced by: i) a practice curriculum—the pathway required for learning to occur, ii) practice pedagogies—activities and practices in place for the individual to learn and iii) personal epistemological perspectives—how the individual chooses to engage based on what they know, can do and value (Billett, 2016).

Methods

Design

This qualitative interview-based intrinsic case study (Stake, 1995), based on a constructionist perspective (Crotty, 1998), examined the factors influencing junior doctors' engagement in research in one workplace setting, a major tertiary hospital. Data were collected using one-on-one, face-to-face, semi-structured interviews to gain an in-depth understanding of the junior doctors' experiences of research engagement, whilst minimising social acceptability bias that might have been magnified in group interviews (Cohen et al., 2007).

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Context

The study was conducted in a major tertiary hospital in Australia with 750 inpatient beds. The institution, relocated in 2013, now designates itself as a “university hospital”, with a stated policy to build a research culture and its research capacity. The hospital employs over 100 junior doctors each year and is one of the largest clinical teaching facilities in Australia (Queensland Health, 2017). This context, that is, large cohort of junior doctors combined with a hospital keen to foster research engagement, thus, offered an excellent opportunity to investigate the perspectives of junior doctors.

Participants

All junior doctors in their second training year or beyond, approximately 100, were invited to participate through face-to-face contact, flyer distribution and email. We continued convenience sampling until thematic saturation was reached, that is, no additional themes emerged (Frambach et al., 2013). Interns (doctors in their first year of practice) were deliberately not sampled because, at the time of the study, they had not had enough clinical experience to have considered research engagement.

Instrument

Our semi-structured interview schedule was based on Koo et al. (2012). Three pilot interviews allowed us to refine our schedule to include additional questions exploring the extent of research involvement, role models, emotional response to research engagement and readiness to engage in research. See Table 1 for the final interview schedule.

Data collection

One-on-one interviews were conducted between June and August 2015. DP conducted, audio-recorded and transcribed all interviews verbatim. The interviews ranged from 19 to 43 minutes in duration.

Data analysis

Data were analysed using a five-phase framework method:

- (1) Familiarisation: DP transcribed all audio recordings verbatim and familiarised herself with the data by reading the interviews multiple times, noting initial ideas. The other team members read through all the transcripts.
- (2) Identifying a thematic framework: A sample of transcripts ($n = 5$) was coded, informed by workplace learning theory (Billett, 2016), *a priori* issues gleaned from other studies (Noble et al., 2018) and recurrent views in the data, and the codes were tabulated and, through discussion, agreed upon by the research team.
- (3) Indexing: DP coded all the transcripts, and these were independently second coded by CN and GDR. The key phrases and sentences were tabulated to demonstrate the main themes for each junior doctor.

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Table 1
Interview Schedule

| |
|--|
| <p>Perception of importance of research and relationship to current role:</p> <ul style="list-style-type: none"> • What is your idea of research and scholarly activities? <ul style="list-style-type: none"> – What about patient audits or evidence-based practice? Do you consider that as research? • As a junior doctor, in what capacity do you get involved with research? How do you feel research relates to your current role and practice? <ul style="list-style-type: none"> – Utilisation, participation, perception of importance. • What do you see happening in practice? What do you observe others doing? Who are your role models? • Is participation in research compatible with how you see yourself as a doctor? Do you identify yourself as a researcher? Why and why not? • To what extent does the notion of engaging in research evoke an emotional response? If so, what? How do these emotional factors facilitate or hinder your engagement in research? • Do you think your views are different to your peers? |
| <p>Past experience in research:</p> <ul style="list-style-type: none"> • Have you been involved in research? What are your experiences? <ul style="list-style-type: none"> – Their background • What do you know about conducting research or evidence-based practice? |
| <p>Factors influencing engagement in research:</p> <ul style="list-style-type: none"> • What do you think about conducting research as a junior doctor? Do you know what you should be doing? In order words, what preparatory steps do you think are needed to engage in research? (individual and organisational) <ul style="list-style-type: none"> – Internal and external capabilities/constraints • Are you currently engaged in any research projects? <ul style="list-style-type: none"> – To what extent do organisational, physical or resource factors facilitate or hinder your engagement in research? Any individual factors? – What is your reason for not engaging in research? Are there competing tasks or time constraints? – (If interested in research) What barriers have you come across? What would help enable you to engage in research? – (If not interested in research) What factors would encourage you to engage in research? What are the barriers? • What do you believe will happen if you do/do not engage in research/scholarly activities? <ul style="list-style-type: none"> – What do you think are the benefits of doing research? |

