



BMJ Open Australian general practice registrars' experiences of training, well-being and support during the COVID-19 pandemic: a qualitative study

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ABSTRACT

Objectives Providing well-supported general practice (GP) training is fundamental to strengthen the primary health workforce. Research into the unique needs of GP registrars during disasters is limited. Registrar burnout and insufficient support have been associated with personal and professional detrimental effects. This study aims to explore the experiences of Australian GP registrars with learning, well-being and support from their training organisation during the COVID-19 pandemic, and to guide training organisation efforts to support registrars through future disasters.

Setting Interviews were conducted via Zoom.

Participants Fifteen GP registrars from South Australia, Victoria and New South Wales who had experienced community-based GP training in both 2019 (prepandemic) and 2020 (early pandemic).

Outcome measures Training, well-being and support experiences were explored. Interviews were recorded and transcribed and themes analysed.

Results Diverse experiences were reported: changes included telehealth, online tutorials, delayed examinations and social restrictions. Social and professional connections strongly influenced experiences. Personal and training factors were also important. Additional GP training organisation support was minimally needed when strong connections were in place.

Conclusions This study identifies aspects of support which shaped registrars' diverse experiences of COVID-19, particularly regarding professional and social connections. Findings illustrate the importance of broad principles around supporting registrar well-being. Particularly significant aspects of support include connection to educational mentors such as supervisors and medical educators; connection and culture within practices; opportunities to share clinical experiences; and connection to personal social supports. Participation in this global disaster contributed to registrars' developing professionalism. GP training organisations are positioned to implement monitoring and supports for registrars through disasters. Although registrars may not require significant GP training organisation intervention where powerful professional and personal connections exist, strong foundational GP training organisation supports can be established and augmented to support registrars in need before and during future disasters. These findings contribute to the global developing field

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ Strengths included use of purposive sampling across multiple general practice (GP) training programmes from states with varying COVID-19 prevalence, as well as sampling from a wide range of geographical locations and personal and practice contexts.
- ⇒ The research team provided beneficial informed insider positions from registrar and GP training programme perspectives.
- ⇒ Limitations include a relatively cross-sectional, early representation of the evolving COVID-19 pandemic.
- ⇒ Junior GP registrars were not included, and some experiences were difficult to distinguish from natural progression through GP training.
- ⇒ Project findings may not be directly applicable to differing challenges arising in future disasters.

of knowledge of registrar training and well-being needs during crises.

INTRODUCTION

Doctors who work in primary care provide a valuable front-line health service to the community, caring for patients who present with new illness, providing comprehensive surveillance and preventative care and managing the flow of patients to appropriate specialist care. In times of natural disaster, these responsibilities can significantly increase the complexity and satisfaction of general practice (GP); however, these events can put added pressure on the primary care system and individual doctors. At a time when Australia is having difficulty attracting registrars into GP training, and natural disasters are occurring more frequently, training organisations need to consider the education and well-being support offered to GP registrars.

Primary care training programmes are critically important in the development of a robust primary care workforce. Postgraduate medical trainees, including GP registrars,

face professional, educational and personal demands during training, and experience a high baseline burden of psychological distress and burnout.^{1–5} In the Australian setting prior to COVID-19, GP registrars have reported stressors including: isolation; limited employment flexibility; training changes and uncertainty; teaching problems; and challenging work conditions.² Inadequate support during training may contribute to burnout, which is associated with significant consequences, such as higher rates of depression and suicide, negative impact on educational achievement, self-reported medical errors, absenteeism, economic impacts and occasionally leaving the profession.^{1,4–7}

Historically, during disasters, Australian GPs have adapted their practice to provide front-line services and facilitate business and healthcare continuity. The role of GPs can become ‘ill-defined, ad hoc and opportunistic’ during these times.⁸ Despite significant input from primary care, most disaster research is based in tertiary healthcare.⁸ Two recent reviews of the existing literature have concluded insufficient evidence exists regarding interventions to support front-line healthcare professional resilience and well-being in mass disasters.^{9,10} Research into GP registrar training and well-being during disasters is also uncommon despite the clear need to support registrars during these times. Social, workplace and educational modifications that are required in response to disasters, such as the recent widespread Australian bushfires or the global COVID-19 pandemic, are likely to alter training, creating challenges and opportunities.^{11,12} Recognising that learning is often greatest when GP registrars are stretched outside their usual comfort zone and simultaneously supported to overcome challenges, this study aims to explore the experiences of GP registrars with learning and well-being during the COVID-19 pandemic.¹³

METHODS

Research team

At the time of this study, IW was a Royal Australian College of General Practitioners (RACGP) Academic Post Registrar with the South Australian regional training organisation (RTO) (GPEx). Her position and personal experiences of the training impacts from COVID-19 provided an informed insider stance, which facilitated disclosures around shared experiences during interviews. Other researchers provided informed insider perspectives from an RTO stance. The research team comprised experienced qualitative researchers (LW, JB, TE) with extensive combined expertise in medical education and registrar training.

