Jumping in: Research skills development in general practice training, and incentives, barriers and enablers for novice GP researcher journeys

Nancy Sturman, Amelia Woods, Georgia Franklin, Sophie Vasiliadis, Lyndon Walker, Beth Turnbull

Background and objective
The aim of this study was to understand novice Australian general practitioner (GP) researcher career pathways, and the training sector's recommendations for developing general practice registrar research knowledge and skills.

Method
The study comprised semi-structured focus groups and interviews via Zoom in 2022, with purposively sampled medical educators, research staff, GP academics and The Royal Australian College of General Practitioners registrars and recent Fellows (29 participants).

Results
Intellectual challenge, passion for improving patient care, and a desire to complement patient-facing work with related activities drove research engagement. Financial and family commitments were often barriers to progressing research higher degrees and academic pathways. The clinical focus, limited flexibility and short duration of general practice training programs limited research engagement, except for the Academic Post Program. Opportunities to progress novice GP academic and/or researcher pathways, outside teaching and education research, are poorly signposted.

Discussion
The Academic Post Program received strong support. Additional, flexible mechanisms are needed Australia-wide for progressing novice researcher pathways throughout general practice training and after Fellowship.

CLINICAL RESEARCH is widely believed to improve patient healthcare. Most research informing clinical guidelines for general practice, however, is currently conducted in hospitals or other settings outside general practice[1–3] and may not be directly transferable to general practice care. This underscores the importance of research in, with and for general practice. It has been widely argued that general practitioner (GP) researchers who combine clinical practice and research are crucial to designing, delivering and implementing high-quality general practice–based research.[1,2,4] However, there is currently a shortage of GP researchers, both in Australia and elsewhere.[1,2,4–6] It is therefore important to understand drivers, challenges and enablers for GP research careers to identify opportunities to promote and support these careers.

Research to date has identified the importance of research mentors, role models and networks in enabling GP research careers.[1,3,7,8] Barriers include the additional training and financial commitments required[4,9] and relatively poor remuneration. Perceptions that GP careers lack academic opportunities,[5] that academic general practice is poorly regarded in both academic and clinical circles[1,5] and that funding bodies favour single disease–focused research with a narrow methodological scope (rather than the broader biopsychosocial, multimorbidity and transdisciplinary focus of much general practice[1,2,6]) also play a part.

However, research to date has tended to present the perspectives of early- (PhD qualified), mid- or late-career GP researchers rather than those of novice GP researchers, including general practice trainees. The aim of this research was to understand the training sector's recommendations for developing general practice registrar research knowledge and skills, and novice Australian GP researcher and/or academic career pathways.

Methods

We undertook our research in 2022 as the delivery of The Royal Australian College of General Practitioners (RACGP) specialist training transitioned from nine regional training organisations (RTOs) back to the national College.

The delivery of general practice training includes the recruitment and support of training general practices in which general practice trainees (known as registrars) work and learn under supervision, and small group educational sessions delivered by local medical educators. Invitations to participate in the study were emailed to RTO medical educators and research staff, university-based GP academics, and RACGP registrars and recent Fellows who had applied for an Academic Post in 2020 or 2021 (a 12-month 0.5 full-time equivalent secondment to a university department of general practice, rural clinical school or equivalent, to develop the registrar's research and teaching skills).

Recruitment of participants was purposive to provide rich personal experiences and perspectives of early engagement with GP research and/or supporting novice general practice registrar researchers. Recruitment and analysis continued throughout data collection. Focus groups and interviews were semi-structured, facilitated by GF, SV, AW and/or NS via Zoom, video recorded and professionally transcribed. No transcripts were returned to participants, no field notes or repeat interviews were taken, and no further feedback was sought. Participants were offered a $120 gift card honorarium.

Data analysis followed the four stages of thematic analysis described by Green et al.[10] Three authors (GF, BT and NS) immersed themselves in the data by reviewing video recordings and/or reading all transcripts, and BT reviewed transcripts against recordings to check for accuracy. BT and GF jointly inductively coded five transcripts, discussing and agreeing on descriptive labels for transcript segments. BT coded all transcripts in nVivo, recoding and relabelling previous codes when appropriate as coding progressed and saturation was approached, and grouping codes into categories of linked meaning. These categories and overarching content themes were iteratively discussed and refined with all authors over 10 online Zoom meetings between 2023 and 2025.