(4) **Charting and mapping:** Based on the indexing, the coded transcripts were mapped in Excel® to identify the range of phenomena and to find associations between themes. The themes were reviewed by the team and through constant comparison further developed and refined.

(5) **Interpretation:** Through discussion, the research team agreed on the meaning of the themes as presented in the “Findings” section.

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Ethical considerations

Before commencing data collection, we obtained ethical approval from the Gold Coast Health and Griffith University Human Research Ethics Committees (HREC/15/QGC/47). Written consent to participate and record the interviews was gained from all participants. All identifying information was removed from the transcripts. All audio recordings and transcripts were stored securely.

Results

We interviewed all 17 junior medical officers who responded to our invitation to participate in the study. When the last three interviews were analysed, no new themes were identified, confirming achievement of saturation. The characteristics of the participants are outlined in Table 2.

Table 2*Participant Characteristics*

| Post-graduate Year | Male | Female |
|--------------------|------|--------|
| Two | 7 | 7 |
| Three | 2 | 1 |

Based on the framework analysis, three interrelated themes related to junior doctors' perceptions of the factors influencing their engagement in research in the workplace were identified: 1) personal understanding of research engagement, 2) requirement for practice curriculum to augment research engagement and 3) local workplace pedagogic practice opportunities for research engagement.

Personal understanding

Participants who indicated that they had no prior research experience ($n = 6$) believed they lacked the knowledge and skills required to engage in research and, unsurprisingly, were somewhat reluctant to do so. Junior doctors characterised and understood research engagement in several ways, including: 1) excessive workload, 2) importance of research and relevance to the junior doctor role, 3) meaningfulness, 4) benefits and 5) "time jealousy" (Billett, 2015).

Firstly, most participants were reluctant to engage in research whilst in their current roles. This reluctance was formed because they believed research engagement required copious time and energy (Quotes 3.1 and 3.2 from Table 3). When asked how this could be addressed, some participants suggested discussion forums, where inexperienced junior doctors could obtain information about how to engage in research. A few participants were enthusiastic and sought opportunities to engage in research, with others holding mixed views, e.g., their enthusiasm was tempered by the perceived burden of engaging in research. Finally, a few participants described their emotional response as "neutral" and that research engagement was simply a requirement for career progression.

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Secondly, despite most participants viewing research engagement negatively, research was considered to be important to medical practice, as the foundation for evidence-based medicine, which they valued as an enabler to improving and informing medical practice. However, these views conflicted somewhat with the way they described their junior doctor role, i.e., to solely provide patient care (Quotes 3.3 and 3.4 from Table 3). In other words, they were unable to reconcile understandings of “research work” with “clinical work” and, consequently, believed that research was not relevant to their day-to-day tasks of immediate patient care. Being a researcher was not considered to be an integral part of their clinician role. In these ways, the junior doctors were making a distinction between utilisation of and participation in research, with the former being seen as more relevant to the junior doctor role.

Thirdly, a key factor influencing junior doctors’ potential research engagement was whether they saw the research as meaningful, that is, that it had a potential impact on the community or medical practice (Quote 3.5 from Table 3). Despite these stated altruistic goals, most indicated that they would not conduct research if it did not align with personal career goals and enable career advancement. Moreover, engagement with research unrelated to personal career goals was considered unproductive (Quote 3.6 from Table 3).