Qualitative approach

This project used a constructivist epistemology approach, viewing knowledge and understanding as being constructed through human interactions and experiences.¹⁴ The researchers drew on social and cultural

learning theories, such as Wenger and Lave’s situated learning theory; this views learning as involving context-specific, integrative social participation, which is pertinent for registrars working in practices impacted by COVID-19 changes.^{15,16} This informed the analysis, however was not directly applied as a framework, to allow free exploration of complex inter-related phenomena.

Context

Australian General Practice Training (AGPT) is a 3–4 years’ work-integrated experience where formal teaching, support and assessment is predominantly delivered to doctors in training through nine RTOs.¹⁷ These organisations provide formal training and broker trainee employment in relevant clinical environments for registrars who are working throughout a large regional geographical area within a single state in Australia. GP registrars in Australia usually consult with patients in community practice using face-to-face appointments, with supervisors on-site who can provide clinical guidance and mentorship. They are employed by the practice owners during their 6-month rotations, and earn a safety net base salary, plus additional income based on patient billings. Telehealth was not used regularly in GP in Australia prior to COVID-19 as, unlike face-to-face consultations, these consultations were not funded through Medicare until March 2020. Other RTO training staff include medical educators, also general practitioners, who are employed to deliver RTO teaching predominantly through face-to-face workshops and assessments. Programme training advisors are professional staff members who coordinate the training of a group of registrars and facilitate case management and administrative training arrangements.

Several GP training pathways exist, with over 5500 trainees in 2019.¹⁸ Currently, there is an approximately even distribution of trainees between metropolitan and rural pathways.¹⁹ International medical graduates (IMG) represent over one-quarter of Australian GP trainees.²⁰ The AGPT offers 1500 training positions each year, with recent gender distribution including approximately 61% females and 39% males.^{17,18,21} RTOs are accredited by two postgraduate GP colleges: the RACGP and the Australian College of Rural and Remote Medicine to deliver the AGPT programme. To Fellow, AGPT registrars must undertake clinical placement and the RTO education programme and also pass summative assessments delivered directly by the postgraduate college they are enrolled with. RTOs are potentially well positioned to implement additional supports during crises, and would likely benefit from insights into COVID-19 experiences.

Recruitment

RTOs in South Australia, Victoria and New South Wales and the national GP registrar representative body (General Practice Registrars Australia) emailed invitations to registrars. Inclusion criteria included completion of at least 3 months of full-time equivalent community-based GP training during 2019 and 2020. Stage of registrar training

Box 1 Interview questions

- ⇒ Tell me a bit about yourself and your general practice training so far.
- ⇒ How has your GP training changed during the COVID-19?
- ⇒ Tell me about being supported as a general practice registrar during COVID-19.
- ⇒ Tell me about how you managed your learning during the COVID-19.
- ⇒ Tell me about your well-being during the COVID-19.
- ⇒ Tell me about how you feel changes from COVID-19 shaped your overall journey towards becoming an independent general practitioner.
- ⇒ Reflecting on your experiences, what advice do you have to regional training organisations regarding supporting registrars during times of future disasters?
- ⇒ Do you have anything else relevant to add to this research project?

GP, general practice.

was not specifically captured within demographics; however, by nature of the inclusion criteria and the structure of yearly training commencement, registrars at the beginning of their community training were not included. Respondents were asked to complete a short background survey online. From this, purposive sampling was used to select interview candidates with maximum diversity of demographics and COVID-19 experiences, rather than seek a representative sample of Australian GP registrars. An honorarium of \$125 was offered. Snowball sampling identified one GP supervisor participant to triangulate findings.

Data collection

Interview questions were developed by IW following review of GP training literature and several discussions with the research team members to focus the study. Questions were refined following piloting the interview. Questions explored the impact of COVID-19 on learning, well-being and support experiences (box 1).

After obtaining informed consent, IW conducted semi-structured interviews, which were recorded on Zoom. Interviews were transcribed and deidentified using NVivo V.12.²² Participants were provided with their interview transcript to amend or approve. Adequate information power was achieved after 15 interviews, owing to the highly specific participant sample and rich quality of dialogue.²³

Analysis

Thematic analysis was undertaken using NVivo V.12 through data familiarisation, inductive code generation and theme identification in patterns across the data set.²⁴ All initial coding was completed by IW and this was iteratively reviewed and refined with the research team.

