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Exploring the impact of the COVID-19 pandemic on internal medicine doctors' core workplace needs: Going back to ABC

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Abstract

Objectives This study aimed to explore how the COVID-19 pandemic has impacted the workplace core needs of internal medical (IM) trainees in Scotland.

Design This qualitative study utilised an observational approach of interprofessional workshops combined with subsequent individual interviews with IM trainees. Workshops and interviews were audio-recorded, transcribed verbatim and analysed utilising NVivo software. Template analysis was used with the ABC of doctors' core needs outlined in the 2019 General Medical Council (GMC) report *Caring for doctors, caring for patients* as a conceptual lens for the study.

Setting The national IM boot camp in Scotland includes a two hour interprofessional workshop which is trainee-led and explores current challenges in the workplace, including the impact of the pandemic on such relationships

Participants Twelve workshops, involving 72 trainees, were included with ten trainees taking part in the subsequent interview process. Trainees representing all four regions in Scotland were involved.

Results Trainees described all core needs having been impacted by the pandemic. **Autonomy** was lost with emergency rotas but also through a pervasive sense of uncertainty. Work conditions improved initially with additional resources which have since been removed in some areas, affecting trainees' sense of value. **Belonging** was affected positively in terms of increased camaraderie but also challenged through inability to socialise. **Competence** has been affected due to a lack of teaching opportunities

Conclusions Utilising the ABC of doctor's core needs as a conceptual framework for this study highlighted the impact of the COVID-19 pandemic on all domains for IM trainees in Scotland. It has highlighted an opportunity to foster the renewed sense of camaraderie amongst healthcare teams, whilst rebuilding work conditions to support autonomy and competence.

Article summary

Strengths and limitations of this study

- Explores perspectives of national sample of internal medicine trainees, the impact on whom has been less represented to date
- The COVID-19 pandemic has caused disruption across all specialties, this study captures only the IM trainee perspective
- The ABC framework applies to all trainee doctors and should provide valuable insight into how to rebuild and support workplace core needs going forward

Introduction

It is well recognised that the COVID-19 pandemic has impacted the training of junior doctors, with over 80% of doctors in training reporting disruption caused by the pandemic in their General Medical Council (GMC) national training survey in 2020.[1] The pandemic has resulted in increased demand on the National Health Service (NHS), with the United Kingdom (UK) being one of the most affected countries in Europe.[2] The combination of disrupted training and increased patient demand have caused concern relating to the wellbeing of trainees.[3,4] The introduction of social distancing guidance and personal protective equipment has altered the workplace environment for all healthcare workers in the UK. There have been some 'silver linings' described with the use of remote virtual training methods and a transition to remote outpatient clinics.[5] There is evidence of innovation and adaptability, finding opportunity in crisis during the pandemic, which indicates an ability to make positive change which should be harnassed for the future.[6–10]

Comparisons have been drawn between the impact of the COVID-19 pandemic and the various phases of disaster with associated emotions.[11] This includes a heroic phase at the outset with a honeymoon phase of community cohesion and related peaks of emotional highs.[12,13] This is followed by a period of disillusionment where emotions are are low and gradually improve with progress into a reconstruction phase.[14,15] The phase of reconstruction involves taking responsibility for rebuilding with a new beginning and it is crucial that we understand the challenges and opportunities navigated throughout the pandemic in order to do this successfully. In rebuilding, this includes appreciating the ways in which the workplace

changes and training impacts have affected trainees, both positively and negatively, so as to move forward effectively.

In considering the needs of trainee doctors in the UK, the GMC have described the ABC of doctors' core needs in their 2019 report *Caring for doctors, Caring for patients*.[16] This report set out to review the factors that impact on the mental health and wellbeing of doctors, with the aim of improving the culture and working environments for doctors. The core needs identified include **A**utonomy/control, **B**elonging and **C**ompetence with subcategories therein and descriptions as outlined in Table 1.[16] This key report discussed immediate steps and calls to action with the intention of improving UK healthcare environments to support doctors in caring for patients.[16] Since its publication, however, the COVID-19 pandemic has transformed the clinical workplace unexpectedly and we must consider how these changes have impacted the core needs identified in the GMC report. Throughout the heroic and honeymoon phase it is possible that some of the suggested changes from the GMC report were accelerated, whilst we know that some of them will have been postponed, and others likely neglected. Revisting these core needs after the disruption caused by the pandemic is an opportune time to address what we can learn from the pandemic going forward.

This study aimed to explore the ways in which COVID-19 pandemic has impacted the core workplace needs of internal medicine (IM) trainees in Scotland.