Fourthly, it was acknowledged that engagement in research was beneficial, as it contributed to new skills development and improvement in clinical practice (Quotes 3.7 and 3.8 from Table 3). Other perceived benefits included networking with other clinicians, gaining professional recognition, contributing to knowledge discovery and improving patient care. In terms of improving employability, participants were divided, but all agreed that research engagement bolstered their curriculum vitae, thus improving the likelihood of acceptance into a specialty training program.

Finally, while some participants ($n = 5$) indicated that they had time outside of work to engage in research, all other participants described difficulties in trading off their limited “personal time” for research engagement. Thus, they were “time jealous” (Billett, 2015) and, consequently, research engagement was not being integrated into their personal time (Quote 3.9 from Table 3).

Practice curriculum

Most participants reported an absence of a learning curriculum or pathway for junior doctor research engagement. Moreover, they suggested that their engagement in usual work activities did not enable them to develop their research capabilities. Several participants noted, however, that their lack of engagement may be attributed to a lack of awareness of existing opportunities (Quote 4.1 from Table 4). Some participants suggested that it was easier to engage in research at medical school and surmised that universities have strong research cultures and, thus, more obvious research learning curricula, making them more conducive to research. Thus, as demonstrated in Quote 4.2 from Table 4, a culture promoting and encouraging research may foster individual interest and engagement.

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Table 3
Quotes Illustrating “Personal Perception of Research Engagement” Theme

| Subtheme | Typical quotes |
|--|---|
| Perception of research | <p>3.1 “Because I have it in my mind that I don’t like research that much, it does put up a barrier between myself and research . . . In my mind, it just feels like a big task, time-consuming, with a lot of work” (Participant 4).</p> <p>3.2 “I feel nothing towards research. I mean that’s it. I, uh, might even veer towards hate. So, I really do not like doing research” (Participant 6).</p> |
| Perceived importance of research relevance to junior doctor role | <p>3.3 “It should apply to our day-to-day practice because everything we learn in medical school [is] like grounded in evidence-based. A lot of our management is also supposed to be backed up by an evidence base. So yeah, it should be affecting the daily practice and management of patients” (Participant 9).</p> <p>3.4 “I don’t feel like research relates to my current day-to-day practice. I think I see it more like an out-of-hours activity or endeavour” (Participant 1).</p> |
| Desire to participate in research that is meaningful | <p>3.5 “If it was something that to me wouldn’t be noticed or wouldn’t make much of an impact in society, then I probably wouldn’t be interested. But if it is something that is going to change something dramatically, I guess, visibly you can see the impact it has on either society or statistics on the outcomes of particular treatments or something like that, that’s probably what I’d be interested in” (Participant 1).</p> |
| Desire to participate in research aligned with career interest | <p>3.6 “If say I want to do cardiology, do research in that, but I end up doing ED or something like that . . . I don’t think it’s relevant, if you’re doing research on something that’s not relevant to what you’re doing in the future” (Participant 8).</p> |
| Benefits of research engagement | <p>3.7 “All those skills that are required to do research, they are good skills to have, like they are good skills to gain. And I don’t think you can get it in any which other way because it’s very specific to research, like finding the relevant information, knowing how to organise everything, interpreting” (Participant 14).</p> <p>3.8 “The benefit of research is ideally you improve practice. So improve patient outcomes, that’s the ultimate goal I would have thought. To either improve practice or decrease negative outcomes” (Participant 10).</p> |
| Time jealousy (Billett, 2011, 2015) | <p>3.9 “The one thing that can’t stop is my commitment to other things, like with my practice, with my professional life or with my family life. If I am too engaged with those things, maybe that can hamper my engagement in the research field, but . . . otherwise, if I can manage with everything, I am very keen to get engaged with the research” (Participant 13).</p> |

