PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Australian General Practice Registrars' experiences of training, wellbeing and support during the COVID-19 Pandemic: a qualitative study
AUTHORS	White, Isabella; Benson, Jill; Elliott, Taryn; Walters, Lucie

VERSION 1 – REVIEW

REVIEWER	Johnston, Peter NHS Education for Scotland, North Deanery, Pathology
REVIEW RETURNED	19-Jan-2022

GENERAL COMMENTS	General This is an interesting paper that presents a view of the COVID pandemic though the lens of primary care trainees and in a country where experience is in some ways different. Abstract This is a good summary of the paper as currently written. It may need to be revised. Introduction This section starts with the structure of primary care training in Australia. Whilst this is interesting, the problem to be highlighted is spread across paragraphs two and three – for example," isolation; limited employment flexibility; training changes and uncertainty; teaching problems; and challenging work conditions … inadequate support during training…". The gap is not clearly identified and, in my reading of the findings, relates to the support available to GP trainees during the pandemic and how differing structures and experiences contribute to their perception of that disaster in public health. Clarification of this would be helpful, as would stating the specific research questions that were addressed in the study. These were clearly there when you read on but I do think the setting of the findings would be improved by tightening up on these points. The paragraph about training structure could fit in the context section of methods, perhaps? Also, there are two recent reviews of the literature about response to mass disasters and interventions made. They seem to fit with the thrust of the third paragraph (p1 line 39) and could usefully be included in the paper. The references are: Monitoring Editor: Cochrane Effective Practice and Organisation of Care Group, Alex Pollock, corresponding author Pauline Campbell, Joshua Cheyne, Julie Cowie, Bridget Davis, Jacqueline McCallum, Kris McGill, Andrew Elders, Suzanne Hagen, Doreen McClurg, Claire Torrens, and Margaret Maxwell. Interventions to support the resilience and mental health of frontline health and social care professionals during and after a disease outbreak, epidemic or

	pandemic: a mixed methods systematic review. Cochrane Database Syst Rev. 2020 Nov; 2020(11): CD013779. Published online 2020 Nov 5. doi: 10.1002/14651858.CD013779 Patrick Cairns, Gill Aitken, Lindsey Margaret Pope, Joanne E Cecil, Kathryn B Cunningham, Julie Ferguson, Katie Gibson Smith, Lisi Gordon, Peter Johnston, Anita Laidlaw, Gillian Marion Scanlan, Tricia R Tooman, Judy Wakeling, Kim Walker. Interventions for the well-being of healthcare workers during a pandemic or other crisis: scoping review. BMJ Open. 2021; 11(8): e047498. Published online 2021 Aug 17. doi: 10.1136/bmjopen-2020-047498 Methods The sections on the team and the approach to the research are good. As noted, the structure of training could fit in the context section and perhaps allow it to be curtailed in length. The data collection section is clear. If anything (and there is not a lot can be done with this), the semi-structured interview questions tend to be quite directive and specific. For example, Q2 implies that training has changed for sure and thus may direct answers to talking only about change, rather providing a reflection on what has and has not changed. Do Q3 (supported) and Q5 (wellbeing) have links? And if so, how are they brought out? These points are perhaps unhelpful at this stage but the quality of the questions does impact the quality of answers – I think to address this, the authors should describe how the question set was derived and explain the choice of words used. Results The results are interesting and have a lot of face validity in comparison with recent published literature across the world and across healthcare specialties. I like way the section is presented. Discussion The almost bimodal distribution of perception about the effects of the pandemic is interesting and not widely duplicated and is thus worth exploring a bit more, I suggest. Similarly, the effect on how PGs felt their relationship with patients has suffered resonates with some UK work (see Walker KA, Gibson-Smith K, Gordon L, et al. To Develop Evidence-Based Interventions to Support Doctors' Wellbeing and Promote Resilience During COVID-19 (and Beyond). Edinburgh: Chief Scientist Office; 2021:8.). Again, it would be potentially valuable if this GP database might yield more insight on this topic than is presented, particularly as some of the commentary suggests there may be mitigating factors. I feel the discussion is in danger of being seen as limited to GP and Australia and this undervalues the data. The discussion could be improved by adding contextualisation with the help of recently published literature. A quick search provided several such papers and I have taken the liberty of attaching some in the relevant section of the review site.