The research team (five female, one male [LW]) consisted of an experienced GP academic employed by the RACGP to advise on the Academic Post Program (NS, PhD), a recent RACGP Fellow undertaking a PhD following their Academic Post (AW, MAddBeh), a novice researcher employed by the RACGP to administer the Academic Post Program (GF, MPH), and three experienced researchers with minimal prior exposure to general practice training (BT, LW and SV, all PhD). BT's familiarity with multi-level power relations theories and job quality models that identify interacting demands, resources and rewards[11] informed the analysis. Ethics approval was granted by the RACGP NREEC, project: 22–133.

Results

Twenty-nine participants were purposively recruited after inviting all individuals who registered interest in participation (refer to Tables 1 and 2). Nine focus groups (2–7 participants) and seven individual interviews were conducted, duration 25–85 minutes (mean 57 minutes). Several participants knew the GP researchers (NS and AW) and/or GF through informal GP networks and NS and GF's RACGP roles, but there were no formal employer or supervisory relationships between the research team and participants. No non-participants were present.

We report findings under three thematic headings: multi-level contexts of GP research engagement; research exposure and teaching in general practice training; and progressing novice GP researcher trajectories. Illustrative participant quotations are attributed by codes indicating participant category (R [previous general practice registrar], APR [previous Academic Post registrar], RTO [previous or current RTO medical educator], GPA [GP academic]) and number. Figure 1 presents an overarching model of novice GP researcher journeys, in which temporal, financial, geographic and intrinsic factors interact at micro (individual), meso (organisational/community) and/or macro (national/societal) levels.

Multi-level contexts of GP research engagement

At the micro level, individuals' intrinsic interests, aptitudes, motivations and values drove them towards a research career. Participants were attracted to the intellectually challenging, collaborative and impactful nature of research. Some had particular areas of research interest, and several commented that research interests complemented and sustained their clinical work. Many participants described GP researcher role models, advocates, supervisors and communities of practice as having a profound influence on their personal GP research careers. One overseas-trained doctor described an inspirational experience prior to general practice training when they 'saw the benefit, the beauty of the research' working on a World Health Organization–funded tuberculosis vaccination project.

Life circumstances influenced individuals' ability to pursue research careers: general practice registrars were often older than the typical university graduate embarking on a research career, with more caring responsibilities, health and wellbeing issues, financial commitments and geographic displacement affecting their ability to meet the financial, temporal and geographic demands of GP research careers.

> *There's the time of life thing. Most of our registrars are young adults, starting families, getting mortgages, trying to establish themselves in professional practice … so many professional and personal responsibilities.* (RTO9)

Table 1. Data collection and quotation designations

Participant category	n (%)	Format	Designation
Previous Academic Post registrar	10 (36)	3 focus groups, 1 interview	APR#
Unsuccessful Academic Post applicants	3 (11)	3 interviews	R#
RTO medical educators or research staff	10 (32)	4 focus groups, 3 interviews	RTO#
GP academics	6 (21)	2 focus groups	GPA#
Total	29 (100)		

GP, general practitioner; RTO, regional training organisation.

Table 2. Participant demographics (n = 29)

Participant category	n	%
Previous Academic Post registrar[A]	10	34.5
Unsuccessful Academic Post applicant	3	10.3
RTO employee	10	34.5
GP academic	6	20.7
Sex		
Female	16	55.2
Male	13	44.8
Age range (years)[B]		
18–30	2	7.4
31–40	9	33.3
41–50	9	33.3
≥51	7	24.1
State/territory		
New South Wales	9	31.0
Northern Territory	2	6.9
Queensland	3	10.3
South Australia	6	20.7
Tasmania	2	6.9
Victoria	7	24.1
Country of primary medical degree[C]		
Australia	11	84.6
Overseas	2	15.4
Highest research qualification		
None	10	34.5
Masters	7	24.1
PhD	12	41.4

[A] Participants recruited as GP academics may also have been previous Academic Post registrars but are not included in this count.
[B] Information missing from two participants.
[C] Information sought only from previous or current general practice registrars.
GP, general practitioner; RTO, regional training organisation.

At the meso level, the crowded, pressured, clinically focused and assessment-driven nature of both medicine and general practice training programs were perceived to hinder the incorporation of adequate research exposure, training and engagement.