Table 4
Quotes Illustrating the “(Lack of) Practice Curriculum” Theme

| Subtheme | Quotes |
|--|---|
| No clear pathway for junior doctor research engagement | <p>4.1 “Another difficulty with [research] is, I guess, knowing the availability of what’s out there or what projects are out there or what to do or how to get started with one. It’s something we don’t really see much of” (Participant 7).</p> |
| No clear curriculum like in university | <p>4.2 “Because you’re in that environment and you’re always learning. And you have different commitments. So, I was really keen to get involved with research at uni, but now it’s a lot harder to find time. I think the culture [encouraged me]” (Participant 16).</p> |

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Local workplace pedagogic practice opportunities to engage in research

As well as a reported lack of a learning curriculum, most participants reported lacking workplace pedagogic practice opportunities for research engagement. However, they readily identified pedagogic practices that might enhance their engagement, including: 1) quality research engagement invitations, 2) mentor guidance, 3) organisational expectations of junior doctors, 4) human and financial resources, 5) role models and 6) workplace research visibility.

Firstly, whilst a few participants reported lacking invitations to engage in research, some stated that subtle invitations had been extended through email, flyers and during meetings or presentations. However, these invitations were not taken up because the participants lacked time or interest. Only one participant surmised that these subtle invitations were sufficient, believing that junior doctors should take responsibility for seeking these opportunities. Most participants believed that they would be more likely to engage in research if they were directly invited (Quote 5.1 from Table 5), with some preferring a direct personal invitation from senior staff. For others, an indirect invitation, such as accessing a list from a website or application tool, email or seminar, was thought appropriate. In these ways, there were differences in invitational quality thresholds for research engagement among individual junior doctors.

Secondly, all participants described a lack of research guidance and stated that they would value research mentor support (Quote 5.2 from Table 5) to provide research supervision, guidance and encouragement. They suggested the following attributes for research mentors: 1) expertise in developing and managing a mentorship relationship, 2) similar medical interests (e.g., speciality) and 3) research experience.

Thirdly, most participants suggested that they were expected by their employer to engage in research outside of paid work hours. Most believed that the main purpose of their employment was to provide clinical services (Quote 5.3 from Table 5), and some believed that this was reinforced by their training assessment form, in which research engagement is not an explicit requirement (AMC, 2014).

Fourthly, participants made the following suggestions for resources to enhance research engagement: 1) education program and 2) human and financial resources (Quote 5.4 from Table 5). Whilst the hospital provided a 12-week research training program, only three participants reported being aware this program, and one participant explained that clinical workload prevented them from attending it. In terms of human and financial resources, provision of clinical cover was seen as promoting engagement. Most participants stated that protected time would also facilitate their research engagement.

Fifthly, most participants indicated that research conducted by their role models, such as peers and senior doctors, was not always visible (Quote 5.5 from Table 5). This lack of visibility influenced the perceived availability of opportunities to engage. Moreover, it contributed to the impression that research engagement is unnecessary to be an effective doctor. This suggests that variation in the ways in which senior doctors engage in research effaces a consistent representation on which junior doctors might

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model their researcher identity. Those participants who expressed strong interest in research actively sought opportunities to engage and were more “privy” to research opportunities. However, a few participants described a lack of openness about ongoing research projects and that increasing visibility would encourage their engagement in research (Quote 5.6 from Table 5).

Table 5

Quotes Illustrating the “Local Workplace Pedagogic Practice Opportunities to Engage in Research” Theme