Methods

Context

IM Training is a three year training programme for junior doctors in the United Kingdom wishing to pursue a career in medical specialties. In Scotland, simulation training is integrated into each year of the training programme which includes a three-day IM boot camp within the first year. Between August and December 2020, the IM boot camp was delivered to 90 IM trainees at the Scottish Centre for Simulation and Clinical Human Factors. IM trainees participated in a three-day boot camp which included an interprofessional communication workshop that explored challenges and coping strategies. Trainees took part in the two-hour workshop in groups of six with two facilitators (JP and FF). The discussion was trainee-led

covering areas of particular challenge over recent months, including the effects of the COVID-19 pandemic on their workplace experience.

Conceptual framework

The conceptual framework for this study is the ABC of doctor's core needs defined as Autonomy/control, Belonging and Competence, as described in Table 1.

Ethical approval

This study received ethical approval from the NHS Education for Scotland ethics review board. All participants gave written consent for data collection and the publication of anonymised results. Participants were free to leave the study at any time without giving a reason.

Data collection

The first stage of this study utilised an observational approach, audio recording the workshops in which all participants had consented. This approach was chosen to gain insight into participants' accounts of experiences whilst not influencing their learning event.[17] Subsequently, consenting participants were contacted by email three to six months following their boot camp and invited to an individual interview via Microsoft Teams, conducted by JK, to further explore experiences. JK is an acute medicine doctor with eight years of postgraduate clinical training and experience of medical education research. Audio recordings of both workshops and interviews were anonymised and transcribed verbatim.

Data analysis

Transcripts were independently analysed by JK and AH using template analysis and utilising NVivo software. AH is a clinical fellow in medical education with eight years of postgraduate clinical training currently undertaking an doctoral research degree in medical education. In template analysis, a template based on prior research is applied and the initial template may be modified by the data with new codes added inductively.[18] This constructivist study utilised the GMC report's ABC of doctors' core needs as an initial coding framework.[16] JK and AH met on a regular basis and discussed each category of the framework in detail and compared coding. Disagreements on coding were discussed with reference to the ABC of doctors' core needs framework,[16] with final decisions on analysis made by JK. The resultant framework is

therefore her conceptualisation of the framework produced by the interactions between JK, the research participants and her co-researchers.

Results

Twelve workshops, involving 72 trainees, were included in the analysis. This represents the number of IM trainees present in workshops where all partipating trainees had consented. Workshops lasted two hours with trainees aged between 24 to 35 years, with 34 trainees identifying as female and 38 identifying as male. Trainees from all four regions of Scotland (West, South East, East and North) were included. Ten trainees took part in the subsequent interview process, including seven identifying as female and three identifying as male. Trainees were aged 24 to 35 years, again from all four regions in Scotland. Interviews lasted between 18 minutes and 35 minutes (average of 28 minutes).

Trainees described all core needs having been impacted by the pandemic, as summarised in Figure 1. Quotes taken from the workshops are indicated by a 'W' after the trainee code, and those taken from the interviews are indicted by an 'I'. The ABC framework and subheadings are described below.[16]

Autonomy/Control

Work conditions

Trainees reflected on some of the benefits that the COVID-19 pandemic brought to the work conditions:

> 'They employed a psychologist, they had a relaxation area, there was hot drinks on tap…I felt like it made life so much easier, because the care that was in place for staff just increased massively, and it was a really stressful time and no one knew what was happening but there were places you could go that were really nice, and it just felt so nice that the NHS was doing that.' (T5W)

They found that 'having a non-clinical area to take breaks in' (T3W) was very beneficial because 'if you have to go somewhere on the ward or unit to sit and have your lunch, people can just find you and you don't actually get that detachment' (T4W). However, some trainees felt undervalued as such designated areas had already been disbanded, or were planned to be. They found that 'it's when life goes back to more normal, it got lost a little bit' (T57W).

Trainees recognised the importance of having appropriate rest areas as they reflected 'we need to be healthy too, working' (T6W).