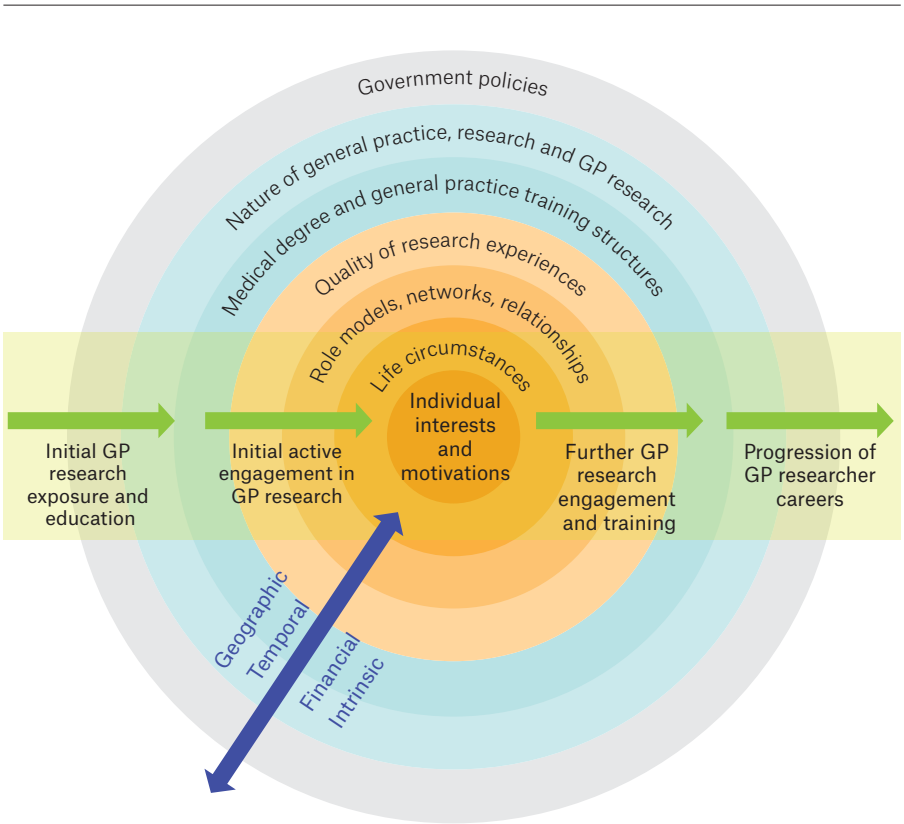

Figure 1. General practitioner (GP) researcher career journeys.
Green arrows: four stages of novice GP researcher career trajectories. Concentric circles: micro- (orange), meso- (blue) and macro-level (grey) contexts influencing GP researcher career journeys. Double-ended blue arrow: facilitators/barriers for a GP researcher career produced by nuanced interactions between multi-level contexts.

> *There's just so much for medical students and GP trainees to learn, and how much can you jam into that … there is a limit to how much you can absorb.* (RTO9)

Several aspects of clinical general practice were mentioned as barriers to research activity, including limited exposure to role models and research cultures, 'fee-for-service'–based incomes, and 'draining' and 'unsustainable' clinical workloads – although the latter could also drive GPs to explore other potential interests that complemented their clinical work.

> *There's a lot that I enjoy about general practice, but there's also a lot that I find somewhat draining about it … So the opportunity to have some variety in my week and to have some non-clinical research time and furthering my skills in a different capacity, held a lot of appeal.* (R2)

Several participants described the insecurity of academic positions and the low academic incomes when compared with clinical work as further disincentives.

> *The nature of research is that nothing is guaranteed … Whereas I could just rock up to my clinic and see 30 patients and that's guaranteed.* (R3)

Participants perceived that aspects of general practice–based research in particular (as distinct from hospital-based or other research) contributed to further barriers. These included 'stereotypes' about GP research as less important, relevant or valuable; the diversity and complexity of general practice research questions and methods; inadequate funding for GP research; variable capacity for research, and variable commitment to research supervision and support, within medical schools and general

practice training environments; and limited research activity in general practice clinics.

> *When you work in the hospital … you are linked in with journal clubs, with grand rounds, with team meetings … conferences … whereas in GP, you have to work to make that happen.* (APR10)

The challenges of recruiting patients in general practice were also compared unfavourably with the 'captive audience' in hospital beds 'waiting for you to talk to them'. Clinical workloads, concerns about practice viability, and the need to undertake research activities outside remunerated clinical and teaching work were emphasised by several participants.

> *The majority of GPs are about service delivery and trying to keep the business afloat … The practices I trained at were co-owned by a number of GP partners and none of them had time to do research. They were just busy doing the work.* (APR8)

At the macro level, government policies and funding affected these micro-level and meso-level influences.

Research exposure and teaching in general practice training

Participants believed that exposures to general practice–based research and GP researcher role models were essential in countering limited, hospital-centric conceptions of medical research methods and scope. Several participants believed that general practice training was the ideal stage for 'capturing registrars while they're open-minded and receptive' to a potential GP research career, although others commented that research pathways could become newly appealing to more financially stable and clinically confident GPs later in their careers. There was consensus across participants that training in an additional skillset was needed to pursue research and/or academic careers.