| Subtheme | Quote |
|---|---|
| Invitational quality | 5.1 “I haven’t really taken much initiative to get involved with research, and people don’t just approach you to be involved in research either. It’s something that you have to go out and look for ... but to make it more open, I guess you could have like email sent out saying ... ‘this needs people to be involved in this research project’” (Participant 11). |
| Mentor guidance | 5.2 “I think to do something like a research project on your own would be very difficult ... It’s important to have somebody who’s encouraging and supportive as a good supervisor and would motivate you to complete what you set out to do” (Participant 16). |
| Organisational expectations of junior doctors | 5.3 “There’s also not a lot of support in terms of time management in engaging in research ... It’s sort of something you got to do in your own time as a way of impressing superiors. And it’s hard to make time because most of our time is filled” (Participant 2). |
| Human and financial resources | 5.4 “You’re doing inside work hours and, you know, doing it as part of your job, but you just have to be in an environment where it’s fully supported and that fact that you—let’s say you’re one of two junior doctors on a junior doctor team for a full team—you have to make sure it isn’t impacting your fellow coworkers” (Participant 7). |
| Role models | 5.5 “There are a lot of doctors in the hospital that I respect and admire that don’t research actively, or at least I don’t think that they do research actively. I don’t think it’s a necessity from my point of view” (Participant 5). |
| Workplace research visibility | 5.6 “There’s not a lot of dialogue about research to be honest. Maybe getting junior doctors to present what they’ve done, what kind of research they have done, so that other junior doctors can have an idea of people they can approach easily, that kind of thing” (Participant 11). |

Discussion

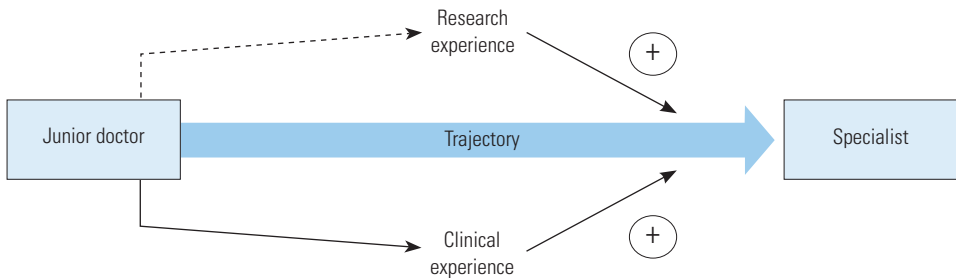
Our study explored, from the junior doctors’ perspectives, the workplace affordance influencing their engagement in research in the workplace and emphasises that research engagement is challenging. Our findings begin to explain the nature of the challenge, which can be attributed to a complex interplay between junior doctors’ personal understandings of research engagement and an absence of an obvious workplace research learning curriculum combined with a lack of local accessible pedagogic practice enabling research capability development. These findings are important, as there is limited research investigating barriers and facilitators to Australian junior doctor research engagement (Kieu et al., 2011; Noble et al., 2018). Moreover, our research illuminates how junior doctors value and experience research engagement in

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the workplace. These findings may contribute to programs to support junior doctors to balance clinical skills development with research capacity building (see Figure 2).

Figure 2

How Junior Doctors' Value and Experience Research Engagement in the Workplace



There is international consensus that structured research-related curricula significantly increase junior doctor engagement and research productivity (Noble et al., 2018). However, our findings extend this understanding and suggest workplace strategies to promote junior doctor research engagement, including: 1) sharing completed research projects, 2) providing protected time, 3) designing a learning curriculum, 4) enabling research mentor guidance, 5) integrating research into clinical practice early, 6) developing and aligning research programs to junior doctors' personal goals and 7) offering access to available research projects. These strategies are discussed in detail below.

Addressing the anxiety and negative perceptions associated with research engagement experienced by our participants, and others (Ledford et al., 2013), is essential for encouraging engagement. Sharing findings and examples of research work completed by senior and junior doctors at "grand rounds" or "showcasing" events may assist in promoting understandings about expectations, goals and outcomes of research engagement (Lave & Wenger, 1991), whilst promoting the message that successful research engagement is achievable.

Our findings confirm that a barrier to research engagement is lack of time (Ahmad et al., 2013; Eze et al., 2012; Rivera et al., 2005; Takahashi et al., 2009), but addressing this barrier, from the junior doctor perspective, is complex. For example, because the health service involved in this study had not created time for research engagement during work hours, research engagement became an after-hours activity, with most participants, thus, choosing to not engage. Yet, a tension was created, in that they were having to balance career progression with personal activities. Given that junior doctors are at high risk of burnout (Campbell et al., 2009; Markwell & Wainer, 2009), combined with the challenges participants experienced in attempting to integrate research into their day-to-day practice, our findings suggest that an organisational imperative exists to support research engagement through the provision of protected time (Lemaire & Wallace,

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2017). Indeed, the provision of protected time to support research engagement has been identified as an effective strategy for allied health professionals (Wenke et al., 2018).