Work schedules and rotas

Given the evolving pandemic, trainees found that 'shifts were changing and there was a lot of rota gaps' (T40I). The prolonged nature of the pandemic was taking its toll: 'certainly at the start because there were these extra shifts that needed covered…I think in the first peak of COVID a lot of people volunteered for these shifts more regularly. I think a lot of people are getting fatigued and burnt out and the take up of it is less' (T61W). Their experience was not in keeping with the BMA and NHS Employer's Good Rostering Guide which was a key action point from the GMC report in 2019.[16,19]

Uncertainty

In contrast with the '*Voice, influence and fairness'* subheading of the ABC framework[16] within autonomy and control, whereby doctors can influence the culture of their healthcare organisations, the trainees described a resounding sense of uncertainty in relation to the COVID-19 pandemic. There was a loss of control due to the pervasive uncertainty, not only due to work conditions and rotas but due to the pandemic in general as 'it was a really stressful time, and no one knew what was happening' (T5W). This was particularly relevant in the initial stages:

> 'When COVID started, it wasn't clear what was going on…and we were obviously panicking.' (T44W)

There was uncertainty around the management of patients and changing protocols:

> 'Initial phases when there was a lot of uncertainty with protocols, it actually caused quite a lot of stress.' (T59W)

There was also concern around transmission inside and outside the workplace:

> 'Worried about spreading it…or worried about catching it...or worried about spreading it to their family or bringing it into the hospital.' (T55W)

Overall trainees reflected that the burden of uncertainty affected them in a negative manner.

Belonging

Team working

Trainees found there were challenges with team working in line with social distancing requirements as:

> 'You would always mix in the mess with all these people…I think with COVID you can't hang out with anyone anymore. We [got] told off for having lunch around two tables yesterday and even the opportunity to sit and relax with folk has disappeared.' (T3I)

The ability to get to know others was also impaired due to teaching sessions being cancelled or changed to virtual formats which 'is very impersonal' (T61W) and they found that 'the [reduced] ability to network and meet people has impacted my training'. In addition, the wearing of masks provided another physical barrier to building relationships:

> 'Not recognising people and working with people and there is anonymity, so you have got to make much more effort to introduce yourself to people…you are like "I don't know who that was and I wouldn't recognise them if I saw them again."'(T73I)

Some trainees reflected on integrating redeployed staff into teams and inter-team working of staff who do not usually work together:

> 'We had a lot of redeployed; I had a sexual health consultant, who shadowed me on a ward round which was a bit awkward and…there was a bit of a camaraderie, team effort and recognising each other's skills.' (T52I)

Culture and leadership

There were some positive changes to the culture and trainees described a sense of camaraderie within the workplace through facing the pandemic alongside other healthcare professionals:

> 'There is a bit more, everybody giving everyone an easier time. Everyone knows everyone is having a tough time, people are more forgiving as everybody is struggling a bit at the moment, the hospitals are in a bit of disarray, so they give each other an easier time.' (T73I)

In keeping with the honeymoon phase of disaster, there was a sense of community cohesion within the workplace:

> 'I think people are closer across these interprofessional groups, there's a recognition that maybe the less important things that would normally cause you to butt heads, what do they really matter?' (T65W)

Leadership wasn't explicitly mentioned by trainees in reflecting on the pandemic's impact on their core needs, although there was some reflection on the actions of those in leadership roles:

> 'There was a kind of top-down decision that everyone coming through the assessment unit would have, would either be full escalation, or they would have a DNACPR [Do Not Attempt CardioPulmonary Resuscitation], it was quite binary.' (T3W)

They described that 'they [hospital management] told us we've got ours [rest area] til March' (T3W) and expressed a lack of appreciation due to such decisions:

> 'Why don't they care about us until there's a pandemic happening…it's like we don't matter anymore.' (T6W)

Competence

Workload

The complexities of dealing with COVID-19 patients added to the workload for internal medicine trainees:

> '…huge pressure to move patients away from the screening ward as soon as they become negative or positive, depending on where they should go…sometimes there were pressures from bed management for us to sort that out' (T2W)

In addition to the volume of patients and the perception that 'upstairs was catching fire because of COVID' (T42W), the increased workload associated with frequently-changing protocols was hard to keep up with:

> 'I know you have got a protocol. The protocol is probably now out of date, because it's the next week, and things have got a lot worse' (T44W)

Trainees also reflected a lack of variety in their workload and a perception of a lack of consideration of broader differential diagnoses:

> 'But people became lazy…so they might have thought they were short of breath, but actually they were in heart failure, and the person just said, they're COVID.' (T27W)

Management and supervision

Through recognition that the pandemic was a strain on everyone, some trainees described informal support from registrars:

> 'The regs [registrars] took initially…two or three trainees in a group… just to update and see if there's any problems at work' (T59W)

In general, IM trainees didn't describe a lack of supervision in spite of the pressures of the pandemic, but there were some individual trainees who found support lacking:

> 'I've just been met with, "Well done, we're sorry". I appreciate sometimes it's unavoidable... we don't feel particularly well supported' (T65W)

Learning, training and development

Due to the COVID-19 pandemic, many training sessions were either cancelled or changed to a virtual format. Due to the virtual nature of the sessions, some trainees found themselves accessing the online content from the hospital which hindered their opportunities for protected training time:

> 'It's meant to be protected, but it's not protected because you're on the ward doing it and it's just a nightmare.' (T62W)

However, some trainees found that they were supported to attend educational sessions remotely to obtain the 'bleep-free, interruption-free time' (T62W):

> 'We will be allowed to go home in the afternoon, for teaching in the afternoon and do it from home.' (T65W)

Trainees' opportunities to attend outpatient clinics as part of their training and curricular requirements were diminished:

> 'Obviously with COVID especially, getting yourself sort of slotted into a face to face clinic…it's really hard to arrange.' (T28W)

In addition, their Membership of the Royal College of Physicians (MRCP) exams were cancelled or rearranged and the challenges of studying were a cause for concern:

> 'The COVID situation does concern me…feeling quite so tired sometimes, you know, how am I going to have the energy to revise for it? So it is a worry.' (T11I)

Discussion

This study utilised a combined observational and interview approach to explore the impact of the COVID-19 pandemic on IM trainees' core workplace needs. It highlights the way in which the COVID-19 pandemic has influenced every aspect of IM trainees' core workplace needs.

The GMC report, *Caring for doctors, Caring for patients* outlined immediate steps and calls to action in 2019, some of which were fortuitously expedited in response to the COVID-19 pandemic.[16] The action plan included an aim to give doctors control over their working lives, including providing minimum requirement work conditions.[16] The need to provide doctors with rest facilities and access to food in healthcare organisations has previously been outlined in the BMA's Fatigue and Facilities charter in 2018, and the COVID-19 pandemic brought some of these recommendations to fruition.[20] Hospitals created dedicated rest areas, some supported by Project Wingman with 'hot drinks on tap'.[21] IM trainees reflected on how 'having a non-clinical area to take breaks in' positively impacted their wellbeing during the pandemic, and also discussed the negative impact on their sense of value in the organisation when such facilities were subsequently removed. The action plan from the GMC report also aimed to help doctors feel valued, respected and supported, and have a sense of belonging.[16] At the outset of the pandemic, the sense of identity of 'healthcare worker' was emphasised and the associated camaraderie fostered some improved intergroup relations, with trainees describing a sense of being a 'cohesive team'. We must now consider how we can maintain this rhetoric and sense of teamwork in the longer term, when not relying on the initial phases of disaster to facilitate cohesion. The GMC report highlights a need for compassionate leadership with shared values, the benefits of which have now been emphasized through the trainee voices in this study.[16] Others have echoed the need to build on the learning from the pandemic, in particular drawing from positive examples of adapting in response to crisis and team building with peer support in challenging times.[22,23]

Trainees described other core needs that were neglected, with a loss of control over working lives and rotas. The uncertainty the COVID-19 pandemic brought, both clinically and relating to work conditions, was a source of significant anxiety for trainees. The anxiety of healthcare workers in the context of the pandemic has been echoed throughout the world.[24] The loss of control and uncertainty has been experienced by society more widely with mass quarantine and associated mental health sequallae.[25] It is therefore not surprising that uncertainty was

an addition to the original framework described in this context, confirming the importance of a sense of control over our personal wellbeing. Other negative impacts were that of reduced training opportunities, particularly clinics and protected non-clinical teaching time. The COVID-19 pandemic experience of trainees has underlined the importance of the three areas of core needs highlighted in the GMC report.[16] The trainees' reflections support the need, more so now than ever, for the initial calls to action to continue to be implemented as we navigate our working lives in adjusted workplace in the wake of the pandemic.

Study strengths, limitations and future work

This study accessed a national sample of internal medicine trainees, providing an illuminating overview of the experiences of internal medicine trainees in Scotland. This study explores the perspectives of internal medicine trainees, but we know the COVID-19 pandemic has caused disruption across various specialties.[22,26–29] The ABC framework applies to all trainee doctors and should be of interest and value to all trainees and trainers.[16] Future studies could focus on interventions to support the autonomy, belonging and competence of doctors, particularly reviewing the calls to action from the initial GMC report in 2019, and the progress made during the turbulent year following the report's publication.[16]

Conclusions

Utilising the ABC of doctor's core needs as a conceptual framework for this study highlighted the impact of the COVID-19 pandemic on all domains for IM trainees in Scotland.[16] It has highlighted an opportunity to foster the renewed sense of camaraderie amongst healthcare teams, whilst rebuilding work conditions to support autonomy and competence by supporting workplace learning for trainees.