Educational activities offered during general practice training including the following: didactic presentations and/or online modules focusing on evidence-based medicine, epidemiology and research methods; journal clubs; clinical audits; and inclusion of motivated registrars in existing research projects. Recommended educational approaches included 'pitching (content) at the right level' and providing active learning opportunities in areas of registrar interest; dismantling misperceptions and ignorance about research generally and GP research specifically; establishing the value and relevance of research to clinical practice; focusing on timely, interesting, controversial and clinical research questions, findings and impacts; and showcasing GP research careers. Mandated research projects were dismissed as likely to produce low-value research and registrar resentment. Participants recommended that people with 'combined clinical and academic hats' who were both 'engaged and on the ground' and 'interested in research' deliver research education and training to reduce the risk of registrars assuming that 'academia is somehow not grounded in reality' and 'switching off' from the content. One medical educator commented that the typical 'lived experience on the ground' (registrars', supervisors' and medical educators' attitudes to research) was of 'this elitist thing that happens in white towers far removed from day-to-day practice'.

Several participants contrasted active engagement in research with more passive, 'dry' research training.

> *Jumping in and doing it, rather than learning it. Learning research is pretty dry, really. It's like dry crackers … Embellish it with having a great mentor, having a really interesting topic, being in a department where you're challenged academically, where there's lots of thoughts and ideas … That's the cement that binds it all together.* (APR3)

Positive early GP research experiences could involve either joining an established research team or leading a project in an area of specific personal interest:

> *Some people are happy to do* (any) *project, some people want a very self-driven project. And both are okay in academia.* (GPA4)

The most salient research opportunity during general practice training was the RACGP Academic Post, which multiple academic participants commented had launched their academic careers and been 'that stepping stone to do general practice research'.

Many participants across the training sector emphasised the importance and value of these posts.

However, two participants described experiences of inadequate supervision, and some others reported that exposure to the realities and conflicting demands of academic life, while valuable, had reduced their enthusiasm for an academic career. Participants also emphasised the importance of signposting and supporting other pathways for engagement in GP research, noting that some registrars who were interested in further engagement may have been ineligible, unable to commit to a post during the application period or unsuccessful for an Academic Post.

Other early opportunities arose through registrars volunteering in university research teams or universities directly engaging registrars, although many registrars and recent Fellows could not afford to take on additional unfunded research work and responsibilities. Some RTOs reported including registrars, medical educators and/or GP supervisors in research funded through the Education Research Grant program,[12] which aims to build education research collaborations between academic general practice and general practice training. Several participants noted that general practice training had become less flexible over time, with reduced funding for out-of-practice training, reducing the capacity of RTOs to provide research training and facilitate other research opportunities during training.

Progressing novice GP researcher trajectories

Opportunities to progress novice GP researcher journeys, while believed to be essential, were often challenging to identify and/or offer, especially outside metropolitan centres. Although online technologies enabled some remote supervision, teaching and/or clinical work, participants observed that remote research supervision was suitable only for 'driven, mature, organised' individuals, and that 'sitting with' an in-person research community was very valuable for novice researchers. Even for individuals living near tertiary centres, universities in different regions had varying capacity for supporting research projects,

including varying size of departments of general practice, GP academic supervisor availability, supervisor expertise in novice researchers' areas of interest, university facilities and resources, and processes for finding academic opportunities. Universities were sometimes able to offer recent Academic Post registrars subsequent employment as tutors or lecturers, maintaining some connection to research environments.

> *Sometimes the* (university) *department think they're terrific and somehow keep them on … but it seems like the main way the departments can afford to do that is to give them mainly teaching roles … The College has already invested with people giving them their AP* (Academic Post)*, could there be some further funding … to help the department keep them on?* (RTO1)

Many participants considered a doctoral degree to be essential to progressing early GP researcher pathways, although others emphasised the importance of providing alternative pathways.

> *It's not just about doing a PhD, there's other ways that you can be embedded in research … Even though it's great to develop pathways for GPs to do PhDs, it's also important to develop the other pathways for people to remain actively involved in research.* (APR1)

Undertaking master's and doctoral degrees during or soon after general practice training presented major challenges for early-career GPs, even for those without major personal, training and/or clinical commitments.

> *The finances are brutal … I don't own a house, I don't have kids, I don't have any real financial obligations. But I can't even afford to pay rent on a PhD salary, working part time as a GP.* (APR3)

The 'return on investment' for a PhD was also questioned.

> *You look at the slog you have to go through and the lost income doing a higher research degree. It's a pretty significant hit to take, and what's the return on investment? Academic jobs are hard to come by.* (APR2)

A few participants had secured employment with a research component in universities or state health facilities.