Our participants indicated that the workplace was not affording a research learning curriculum, thus they found it challenging to relate research engagement to day-to-day practice. To address this, firstly, an explicit residency research curriculum, which sequences research learning activities and addresses their lack of research knowledge, could help junior doctors develop their research capacity (Noble et al., 2018). For example, seminars on the principles of research design combined with strategies on how to write a research proposal, followed by a feedback session on the junior doctors' practice proposals, may support future research protocol development. Secondly, another approach for supporting junior doctor research engagement would be to foster their role as participants in research rather than leaders of research (Del Mar & Askew, 2004). For example, participating in research projects in parallel with clinical practice, over longer timeframes (e.g., 2 to 3 years) and as part of team-based projects led by expert researchers, could support meaningful research engagement. Moreover, researcher development could be fostered through participation in the usual steps of research, e.g., ethics applications, data collection and analysis and dissemination.

All participants emphasised the importance of an expert mentor as a facilitator of research engagement, in agreement with other studies (Noble et al., 2018). However, our findings emphasise the importance of having research mentors from clinical specialities junior doctors are interested in pursuing. With the well-recognised shortage of Australian clinician-scientists (Traill et al., 2016), there would be value in engaging research experts from other professions, i.e., adopt an interprofessional approach. No formal research mentoring program exists in our health service. These findings would aid in the establishment of a program matching junior doctors' research and career interests with an experienced clinician-researcher from a relevant speciality.

As well as aligning research mentors with career goals, participants emphasised the importance of engaging in meaningful and clinically-relevant research, which is consistent with the literature (Noble et al., 2018). However, this was challenging for participants if they had not chosen their career speciality path. To address this challenge, the integration of research into clinical practice could be introduced during medical school to assist junior doctors' early understanding of the clinical relevance of research (Ommering & Dekker, 2017). Secondly, a research engagement program, beginning in medical school, could be developed to determine their career goals and specifically link them with research aligned with these goals (Noble et al., 2018).

Finally, our findings suggest that research readiness alone is not enough to promote effective research engagement, especially when there is difficulty accessing information regarding ongoing research projects. To address this, a platform, e.g., an online portal enabling junior doctor access to information regarding ongoing research projects, would assist junior doctors to connect with clinician-researchers involved in projects aligned with their interests. Another approach would be to hold research networking

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evenings for junior doctors and research-active clinicians to promote discussion and share research opportunities.

Strengths and limitations

Whilst this was a single institution study, the transferability of our findings have been enhanced by providing “thick descriptions” (Frambach et al., 2013) and, thus, enabling rich insights to junior doctors’ perspectives of research engagement, of which there is a paucity in the literature (Noble et al., 2018). Our findings were based on self-report, which is essential for a study of individual perceptions, however they may have been hampered by recall accuracy. Finally, to promote candid discussions, we aimed to minimise issues of power (Zerbe & Paulhus, 1987) by utilising the first author, then a penultimate-year medical student, as the interviewer, rather than a senior practitioner.

In summary, this qualitative study explores the factors influencing research engagement from an Australian junior doctor perspective. The three main factors identified were: i) personal understanding of research engagement, ii) local workplace pedagogic practice opportunities and iii) the absence of a practice curriculum. The interplay between these three main factors must be considered to augment research engagement among junior doctors in the workplace setting. Further research, such as surveying a larger number of junior doctors at different health services across Australia, might determine whether these findings can be generalised to Australian junior doctors more broadly. There is also opportunity to study the implementation of a research program at a health service and evaluate its effectiveness in promoting research engagement among junior doctors.

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