Word count

3211

Author contributions

JK led the conception and the design of the study, data collection, analysis and interpretation of the data and the drafting and the revision of the manuscript. AH and VT contributed to the conception and design of the study, the analysis and interpretation of the data and the

drafting and the revision of the paper. JP and FF contributed to the conception and the design of the study, data collection and revision of the paper. All authors (JK, AH, JP, FF and VT) approved the final manuscript for publication and have agreed to be accountable for all aspects of the work.

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Competing interests

None declared

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ABC of doctors' core needs	Subcategories	Description	Suggested calls to action in 2019
Autonomy/ Control	**Voice, influence & fairness**	Ability for doctors to influence the culture of healthcare organisations	Clinical leaders should gather feedback from doctors about organisational delivery
	Work conditions	Provision of basic facilities such as places to rest and access to food and drink	Implement the British Medical Association (BMA) Fatigue and Facilities charter[20]
	Work schedule & rotas	Providing work schedules that enable appropriate breaks, allow communication in advance and ensure flexibility	Implement the BMA and NHS Employers' Good Rostering Guide[19]
Belonging	**Team working**	Supporting effective multidisciplinary team working with shared purpose	Healthcare organisations should review team working with teams meeting regularly to review performance
	Culture & leadership	Healthcare environments with nurturing culture and compassionate leadership	Implement programme of compassionate leadership with mechanisms to feedback
Competence	**Workload**	Ensuring appropriate workloads with doctors performing at top of competence	Develop alternative roles and review technologies to ensure efficiency
	Management & supervision	Ensuring doctors have effective support and supervision in their roles	Ensure those in management/supervision roles have dedicated time within job plans
	Learning, training & development	Supporting doctors with appropriate learning and training opportunities	Review impact of allocation of training impacts and address administrative burdens on doctors

Table 1: ABC of doctors' core needs as outlined in Caring for doctors, Caring for patients[16]