REVIEWER	Lawrenson, Ross University of Waikato, Waikato Medical Research Centre
REVIEW RETURNED	27-Jan-2022

GENERAL COMMENTS	Introduction This is a concise introduction. It does stress the negative aspects of training and paints the picture of involvement in a disaster as purely an added stress. Only in the discussion do the authors

	acknowledge that participating in rare events such as a disaster or pandemic can have valuable lessons for trainees. They might mention this in the introduction Methods The description of RTOs was helpful. It would be good to know how many RTOs there are in Australia and whether there is an overarching standardisation of curriculum , polices etc? What input do the College and ACCRM have into training? It sounds from the results that the link between the accrediting bodies assessment and the training activity on the ground are rather split? It would also be useful to be clearer of the timeline of the study – when in the training of these registrars did the pandemic start, how quickly did the GP response occur – eg moving to virtual consultations being recognised and funded by Medicare? It would also be good to note the number of GP trainees in Australia at the time of the study in comparison with the sample of 34 respondents. Do we know the breakdown of GP trainees e.g. by gender, IMGs, average years since graduation. i.e. is this a representative sample? Results Why is the gender split of the survey sample and the interview sample not reported? Reporting the range in years since medical graduation would be better as a mean or median. It strikes me that the connection with supervisors is a crucial aspect in an apprenticeship model of training. While the training bodies can suggest ways in optimising the training it is really how the supervisor responds to the challenges of a pandemic or disaster that will have the greatest impact on the trainee. There are a number of examples of this from the trainees. The plight of international students is hinted at in the final section of the results – with a lack of friends or family support being noted. This is why it is important to know the number of IMGs currently training in Australia as they may be particularly vulnerable. Discussion. The language of the discussion carries on from the introduction – that the pandemic is seen as a challenge to training rather than a training opportunity. E.g. learning how to conduct virtual consultations. The importance of connectedness is well made and as above would be important to follow up on with IMGs working as trainees

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1	
General: This is an interesting paper that presents a view of the COVID pandemic though the lens of	We appreciate the positive comments and constructive suggestions from Reviewer 1.

primary care trainees and in a country where experience is in some ways different.	
Abstract This is a good summary of the paper as currently written. It may need to be revised	We appreciate this comment. Following revisions from reviewer feedback we feel that the abstract accurately depicts the article.
1. Introduction a. This section starts with the structure of primary care training in Australia. Whilst this is interesting, the problem to be highlighted is spread across paragraphs two and three – for example," isolation; limited employment flexibility; training changes and uncertainty; teaching problems; and challenging work conditions … inadequate support during training…". The gap is not clearly identified and, in my reading of the findings, relates to the support available to GP trainees during the pandemic and how differing structures and experiences contribute to their perception of that disaster in public health. b. Clarification of this would be helpful, as would stating the specific research questions that were addressed in the study. These were clearly there when you read on but I do think the setting of the findings would be improved by tightening up on these points. The paragraph about training structure could fit in the context section of methods, perhaps?	1. We accept these suggestions. a. The introduction has been modified to highlight the gap in the literature. The structure of primary care has been moved to the context section of the methods. b. The research question has been clarified (i) firstly with a change to the title of the paper and (ii) secondly in the introduction. "This study aims to explore the experiences of GP registrars with learning and wellbeing during the COVID-19 pandemic."

2. Also, there are two recent reviews of the literature about response to mass disasters and interventions made. They seem to fit with the thrust of the third paragraph (p1 line 39) and could usefully be included in the paper. The references are: Monitoring Editor: Cochrane Effective Practice and Organisation of Care Group, Alex Pollock, corresponding author Pauline Campbell, Joshua Cheyne, Julie Cowie, Bridget Davis, Jacqueline McCallum, Kris McGill, Andrew Elders, Suzanne Hagen, Doreen McClurg, Claire Torrens, and Margaret Maxwell. Interventions to support the resilience and mental health of frontline health and social care professionals during and after a disease outbreak, epidemic or pandemic: a mixed methods systematic review. Cochrane Database Syst Rev. 2020 Nov; 2020(11): CD013779. Published online 2020 Nov 5. doi: 10.1002/14651858.CD013779 Patrick Cairns, Gill Aitken, Lindsey Margaret Pope, Joanne E Cecil, Kathryn B Cunningham, Julie Ferguson, Katie Gibson Smith, Lisi Gordon, Peter Johnston, Anita Laidlaw, Gillian Marion Scanlan, Tricia R Tooman, Judy Wakeling, Kim Walker. Interventions for the well-being of healthcare workers during a pandemic or other crisis: scoping review. BMJ Open. 2021; 11(8): e047498. Published online 2021 Aug 17. doi: 10.1136/bmjopen-2020-047498	Thank you, these reviews fit well in contextualising the third paragraph and conclusions have been incorporated. "Despite significant input from primary care, most disaster research is based in tertiary healthcare [11]. Two recent reviews of the existing literature have concluded insufficient evidence exists regarding interventions to support frontline healthcare professional resilience and wellbeing in mass disasters [12, 13]. Research into GP registrar training and wellbeing during disasters is also uncommon despite the clear need to support registrars during these times."