Rigour

IW's interpretation was refined through reflexivity and enquiry and critique from research team members.¹⁴ For triangulation, one GP supervisor identified by a registrar as demonstrating excellent support was invited to

participate in the study. A first draft of the results was shared with participants, with feedback sought regarding the initial findings as part of member checking. Feedback was also sought from a reference group of three GP registrars undertaking academic posts at the Department of General Practice. Commentary was used to reconsider the data and refine results.

Patient and public involvement

Patients or the public were not involved in this study.

RESULTS

The demographic details of 34 respondents were received and 15 were interviewed, with background characteristics of participants represented in table 1. Interviews were conducted between May and July 2021 and were 27–56min in length. Additionally, one nominated GP supervisor contributed written comments to the project. In order to ensure anonymity, participants are numbered (1–15) randomly, without individual demographic descriptors being provided.

The participants described diverse contexts and experiences with learning, well-being and support from their RTO during the COVID-19 pandemic. Themes that emerged from the data are described below. During analysis it became evident that while common training changes and personal circumstances set the scene, a significant concept influencing experiences was the registrars' professional and social connections.

Challenges in the clinical setting

Initially, consult diversity decreased. Script appointments became more frequent and opportunities for preventive and chronic disease medicine reduced. Some participants found that time management then became more stressful, with additional time spent discussing COVID-19, increased mental health presentations and using personal protective equipment. Navigating newly approved telehealth consultations was time consuming, due to patient assessments and coordination, and paperwork logistics being unfamiliar and more complicated.

I didn't feel like I was seeing very many things, so I actually ended up cutting back to two days a week for the last part of that six month rotation. (P2)

Participants acknowledged that COVID-19 had '*coloured the whole experience*' (P10) of training. Several registrars had elective changes in their clinical environment, such as involvement in respiratory clinics. Workload changes varied; rural registrars generally had stable or increased workload, with COVID-19 changes intensifying the challenge to provide care and service in limited resource settings. Urban registrars tended to have initially decreased work hours, stemming from decreased patient volume early in COVID-19. Often this extra time was used for study, but caused concerns regarding clinical exposure opportunities and income. Ultimately, most registrars felt

Table 1 GP registrar participant background characteristics

| Demographics | Survey sample | Interview sample |
|--|------------------------------------|------------------------------------|
| Total | 34 | 15 |
| State | 11 SA, 13 Vic, 3 NSW | 6 SA, 6 Vic, 3 NSW |
| Gender | 11 male, 23 female | 6 male, 9 female |
| Rural/remote Classified as Modified Monash Model (MMM) score of 2–7 ^{48*} | 10 (MMM 2–6) | 6 (MMM 2–6) |
| International medical graduates | 5 | 4 |
| Years since medical school graduation | Range: 4 to ≥ 16 Median: 6 | Range: 4 to ≥ 16 Median: 6 |
| Experienced community lockdown for >1 month | 14 | 7 |
| Involved in COVID-19-positive patient care | 8 | 5 |
| Impacted by delayed fellowship examinations | 20 | 11 |
| Failed to meet inclusion criteria | 7 | 0 |

*MMM classification of location coded cities as MMM=1, with rural locations coded as MMM 2–7, with the most remote locations coded as MMM=7.
GP, general practice; NSW, New South Wales; SA, South Australia; Vic, Victoria.

they were able to seek alternate learning activities to meet formal curriculum learning requirements, such as online programme resources and remote study groups.

Training and assessment changes

Commonly, educational tutorials transitioned from face-to-face to online delivery. At times participants reported that this was harder to engage with, practical learning aspects were lost and distracting home or work environments impacted attendance and attention. However, most participants described online learning as equally effective and more convenient.

They did a great job of moving tutorials online. ... We still have the opportunity to ask questions and to have small group discussions and do the sort of things that help us to learn during those workshops. (P11)

In the Australian setting, assessments consist of a blend of RTO-delivered progressive assessments and GP specialist college hurdle assessments. Where RTOs were able to decrease or adapt assessments, or extend deadlines, participants reported that these modifications were welcomed. One participant described that an external educator observation became a cathartic debriefing experience (P1). Other examples of adapted assessments included discussions facilitated through case note analysis (P7) and Zoom-based observation of consults.

Participants described delays to a high-stakes national summative examination with little notice, as a stressful experience with prolonged uncertainty and intensive study. Frustrations were voiced around issues including insufficient RTO advocacy, as well as impact on personal lives, with one registrar feeling they had '*lost the past 18 months of [their] life*' (P13).

Why are RTOs there? If there is a training body, they should have some responsibility, or rally on our behalf. (P13)

Rapidly developed examination preparation workshops from RTOs supporting preparation for new online national examinations were highly valued by registrars.