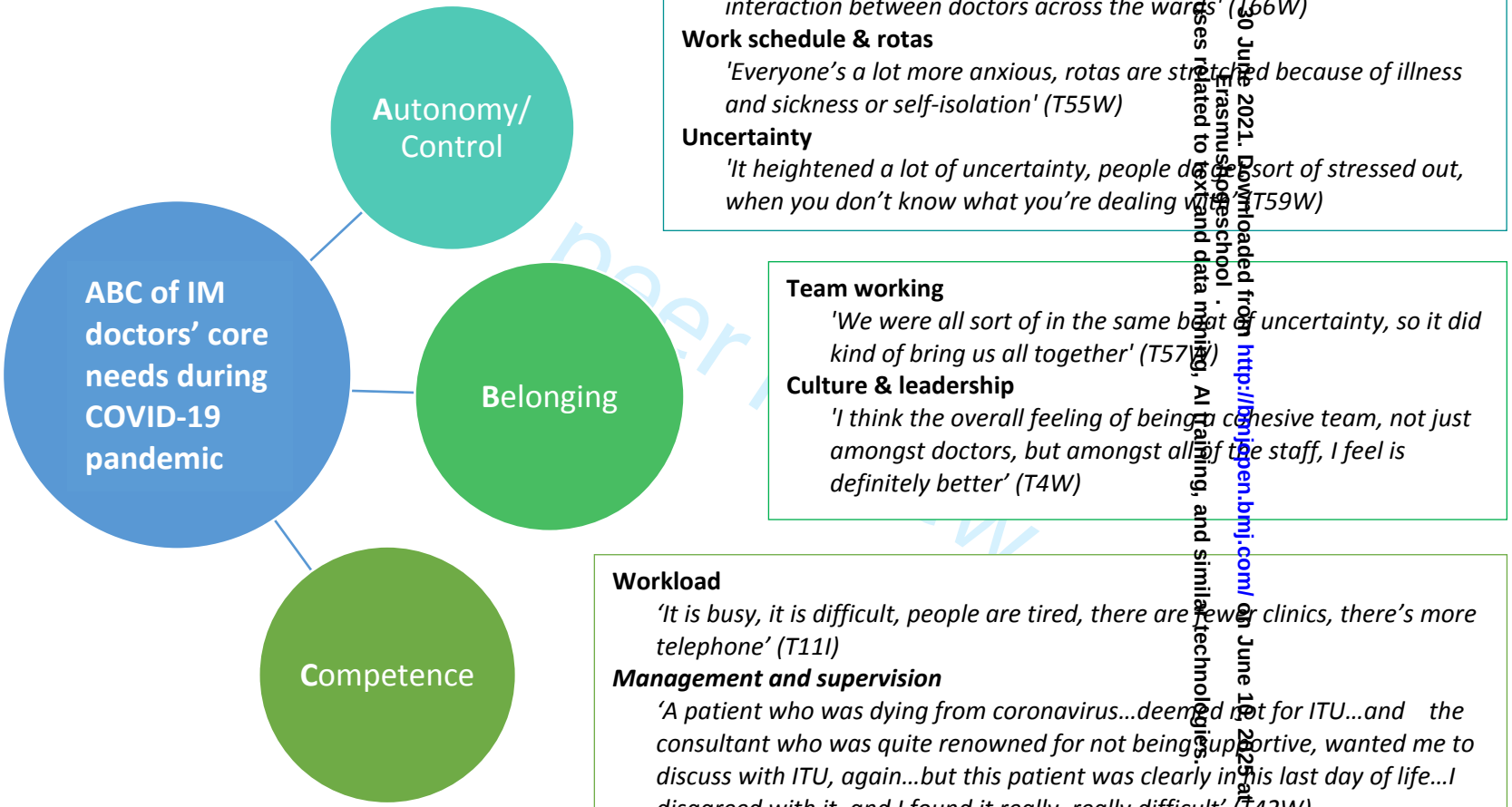

Figure 1: ABC of IM trainee doctors' core needs during COVID-19 pandemic with illustrative quotes

No.	Topic	Item
	Title and abstract	
S1	Title	Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended
S2	Abstract	Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions
	Introduction	
S3	Problem formulation	Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement
S4	Purpose or research question	Purpose of the study and specific objectives or questions
	Methods	
S5	Qualitative approach and research paradigm	Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale[b]
S6	Researcher characteristics and reflexivity	Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability
S7	Context	Setting/site and salient contextual factors; rationale[b]
S8	Sampling strategy	How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale[b]
S9	Ethical issues pertaining to human subjects	Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues
S10	Data collection methods	Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale[b]
S11	Data collection instruments and technologies	Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study
S12	Units of study	Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)
S13	Data processing	Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/deidentification of excerpts
S14	Data analysis	Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale [b]
S15	Techniques to enhance trustworthiness	Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale[b]
	Results/findings	
S16	Synthesis and interpretation	Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory
S17	Links to empirical data	Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings
	Discussion	
S18	Integration with prior work, implications, transferability, and contribution(s) to the field	Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/ generalizability; identification of unique contribution(s) to scholarship in a discipline or field
S19	Limitations	Trustworthiness and limitations of findings
	Other	
S20	Conflicts of interest	Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed
S21	Funding	Sources of funding and other support; role of funders in data collection, interpretation, and reporting

[a]The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

[b]The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

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Exploring the impact of the COVID-19 pandemic on doctors' core workplace needs: a qualitative study of internal medicine trainees in Scotland

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Exploring the impact of the COVID-19 pandemic on doctors' core workplace needs: a qualitative study of internal medicine trainees in Scotland

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Abstract

Objectives This study aimed to explore how the COVID-19 pandemic has impacted the workplace core needs of internal medical (IM) trainees in Scotland.

Design This qualitative study utilised an observational approach of interprofessional workshops combined with subsequent individual interviews with IM trainees. Workshops and interviews were audio-recorded, transcribed verbatim and analysed utilising NVivo software. Template analysis was used with the ABC (Autonomy/control, Belonging and Competence) of doctors' core needs outlined in the 2019 General Medical Council (GMC) report *Caring for doctors, caring for patients* as a conceptual lens for the study.

Setting The national IM boot camp in Scotland includes a two hour interprofessional workshop which is trainee-led and explores current challenges in the workplace, including the impact of the pandemic on such relationships

Participants Twelve workshops, involving 72 trainees, were included with ten trainees taking part in the subsequent interview process. Trainees representing all four regions in Scotland were involved.

Results Trainees described all core needs having been impacted by the pandemic. They described a loss of autonomy with emergency rotas but also through a pervasive sense of uncertainty. The data revealed that work conditions improved initially with additional resources which have since been removed in some areas, affecting trainees' sense of value. Analysis found that belonging was affected positively in terms of increased camaraderie but also challenged through inability to socialise. There were concerns regarding developing competence due to a lack of teaching opportunities

Conclusions Utilising the ABC of doctor's core needs as a conceptual framework for this study highlighted the impact of the COVID-19 pandemic on all domains for IM trainees in Scotland. It has highlighted an opportunity to foster the renewed sense of camaraderie amongst healthcare teams, whilst rebuilding work conditions to support autonomy and competence.