3. Methods The sections on the team and the approach to the research are good. As noted, the structure of training could fit in the context section and perhaps allow it to be curtailed in length. The data collection section is clear.	We are grateful for this feedback and as detailed above have moved the structure of training into the context section of the methods.
4. If anything (and there is not a lot can be done with this), the semi-structured interview questions tend to be quite directive and specific. For example, Q2 implies that training has changed for sure and thus may direct answers to talking only about change, rather providing a reflection on what has and has not changed. Do Q3 (supported) and Q5 (wellbeing) have links? And if so, how are they brought out? These points are perhaps unhelpful at this stage but the quality of the questions does impact the quality of answers – I think to address this, the authors should describe how the question set was derived and explain the choice of words used.	Thank you for these comments, we acknowledge the directive and specific nature of the interview questions. We have added a sentence to explain how the questions were developed. "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, wellbeing and support experiences (table 1). "
5. Results The results are interesting and have a lot of face validity in comparison with recent published literature across the world and across healthcare specialties. I like way the section is presented.	We appreciate this feedback.
6. Discussion The almost bimodal distribution of perception about the effects of the pandemic is interesting and not widely duplicated and is thus worth exploring a bit more, I suggest.	Thank you, we have incorporated comment about this distribution: "Substantial diversity in individual contexts and experiences, such as clear differences in workload experienced by urban vs rural

	trainees, demonstrates the need for tailored support interventions. This diversity has been acknowledged in recent international papers [30, 42]."
7. Similarly, the effect on how PGs felt their relationship with patients has suffered resonates with some UK work (see Walker KA, Gibson-Smith K, Gordon L, et al. To Develop Evidence-Based Interventions to Support Doctors' Wellbeing and Promote Resilience During COVID-19 (and Beyond). Edinburgh: Chief Scientist Office; 2021:8.). Again, it would be potentially valuable if this GP database might yield more insight on this topic than is presented, particularly as some of the commentary suggests there may be mitigating factors. I feel the discussion is in danger of being seen as limited to GP and Australia and this undervalues the data. The discussion could be improved by adding contextualisation with the help of recently published literature. A quick search provided several such papers and I have taken the liberty of attaching some in the relevant section of the review site.	The listed Scottish article and the other attached research provide excellent comparison for our study. References have been incorporated where relevant through the discussion, and a paragraph detailing the international context has been moved to end of the discussion and expanded upon: "This Australian study contributes insights into the global picture of early COVID-19 disaster experiences of primary care registrars. International data from the UK, US and China examining trainee and practicing healthcare professional experiences have identified comparable findings with practical and emotional adaptation to stressful circumstances, and reflective meaning-making [25]. Substantial diversity in individual contexts and experiences, such as clear differences in workload experienced by urban vs rural trainees, demonstrates the need for tailored support interventions. This diversity has been acknowledged in recent international papers [30, 42]. Concerns and negative impacts are noted from decreased face-to-face consults, disrupted education and poorly co-ordinated communication processes, and stress and burnout regarding uncertainty, exhaustion, isolation and workload [22, 28, 30, 42, 43]. 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 [30, 39, 42]. Trainees have felt supported where

	educational bodies provided regular supportive communication and demonstrated understanding of registrar circumstances [30].”
Reviewer: 2	
1. Introduction This is a concise introduction. It does stress the negative aspects of training and paints the picture of involvement in a disaster as purely an added stress. Only in the discussion do the authors acknowledge that participating in rare events such as a disaster or pandemic can have valuable lessons for trainees. They might mention this in the introduction	Thank you, this comment is acknowledged and the wording has been amended to reflect this: “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 [9,10].”
2. Methods The description of RTOs was helpful. It would be good to know how many RTOs there are in Australia and whether there is an overarching standardisation of curriculum , polices etc? What input do the College and ACCRM have into training? It sounds from the results that the link between the accrediting bodies assessment and the training activity on the ground are rather split?	We recognize your interest in the Australian context but feel that expanding the description of the context is not within the scope of this paper. We have added a little more to the context description. “RTOs are accredited by two postgraduate GP colleges: the Royal Australian College of General Practitioners (RACGP) and Australian College of Rural and Remote Medicine (ACRRM) to deliver the Australian General Practice Training (AGPT) Program, which is the most common pathway to GP Fellowship in Australia [16]. To Fellow, AGPT registrars must undertake clinical placement and the RTO education program and also pass summative assessments delivered directly by the postgraduate college they are enrolled with.”
3. a. It would also be useful to be clearer of the timeline of the	3. a. Stage of registrar training was not specifically captured in