At the time [the mock OSCE] was great, I thought good on the RTO for putting this on and trying to come up with something because they wouldn't know how the remote clinical exam was done. (P1)

Personal growth and self-management

Many registrars felt that their well-being was 'okay', but acknowledged stress and cumulative fatigue. Some registrars recognised personal attributes that heightened stress, for example, baseline anxiety. Conversely, personal strengths and facilitators of stress mitigation were recognised, including the sense of perspective (P12), as well as resilience and resourcefulness (P5), particularly in the rural setting. One registrar who was heavily involved in a respiratory clinic felt that COVID-19 had been a rewarding and enjoyable time (P4). Poor physical health negatively impacted experiences. Nearly all registrars sought exercise for well-being maintenance. Several registrars had personal health experiences such as hospitalisation for a chronic condition. One registrar suffered a life-threatening health event prior to a fellowship examination.

To manage stress, several registrars took circuit-breaker actions, including elective transition to part-time, arranging leave or delaying fellowship examination attempts. Several registrars commented on the importance of learning to set professional boundaries during

COVID-19, and self-monitoring accepted workload to prevent burnout. Having one's own GP or psychologist was valued, though barriers including rural access or personal hesitance were identified. Common well-being advice for future registrars included prioritising self-care, seeking help early, maintaining hobbies and promoting advocacy for registrar welfare.

COVID has really shown me the importance of setting your own personal boundaries. ... that's one of the toughest things that you have to do as a GP. So it felt like COVID gave me the opportunity to advance further with that because it was kind of like, sink or swim. (P9)

Overwhelmed

Some registrars developed negative states of well-being. Elements of burnout, depression and emotional trauma were discussed, particularly in settings of isolation, excessive workload and influx of mental health presentations, being impacted by delayed examinations, and stressful family circumstances. Participants described that flow-on effects included training and professional disconnection and dissatisfaction, compassion fatigue and features of helplessness or hopelessness, with one registrar disclosing suicidal thoughts.

I was sad, and I didn't really want to go to work ... I realised that, hang on, this is not good. I can't really hang on any more. ... I was having suicidal thoughts ... I was on the verge of giving up because I've tried everything myself. (P3)

I had patients who had attempted suicide during the whole COVID situation, suicide by horrible means ... I feel like I can't do everything much more than what I'm doing. I feel like I'm taking all of this back home and I don't have enough time for the family. And I'm thinking about these cases over and over and over again. And I feel like I'm at work the whole time. There's no break from work. And even if I do, I'm studying. So it's 24/7 on my mind. (P8)

The cumulative layers of stress in several life domains affected registrars' well-being and capacity to study at times. Factors easing this stress included being more senior and subsequently not needing to '*learn the ropes*' (P9) of GP, and initially decreased patient volume facilitating extra time and energy for well-being and study.

You're trying to have a normal life, which is difficult even when things are normal. But then you have a lock down, kids are at home, you're studying and trying to work ... Definitely affects you. ... No socialisation, no kind of respite. (P13)

Connection with RTO staff

Several registrars felt well supported by their RTO, or were aware of supports but did not need them, particularly if they were more advanced in training or in supportive

practices. Other participants felt neutral regarding RTO supports.

I don't know that I felt, I guess, much extra support coming from the RTO ... I was getting the support I needed within my practice. And I could have reached out if I had needed to. (P10)

Participants reported that consolidation of existing relationships between registrars and RTO staff facilitated a stronger sense of connection; registrars felt more comfortable when interacting with familiar staff members. Some medical educators were reported to increase their availability to provide registrars with additional clinical and well-being support, supplementing the role of supervisors. Registrar connection opportunities were also facilitated by some educators, such as creating WhatsApp groups. Participants also viewed RTO administrative staff as an important first '*port of call*' (P3) for training logistics and well-being check-ins.

I could message the [medical educator] and ask any questions about patients if I wasn't comfortable asking my supervisor ... also, for wellbeing, because I didn't feel as supported in my practice, she was really good to ask questions or get support around that as well. So probably my medical educator was the main support person. (P2)

Registrars reported feeling unsupported when they perceived that their RTO was not taking action, when communication was delayed or broken down, or where registrars feared training repercussions if they reached out for support.

Some registrars, particularly around mental health issues, are a little bit anxious about telling the RTO that, because they're worried that's going to make their training longer, or make them have to seek attention, or maybe the RTO would report that to [the national medical registration board]. (P5)

Some rural registrars perceived that they were set up well to manage with their RTO through COVID-19, as support was already provided remotely.