Strengths and limitations of this study

- This qualitative study explores the perspectives of a national cohort of internal medicine trainees during the COVID-19 pandemic, the impact on whom has been less represented to date.
- The data analysis incorporated a framework applicable to all doctors, the ABC of core workplace needs, increasing transferability of results to doctors training in other specialties.
- In-depth interviews and observational data from an interprofessional workshop offered a unique insight into the personal experiences and reflections of medical trainees.
- The study is limited to the reflections of internal medicine trainees and therefore does not directly capture the disruption that is likely to have been encountered across all specialties.

Introduction

It is well recognised that the COVID-19 pandemic has impacted the training of junior doctors, with over 80% of doctors in training reporting disruption caused by the pandemic in their General Medical Council (GMC) national training survey in 2020.[1] The pandemic has resulted in increased demand on the National Health Service (NHS), with the United Kingdom (UK) being one of the most affected countries in Europe.[2] The combination of disrupted training and increased patient demand have caused concern relating to the wellbeing of trainees.[3,4] The introduction of social distancing guidance and personal protective equipment has altered the workplace environment for all healthcare workers in the UK. There have been some 'silver linings' described with new virtual training methods and a transition to online outpatient clinics.[5] There is evidence of innovation and adaptability, finding opportunity in crisis during the pandemic, which indicates an ability to make positive change which should be harnassed for the future.[6–10]

Comparisons have been drawn between the impact of the COVID-19 pandemic and the various phases of disaster with associated emotions.[11] This includes a heroic phase at the outset with a honeymoon phase of community cohesion and related peaks of emotional highs.[12,13] This is followed by a period of disillusionment where emotions are are low and gradually improve with progress into a reconstruction phase.[14,15] The phase of reconstruction involves taking responsibility for rebuilding with a new beginning and it is crucial that we understand the challenges and opportunities navigated throughout the pandemic in order to do this successfully. In rebuilding, this includes appreciating the

ways in which the workplace changes and training impacts have affected trainees, both positively and negatively, so as to move forward effectively.

In considering the needs of trainee doctors in the UK, the GMC have described the ABC of doctors' core needs in their 2019 report *Caring for doctors, Caring for patients*.[16] This report set out to review the factors that impact on the mental health and wellbeing of doctors, with the aim of improving the culture and working environments for doctors. The core needs identified include Autonomy/control, Belonging and Competence with subcategories therein and descriptions as outlined in Table 1.[16] This key report discussed immediate steps and calls to action with the intention of improving UK healthcare environments to support doctors in caring for patients.[16] Since its publication, however, the COVID-19 pandemic has transformed the clinical workplace unexpectedly and we must consider how these changes have impacted the core needs identified in the GMC report. Throughout the heroic and honeymoon phase it is possible that some of the suggested changes from the GMC report were accelerated, whilst we know that some of them will have been postponed, and others likely neglected. Revisting these core needs after the disruption caused by the pandemic is an opportune time to address what we can learn from the pandemic going forward.

This study aimed to explore the ways in which COVID-19 pandemic has impacted the core workplace needs of internal medicine (IM) trainees in Scotland.

Methods

Context

IM Training is a three year training programme for junior doctors in the United Kingdom wishing to pursue a career in medical specialties. In Scotland, simulation training is integrated into each year of the training programme which includes a three-day IM boot camp within the first year. Between August and December 2020, the IM boot camp was delivered to 90 IM trainees at the Scottish Centre for Simulation and Clinical Human Factors. IM trainees participated in a three-day boot camp which included an interprofessional communication workshop that explored challenges and coping strategies. Trainees took part in the two-hour workshop in groups of six with two facilitators (JP and FF). The discussion was trainee-led covering areas of particular challenge over recent months, including the effects of the COVID-19 pandemic on their workplace experience.

Conceptual framework

The conceptual framework for this study is the ABC of doctor's core needs defined as Autonomy/control, Belonging and Competence, as described in Table 1.