study – when in the training of these registrars did the pandemic start, how quickly did the GP response occur – eg moving to virtual consultations being recognised and funded by Medicare? b. It would also be good to note the number of GP trainees in Australia at the time of the study in comparison with the sample of 34 respondents. Do we know the breakdown of GP trainees e.g. by gender, IMGs, average years since graduation. i.e. is this a representative sample?	demographics however by nature of the inclusion criteria (completion of at least three months of full-time equivalent community-based GP training during both 2019 and 2020) and the structure of yearly training commencement, most registrars were GPT 3 or 4; their second and usually final full time equivalent year of training. This information is clear in the description of participants. The timing of introduction of telehealth has been clarified as below: "Telehealth was not utilised regularly in general practice in Australia prior to COVID as, unlike face-to-face consultations, these consultations were not funded through Medicare until March of 2020." b. We have not sought to provide a representative sample of GP registrars in Australia in our study, in contrast the sampling process sought to maximise variation. We have made this clear in the methods. "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."

4. Results Why is the gender split of the survey sample and the interview sample not reported? Reporting the range in years since medical graduation would be better as a mean or median.	Thank you for this constructive comment, gender has not been an intentional omission and has now been included in the table detailing demographics. We have added the median age of years since graduation (6 for both the survey and interview sample), and find it informative to display the range of years since graduation included.
5. It strikes me that the connection with supervisors is a crucial aspect in an apprenticeship model of training. While the training bodies can suggest ways in optimising the training it is really how the supervisor responds to the challenges of a pandemic or disaster that will have the greatest impact on the trainee. There are a number of examples of this from the trainees. The plight of international students is hinted at in the final section of the results – with a lack of friends or family support being noted. This is why it is important to know the number of IMGs currently training in Australia as they may be particularly vulnerable.	The importance of this comment is acknowledged, however unfortunately falls outside of the scope of what can be detailed in this article. The importance of this has been highlighted as an area for potential future 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."
6. Discussion. The language of the discussion carries on from the introduction – that the pandemic is seen as a challenge to training rather than a training opportunity. E.g. learning how to conduct virtual consultations. The importance of connectedness is well made and as above would be important to follow up on with IMGs working as trainees	Thank you, the language of the discussion has been amended. "This study uses the COVID-19 pandemic to explore the effects of disasters on training, and professional and personal wellbeing for Australian GP registrars. The findings have confirmed the importance of broad principles around registrar wellbeing. 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." We acknowledge the challenges faced by IMGs and have added this to the areas for further research section.

VERSION 2 – REVIEW

REVIEWER	Johnston, Peter NHS Education for Scotland, North Deanery, Pathology
REVIEW RETURNED	12-Apr-2022

GENERAL COMMENTS	This revision has addressed the remarks made in regard to the earlier version. I feel the work is better set in the global context and the cited literature better reflects this. I still fee this is a useful article because of its primary care population and its setting in Australia where some aspects of the pandemic seem to have been felt differently. I think it adds to the literature and would be pleased to see it published. A couple of the references are in need of attention: 29. Gordon et al. The citation is incomplete. 41. Walker et al. Last author is Johnston P not Peter J! P48 l 5 - practicing should be practising.

REVIEWER	Lawrenson, Ross University of Waikato, Waikato Medical Research Centre
REVIEW RETURNED	12-Apr-2022

GENERAL COMMENTS	Introduction The authors have made a minimal concession to the point that experiencing a major event can be a valuable learning experience. Methods The study has a unrepresentative sample of participants making generalisation of the findings difficult to other settings less clear. The study has invited registrars from a limited number of training centres without explaining the totality of the training in Australia, have had a response of 34 out of an unknown number of trainees and have then "purposively" selected participants from this subset.