We were already set up to cope with a lot of stuff because we've been corresponding by distance anyway. ... the RTO can't knock on everyone's door and say let me give you a hug. (P15)

Connection with other registrars

Connection with other registrars was a prominent source of support. Registrars typically interacted within practices or study groups; previously, connection was facilitated at face-to-face RTO tutorials; however, many remarked on reduced opportunistic interaction through online tutorials. Important aspects of support included a shared sense of '*camaraderie and suffering*' (P9), opportunity to compare the benchmark of 'normal' experiences and caring for colleagues. Opportunity for debriefing with

peers on the same level, who were ‘*not senior to you, and you’re not supporting*’ (P10), was specifically valuable.

Staying connected is really important. ... trying to stay socially connected as well as for learning, that mechanism gives you the opportunity to talk about how you’re going, how COVID-19 or whatever disaster is affecting your clinic, your learning, your patient load—yeah, seeing how others are being affected. (P11)

Connection with supervisors

GP supervisors regularly interacted with registrars within practices. Registrars expressed gratitude for support within these relationships, particularly around adaptation in providing clinical or well-being support. Where COVID-19 reduced registrar patient loads, some supervisors sought additional learning opportunities, such as involving registrars in follow-up of abnormal patient results. Some registrars appreciated role modelling demonstrated by supervisors, such as diligence in teaching or public health roles. Variations in individual supervisor–registrar interpersonal dynamics were noted; some participants reported feeling lucky with their pairing but acknowledged peers with less supportive experiences. Workload and burden on supervisors, both from COVID-19 and from training obligations, were noted.

It’s good for supervisors to know that, especially in more difficult times, they can become quite an influential role model. ... mine was a very good role model, which really helped quite a lot and was a source of support. (P7)

Connection with practice teams

Participants attributed feeling supported to strong practice staff teamwork. Where teams were perceived as less cohesive, registrars described feeling isolated. Positive experiences were voiced where practices demonstrated timely, coordinated COVID-19 responses, where practices were responsive to protect vulnerable registrars and where registrars felt valued and integrated as empowered team members. When these features were present, attending work during lockdowns was felt to be a privilege and sustained well-being.

People were just kind and gentle to each other in that really stressful environment ... we have such a value and pride in our practice in both senses—in the practice of being a doctor, and in the practice as in the business. We couldn’t let one another suffer in silence. (P15)

I was well supported, but I think a huge part of that for me was being in great practices ... that’s what makes a good clinic for me. I enjoy going every day. And so even though it was a real kind of kick in the guts and we had to change up how we did it, I still felt like I was in my zone with my people. (P5)

Stress occurred where conflicting opinions lead to disorganised COVID-19 responses and insufficient precautions. It was acknowledged that practice stress, including financial stress or reception staff burdens, limited support available to registrars. COVID-19 introduced insurmountable stressors for one rural practice without coherent team foundations; ultimately most GPs developed burnout and left, including the registrar.

Connection with the broader medical profession

Registrars sensed connection with the broader medical profession. COVID-19 facilitated some registrars forming stronger relationships with local specialists, and with groups of medical peers; for example, ‘*not feeling alone*’ (P8) by reading experiences posted on the *GPs Down Under* Facebook group, an online community of GPs in Australia and New Zealand. Several registrars described gaining support through participating in the global shared learning experience of COVID-19, particularly ‘*learning on an equal plane*’ (P10) to senior colleagues, and being a small part of the big picture of healthcare response during COVID-19.

Being part of that event, which is hopefully once in a generation or once in a lifetime, was interesting. Then going from the beginning of last year when we just heard about COVID being in China to now being able to give, my practice currently is vaccinating, is a spectrum of having participated in that process, even in a small way. (P10)

Connection with patients

Connection with patients was reported to contribute to appreciation of the skills and professional roles of doctors in public health responses. COVID-19 was reported to introduce tensions in doctor–patient relationships. Challenges in managing patient distress and expectations around COVID-19 were described. Telehealth was reported to impact ease of usual communication and increase registrars’ sense of isolation. Registrars voiced concerns when patients were untruthful through screening procedures, leading to possible inadvertent staff exposure. Some registrars described feeling begrudging towards patients, particularly with mental health presentations. However, working through these challenges and overcoming difficulties to provide highly needed services such as respiratory clinics was reported to be rewarding. Positive discussions about patient healthcare were described to be facilitated through increased patient public health awareness. Registrar contributions to individual and community patient education were described. Registrars reported increased acknowledgement of the merit of effective communication and therapeutic relationships. Registrars who experienced personal health issues during COVID-19 also reported gaining a deeper comprehension of changed patient experiences through pandemic-impacted healthcare, bringing insights to their own consults.