> *I'm employed … as a staff specialist … I can do research as part of my job, without having to do the hard slog and do a research degree … there's all this extra funding for research and professional development … which you don't get in general practice.* (APR2)

Some RTOs offered involvement in training program evaluations, research projects including those funded by RACGP Education Research Grants (ERGs), and professional development and training opportunities to maintain engagement and connection with research.

> *We've been able to keep* (previous general practice registrar) *engaged through different ERG-funded projects and our research community through workshops and bits and pieces.* (RTO7)

However, the lack of funded research and professional development opportunities in clinical general practice settings, compared with hospital settings, was considered a major barrier to ongoing GP research careers. One Academic Post alumnus focus group agreed that research 'with real clinical impact' was likely to 'be costly and need a lot of time and people', and hence largely out of reach. Many participants were also keenly aware of the insecurity and low remuneration for academic compared with clinical work, including those with caring responsibilities or health concerns who needed to maximise income from part-time work. Several suggested that they were 'steering away from (research) at the moment, maybe to go back later … later on in life' (R4).

The RACGP Foundation grants (providing small to medium grants for GPs and general practice registrars) were mentioned once but noted to be very competitive, and one general practice registrar described research life as 'just applying for grant after grant and getting knocked back'. Participants acknowledged that most potential GP researchers would not find an attractive pathway for ongoing engagement.

> *What is the pathway afterwards? There aren't that many jobs available … so most people we expect to not end up in a position where they can continue with their research unless they want to do it in that quasi-land where they do it like a hobby, while they're doing clinical work.* (GPA2)

Discussion

Value alignment, intellectual challenge and supportive role models are micro-level attractants and enablers for novice research careers. On the other hand, crowded and clinically focused curricula, heavy clinical workloads with financial viability pressures and adverse life circumstances all act as disincentives. Findings align with previous literature and with four of the six dimensions of job quality theory:[13] pay and other rewards, intrinsic work characteristics, terms of employment, and work–life balance (the remaining two dimensions [health and safety, and representation and voice] were less evident). Some challenges reflect the uncertainty, happenstance and dynamic complexity of contemporary career decisions in general.[14,15] Many other Australian medical specialty trainees also report challenges undertaking research concurrently with work, personal and other training requirements.[16] However, our findings suggest that the financial and personal challenges of novice researcher careers are particularly salient for Australian GP researchers, perhaps especially for those who are located at a distance from sizeable university departments of general practice, and that general practice–based research faces particular challenges.

Our participants were rich informants, purposively selected for their interest and experience in general practice research and/or GP research training, and no participant questioned the value of research per se. The views of other GPs and medical educators, including those with little research interest or experience and those trained overseas or through the Australian College of Rural and Remote Medicine (which trains approximately 10% of Australian GPs and rural generalists), may differ from those presented. International differences in funding and support for GP research training, including PhD scholarships and supervision, limit the international applicability of our findings. We have not investigated issues of gender, parent status and class, which are

salient in many career decisions.[17] Age as an issue was present in our data and warrants further exploration.

Findings highlight the importance of the Academic Post Program in offering positive early exposures to general practice research and GP researchers during general practice training. Further research would be useful to identify longer-term outcomes of this program. Difficulties identifying attractive subsequent pathways for research training and engagement, with the exception of education research, were highlighted. The recent expansions of the RACGP's Australian General Practice Research Foundation grants and Practice-Based Research Networks are likely to be welcome steps in this direction. Findings also reinforce the importance of identifying and piloting new strategies for supporting general practice–based research, including in training practices that supervise general practice registrars.

Mechanisms for progressing novice GP researcher pathways and/or higher research degrees should be well signposted, supported Australia-wide and flexible throughout general practice training and after Fellowship.

Authors

Nancy Sturman PhD, MBChB, FRACGP, BA, Associate Professor, General Practice Clinical Unit, Medical School, The University of Queensland, Brisbane, Qld

Amelia Woods MBBS, The University of Adelaide, Adelaide, SA

Georgia Franklin BSc, MPH, Academic Post Program Lead, The Royal Australian College of General Practitioners (RACGP), Melbourne, Victoria

Sophie Vasiliadis PhD, BSc Psych (Hons), Senior Research Officer, Murdoch Children's Research Institute, Melbourne, Victoria

Lyndon Walker PhD, BSc, Senior Education Researcher, RACGP, Melbourne, Victoria

Beth Turnbull PhD, BPHBP, BA/LLB, Senior Researcher, RACGP, Melbourne, Victoria

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Correspondence to:
n.sturman1@uq.edu.au

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