	While I am aware of the structure of training in Australia many readers of the BMJ will not understand the two College system and the relationships between the College and the various RTOs. We also do not have information on the stage of training that the particpants were in. Results It is good to see the gender split reported – again would be nice to know if the 68% responses from female registrars is representative of the GP registrar population? I am surprised that the authors consider the relationship between supervisors and registrars "unfortunately falls outside of the scope of what can be detailed in this article" . I agree it is an area where more research is needed because in my experience in governance roles of GP training organisations it is the breakdown in these relationships which cause most problems. There are hints in this manuscript that these were exacerbated during the crisis but as with the important point about international students who seem to be the most vulnerable it is a rather weak response to say these could be areas for further research. Discussion. The authors have addressed my points about the discussion

VERSION 2 – AUTHOR RESPONSE

Reviewer(s)' Comments to Author:	Authors' response and changes
Reviewer: 1	
This revision has addressed the remarks made in regard to the earlier version. I feel the work is better set in the global context and the cited literature better reflects this. I still fee this is a useful article because of its primary care population and its setting in Australia where some aspects of the pandemic seem to have been felt differently. I think it adds to the literature and would be pleased to see it published. A couple of the references are in need of attention: 29. Gordon et al. The citation is incomplete.	Again we are very grateful for Reviewer 1's constructive feedback which has enhanced the context of the article. The minor corrections have been made, with apologies for the EndNote errors.

41. Walker et al. Last author is Johnston P not Peter J! P48 l 5 - practicing should be practising.	
Reviewer: 2	
Introduction The authors have made a minimal concession to the point that experiencing a major event can be a valuable learning experience.	We acknowledge that a major event can be a valuable learning opportunity. At the time of project planning, COVID-19 was still a new and uncertain experience, with the methods designed to investigate supports to navigate unprecedented changes. This study has been the first research project for the primary researcher, also a GP registrar, whose conceptual lens of support during challenge influenced the project design. The researchers have added an additional reference to affirm the learning experience. "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 wellbeing during the COVID-19 pandemic.[13]"
Methods The study has a unrepresentative sample of participants making generalisation of the findings difficult to other settings less clear. The study has invited registrars from a limited number of training centres without explaining the totality of the training in Australia, have had a response of 34 out of an unknown number of trainees and have then "purposively" selected participants from this subset.	The researchers feel this qualitative study appropriately portrays Australian GP registrar participants through the use of purposive sampling to seek a sufficiently broad range of contexts and experiences. The following demographic GP trainee information has been included: "Several GP training pathways exist, with over 5,500 trainees in 2019 [18]. Currently there is an approximately even distribution of trainees

	between metropolitan and rural pathways [19]. International medical graduates represent over one quarter of Australian GP trainees [20]. The AGPT offers 1,500 training positions each year, with recent gender distribution including approximately 61% females and 39% males [17, 18, 21]."
While I am aware of the structure of training in Australia many readers of the BMJ will not understand the two College system and the relationships between the College and the various RTOs. We also do not have information on the stage of training that the particpants were in.	We agree. We have sought to provide sufficient context to enable readers to understand the results (detailed below) without providing excess detail which may complicate international reader understanding. "Australian General Practice Training (AGPT) training in Australia is a three to four year work-integrated experience where formal teaching, support and assessment is predominantly delivered to doctors-in-training through nine Regional Training Organisations (RTOs) [16]. 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. … RTOs are accredited by two postgraduate GP colleges: the Royal Australian College of General Practitioners (RACGP) and Australian College of Rural and Remote Medicine (ACRRM) to deliver the AGPT Program [16]. To Fellow, AGPT registrars must undertake clinical placement and the RTO education program and also pass summative assessments delivered directly by the postgraduate college they are enrolled with."

	We have additionally added this sentence regarding stage of registrar training. “Stage of registrar training 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.” We have acknowledged this as a limitation of our study. “Junior GP registrars were not included within inclusion criteria, and some experiences were difficult to distinguish from natural progression through GP training.”
Results It is good to see the gender split reported – again would be nice to know if the 68% responses from female registrars is representative of the GP registrar population? I am surprised that the authors consider the relationship between supervisors and registrars “unfortunately falls outside of the scope of what can be detailed in this article” . I agree it is an area where more research is needed because in my experience in governance roles of GP training organisations it is the breakdown in these relationships which cause most problems. There are hints in this manuscript that these were exacerbated during the crisis but as with the important point about international students who seem to be the most vulnerable it is a rather weak response to say these could be areas for further research.	We acknowledge the importance of supervisor-registrar relationships and have added detail to this aspect of the discussion: “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 [33, 34]. The described ‘educational alliance’ between supervisors and registrars is pertinent, drawing on supervisors’ ability to provide valued, flexible clinical or wellbeing support, while facilitating learning and patient safety [34]. 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 [35]. Our findings also reinforce the strengths of supervisor role-

	modelling, which is likely to be adapted during disasters [36], as well as the issues in quality variation of optimal supervision which may be magnified under the stressors of a disaster [33].”