It was very satisfying because a lot of people were very appreciative in the way that we were able to offer that service where we could swab or see people or both ... it was actually a very challenging but rewarding thing for us. (P4)

Connection with family, friends and other personal supports

Finally, all participants described the importance of connections to partners, family, friends and other local supports external to medicine. Access to these supports was interrupted by travel and social restrictions, and ongoing study for delayed examinations. Stress was identified in being unable to see geographically distanced family, complicated local family circumstances, difficulty balancing professional needs with family time, fear of workplace COVID-19 exposure affecting family and overseas communities being affected. Most registrars sought increased interaction via phone or internet to compensate where access was decreased.

I'm feeling very lucky they're all well back in [country], which, many of us have lost their friends and family ... A lot of my teachers, professors of medicine, they died of COVID because they all had like other multi morbidities ... My wellbeing revolves around my family. (P6)

I don't have a partner, I don't have a family here ... I can't go home. I don't have many friends, I don't have my church support. So it was just really hard. (P3)

DISCUSSION

This study uses the COVID-19 pandemic to explore the effects of disasters on training, and professional and personal well-being for Australian GP registrars. The findings have confirmed the importance of broad principles around registrar well-being. However, due to the nature of the COVID-19 disaster, specific opportunities are highlighted such as adapted and digital educational arrangements, as well as intensified challenges, for example, personal and professional isolation. Insights are gained regarding strong GP training organisation foundations that can be augmented to support primary care registrars during future disasters.

This study reinforces the value of maintaining primary care registrar well-being through disasters.²⁵ The role of foundational factors that promote registrar well-being, including exercise, social support from friends and family and time away from work, is illustrated.^{2 4-6 26} Both positive and negative influences of individual registrar factors such as personality variables^{2 6} and resilience^{13 27 28} are shown to impact experiences in managing crisis-related changes. This biological disaster impacts some established training-related learning and well-being challenges, such as working in unfamiliar circumstances, employment uncertainties, perceived training organisation inaction, prolonged examination preparation and impacts on

opportunities for building clinical competence.⁴⁻⁶ Registrar reflections reinforce emerging data regarding transitions to online learning, including advantages of the breadth of online resources and scope for interaction with diverse medical peers, as well as disadvantages of technical challenges, reduced academic engagement and impact on well-being.²⁹ The project findings add qualitative depth to grey literature around 2020 Australian COVID-19 trainee experiences, including introduction of telehealth; decreased patient loads and diversity; impacts on educational workshops, training and career progress; and effects on mental well-being, combined with increased social isolation and concerns about COVID-19 impacting family.^{11 12 30}

Capacity to participate clinically in the global COVID-19 pandemic crisis is shown to benefit registrars' developing professionalism. This can be recognised and nurtured by GP training organisations. Wenger and Lave's situated learning theory is relevant, as registrars participate towards the centre of a community of practice; in this case, primary care during a global disaster.^{15 16} This engagement is illustrated to support registrars' sociocultural development of their professional identities. Beyond developing confidence within clinical practice, robust professional identity formation is protective for well-being and career success.³¹ At times of crises, GP training organisations should recognise the value of participating in these rare experiences and allow flexibility for registrars to contribute to disaster response activities. This should be balanced with individual workplace review and support to ensure registrars are working in safe circumstances and can progress towards training requirements.^{32 33} GP training organisations are positioned to facilitate monitoring and support of disaster-related concerns regarding disruption to training, employment and financial stress and registrar well-being. Our study illustrates benefits in having a small number of familiar people maintain efficient, timely, regular contact to monitor the registrar's situation, to anticipate and step in to manage issues to minimise late presentations of registrars needing support. Medical educators can assist with registrar needs through their ability to offer learning and well-being support via their personal connection with a registrar, as well as facilitating links to relevant GP training organisation supports where required. When feasible, GP training organisations are also positioned to offer other action to mitigate disaster-related stressors, such as providing leave opportunities without impacting training progress, or identification of logistical supports for common stressors such as childcare.³³⁻³⁵ This study reinforces the need for GP training organisation education delivery methods and content to have disaster-specific innovation and adaptation to ensure relevance and reliability. The importance of clarity and availability of trainee support pathways and counselling resources are also strengthened by our findings.^{7 33} Finally, registrars in this study acknowledge value in dedicated time for self-care and being equipped with management tools for well-being. Workshops facilitated

by GP training organisations should be sensitive to registrar and disaster contexts. The effectiveness of trainee programme wellness initiatives is an area of ongoing research.^{5 7 33}

While GP training organisation adaptations and supports are an important part of facilitating registrar learning and well-being through disasters, interventions are less often required when strong personal and professional connections are in place. The role of relationships in sustaining registrars through disaster is a strong overarching theme in our study, reinforcing the influence of social relatedness and connections on trainee well-being.^{2 5 13 33} Examples of this are found professionally with supervisors and within practices. Especially in a disaster response setting, connection with supervisors is crucially influential for registrar experiences and professional identity development in an apprenticeship model of training.^{36 37} The described 'educational alliance' between supervisors and registrars is pertinent, drawing on supervisors' ability to provide valued, flexible clinical or well-being support, while facilitating learning and patient safety.³⁷ This study demonstrates that GP training organisations can rely on supervisors, who have a centrally positioned role, in early recognition of registrars needing additional assistance.³⁸ Our findings also reinforce the strengths of supervisor role modelling, which is likely to be adapted during disasters,³⁹ as well as the issues in quality variation of optimal supervision which may be magnified under the stressors of a disaster.³⁶ As fellow GPs, stress and workload increase for supervisors during crises. Subsequently, for the benefit of both supervisor and registrar, it is critical for liaison to occur between GP training organisations and supervisors, and for administrative and assessment requirements to be modified. Incorporation into clinical teams as part of emergency response is another powerful source of registrar support. The biological disaster of COVID-19 has introduced barriers to teamwork, such as social restrictions limiting face-to-face 'sharing space' opportunities. However, it has also driven interdisciplinary collaboration opportunities where registrars have been valued in, and contributed meaningfully to, their clinical teams and communities. Our findings reinforce established benefits of primary care teamwork, including relationship building, integration and a feeling of belonging.^{40 41} Both at times of typical and disaster-impacted practice, GP training organisations can recognise and promote the importance of primary care team incorporation. There is also a need to identify and support registrars where disaster-related stress has introduced dysfunction and developed maladaptive practice teams.

As part of support felt through connection with all medical colleagues, sharing clinical experiences is recognised as a powerful bonding experience.⁷ Registrars appreciated debriefing about their stories to same-level peers and senior practitioners; these opportunities allowed registrars to seek advice and learn from encounters, and to reflect and collaborate around how they compared with colleagues' experiences. These findings add further

strength to the sustaining benefits of supportive collaboration with same-level and senior peers, which have been established across a broad range of settings. This has extended from the Australian GP training context, particularly through face-to-face educational releases,² through to international context,^{32 42 43} including the challenging rural primary care setting.⁴⁴ GP training organisations should recognise the well-being and learning benefits of these experiences. Conscious efforts should be made during crises to optimise disaster-adapted activities to connect registrar peers. Finally, social connections to friends, family and other local supports have established well-being benefits, and resonate with 'love and belonging' within Maslow's hierarchy of human needs, a scaffolding model for a holistic view of human wellness requirements.^{7 32 42} Strong registrar connections with social supports can be encouraged by GP training organisations, and facilitated such as through enabling digital remote connections. Supervisors may also have a role in integration of registrars with local social supports.^{2 13} GP training organisations can offer increased check-in opportunities for vulnerable registrars, particularly unmarried, IMG or rural registrars who may be distanced from loved ones.^{2 5 13 33 34} This study demonstrates that GP training organisations can facilitate registrar connection to enable debriefing and collaboration around their experiences and techniques for managing training through disaster. Awareness of the identified principals influencing registrar experiences during crisis can facilitate GP training organisation support efforts for registrars. This involves both ensuring strong foundations at times of normal practice, and recognising areas to augment and adapt at times of disaster (table 2).

This Australian study contributes insights into the global picture of early COVID-19 disaster experiences of primary care registrars. International data from the UK, USA and China examining trainee and practising healthcare professional experiences have identified comparable findings with practical and emotional adaptation to stressful circumstances, and reflective meaning-making.¹³ Substantial diversity in individual contexts and experiences, such as clear differences in workload experienced by urban versus rural trainees, demonstrates the need for tailored support interventions. This diversity has been acknowledged in recent international papers.^{32 45} Concerns and negative impacts are noted from decreased face-to-face consults, disrupted education and poorly coordinated communication processes, and stress and burnout regarding uncertainty, exhaustion, isolation and workload.^{26 32 45-47} Pleasingly, the positive impacts of collaboration and teamwork, recognising the value of the public health roles of doctors, and benefits of transition to online interaction are also echoed.^{32 42 45} Trainees have felt supported where educational bodies provided regular supportive communication and demonstrated understanding of registrar circumstances.³²

Table 2 Foundational and disaster support recommendations for GP training organisations

| | Training logistics | Clinical learning | Well-being support | Sharing clinical experiences | Team incorporation | Developing meaning in professional role | Connection to supports external to medicine |
|---------------------------|--|---|---|---|--|--|--|
| Adaptive disaster support | Review impact on individual workplaces. Agility and adaptability in training circumstances. Clear, prompt communication about training changes. Disaster-specific guidelines for registrar practice. | Adapt methods of learning delivery. Assessment adaptability and rationalisation. Support and liaise with supervisors. | Regular verbal contact with registrars. Protected well-being check-ins. Simple access to high-quality well-being resources. | Increase registrar connection opportunities. | Encourage registrar involvement in practice disaster responses. Support registrars in maladaptive teams. | Adaptability and support for registrar participation in disaster response roles. | Deliberate check-ins with isolated registrars. Promote and enable registrar social integration and connection with personal social supports. |
| Foundational support | Efficient communication mechanisms. Clear outline of training requirements and supports. Registrar advocacy. | Promote educational alliance; collaborate with supervisors. Accessible, effective workshops throughout training. Examination preparation resources. | Compatible, continuing pastoral alliances between registrars and professional support members. Equip registrars with well-being monitoring and management strategies. | Routine debriefing and collaborative opportunities. | Promote team integration throughout training settings. | Promote the skills and diversity of the GP role within the medical profession. | Encourage strong personal connections. Facilitate links to local connections for isolated registrars. |
| GP, general practice. | | | | | | | |



Strengths and limitations

COVID-19 has provided a unique opportunity to explore registrar experiences during a crisis, which can inform GP training organisation support strategies for future disasters. Project strengths include involvement of multiple RTOs from states with varying COVID-19 prevalence, and use of purposive sampling to promote transferability and likelihood of capturing a range of registrar experiences. Sampling also captured a wide range of personal and practice contexts and geographical locations. Individual interviews allowed in-depth exploration of perspectives, with IW's informed insider position facilitating disclosures through knowledge of shared experiences. JB and TE provided beneficial informed insider training organisation perspectives.

Project limitations include a relatively cross-sectional picture of the evolving COVID-19 pandemic; at the time of interview completion, COVID-19 in Australia was predominantly contained. Ongoing changes to experiences and longer term effects may not be captured. Junior GP registrars were not included within the inclusion criteria, and some experiences were difficult to distinguish from natural progression through GP training. We also sought triangulation perspectives from several GP supervisors and medical educators, but were only able to recruit one supervisor, possibly reflective of onerous GP workload during disaster. Finally, project findings may not be directly applicable to differing challenges arising in future disasters.

Areas for future research

Ensuring well-supported GP training during disasters is an area requiring ongoing research. Relating to this project, future studies could explore strategies to identify and assist registrars with suboptimal personal and professional connections in place, IMG registrars who may already be at risk of isolation, as well as GP training organisation efforts to support practice culture and teams through crises.

CONCLUSION

This study identifies several important aspects of support which shaped registrars' diverse experiences of the COVID-19 pandemic disaster, particularly relating to professional and social connections. This support is important at a practice level, but must additionally be provided at a training organisation level, with dedicated known contacts for registrars to access. Particularly important aspects of registrar support include connection to educational mentors such as supervisors and medical educators; connection and culture within practices; opportunities to share clinical experiences; and connection to personal social relationships external to medicine. The findings have also confirmed the significance of broad principles around maintaining registrar well-being. Participation in this global disaster influenced registrars' developing professionalism when they were supported in opportunities to contribute to practice responses and planning. GP training organisations are positioned to implement

monitoring and supports for training through disasters. These findings contribute to the international developing field of knowledge of registrar training and well-being needs during crises. Although registrars may not require significant GP training organisation intervention where powerful professional and personal connections exist, strong GP training organisation foundations can be established and augmented to support registrars in need during future disasters.

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Contributors IW is the primary researcher, with involvement in all aspects of the project including research design, recruitment, conduction of interview, interview transcription and deidentification, data analysis and interpretation of results, article drafting and publication preparation. LW has been the primary research supervisor and guarantor. She has supported the development of the research design, has been involved in deidentified transcript analysis and result interpretation and supported the manuscript drafting, review and approval. JB has supported the supervision of IW, including the development of the research design, methodology, analysis and manuscript review. TE has supported research planning and implementation, particularly around RTO engagement, communication, research translation and manuscript review.

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Competing interests IW is currently an RACGP General Practice Registrar training with GPEx. She has won a grant through the RACGP to undertake this research project as part of her GP registrar training. RACGP and GPEx are not directly involved in conducting this research. No other member of the research team will benefit financially or otherwise from conducting this research. LW is the Director of the Adelaide Rural Clinical School and sits on ACRRM, Research and Assessment Committees, neither of which have involvement in GP registrar training. JB and TE are both staff members of GPEx. Neither participated directly in registrar interviews.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not required.

Ethics approval This study involves human participants and was approved by The University of Adelaide Human Research Ethics Committee (H-2020-251). Participants gave informed consent to participate in the study before taking part.

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Data availability statement Data are available upon reasonable request. Due to the potentially identifiable nature of some comments, data have not been made publicly available but can be made available on application in accordance with ethics requirements.

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