ABC of doctors' core needs	Subcategories	Description	Suggested calls to action in 2019
Autonomy/ Control	**Voice, influence & fairness**	Ability for doctors to influence the culture of healthcare organisations	Clinical leaders should gather feedback from doctors about organisational delivery
	Work conditions	Provision of basic facilities such as places to rest and access to food and drink	Implement the British Medical Association (BMA) Fatigue and Facilities Charter[17]
	Work schedule & rotas	Providing work schedules that enable appropriate breaks, allow communication in advance and ensure flexibility	Implement the BMA and NHS Employers' Good Rostering Guide[18]
Belonging	**Team working**	Supporting effective multidisciplinary team working with shared purpose	Healthcare organisations should review team working with teams meeting regularly to review performance
	Culture & leadership	Healthcare environments with nurturing culture and compassionate leadership	Implement programme of compassionate leadership with mechanisms to feedback
Competence	**Workload**	Ensuring appropriate workloads with doctors performing at top of competence	Develop alternative roles and review technologies to ensure efficiency
	Management & supervision	Ensuring doctors have effective support and supervision in their roles	Ensure those in management/supervision roles have dedicated time within job plans
	Learning, training & development	Supporting doctors with appropriate learning and training opportunities	Review impact of allocation of training impacts and address administrative burdens on doctors

Table 1: ABC of doctors' core needs as outlined in Caring for doctors, Caring for patients[16]

Ethical approval

This study received ethical approval from the NHS Education for Scotland ethics review board with reference number NES/Res/14/20/Med. All participants gave written consent for data collection and the publication of anonymised results. Participants were free to leave the study at any time without giving a reason.

Data collection

The first stage of this study utilised an observational approach, audio recording the workshops in which all participants had consented. This approach was chosen to gain insight into participants' accounts of experiences whilst not influencing their learning event.[19] Subsequently, consenting participants were contacted by email three to six months following their boot camp and invited to an individual interview via Microsoft Teams, conducted by JK, to further explore experiences. JK is an acute medicine doctor with eight years of postgraduate clinical training and experience of medical education research. Audio recordings of both workshops and interviews were anonymised and transcribed verbatim.

Data analysis

Transcripts were independently analysed by JK and AH using template analysis and utilising NVivo software. AH is a clinical fellow in medical education with eight years of postgraduate clinical training currently undertaking an doctoral research degree in medical education. In template analysis, a template based on prior research is applied and the initial template may be modified by the data with new codes added inductively.[20] This constructivist study utilised the GMC report's ABC of doctors' core needs as an initial coding framework.[16] JK and AH met on a regular basis and discussed each category of the framework in detail and compared coding. Disagreements on coding were discussed with reference to the ABC of doctors' core needs framework,[16] with final decisions on analysis made by JK. The resultant framework is therefore her conceptualisation of the framework produced by the interactions between JK, the research participants and her co-researchers.

Patient and public involvement

Patients and/or the public were not involved in the design, conduct, reporting or dissemination of this study

Results

Twelve workshops, involving 72 trainees, were included in the analysis. This represents the number of IM trainees present in workshops where all partipating trainees had consented. Workshops lasted two hours with trainees aged between 24 to 35 years, with 34 trainees identifying as female and 38 identifying as male. Trainees from all four regions of Scotland (West, South East, East and North) were included. Ten trainees took part in the subsequent interview process, including seven identifying as female and three identifying as male. Trainees were aged 24 to 35 years, again from all four regions in Scotland. Interviews lasted between 18 minutes and 35 minutes (average of 28 minutes).

Trainees described all core needs having been impacted by the pandemic, as summarised in Figure 1. Quotes taken from the workshops are indicated by a 'W' after the trainee code, and those taken from the interviews are indicted by an 'I'. The ABC framework and subheadings are described below.[16]

Autonomy/Control

Work conditions

Trainees reflected on some of the benefits that the COVID-19 pandemic brought to the work conditions:

> 'They employed a psychologist, they had a relaxation area, there was hot drinks on tap…I felt like it made life so much easier, because the care that was in place for staff just increased massively, and it was a really stressful time and no one knew what was happening but there were places you could go that were really nice, and it just felt so nice that the NHS was doing that.' (T5W)

They found that 'having a non-clinical area to take breaks in' (T3W) was very beneficial because 'if you have to go somewhere on the ward or unit to sit and have your lunch, people can just find you and you don't actually get that detachment' (T4W). However, some trainees felt undervalued as such designated areas had already been disbanded, or were planned to be. They found that 'it's when life goes back to more normal, it got lost a little bit' (T57W). Trainees recognised the importance of having appropriate rest areas as they reflected 'we need to be healthy too, working' (T6W).

Work schedules and rotas

Given the evolving pandemic, trainees found that 'shifts were changing and there was a lot of rota gaps' (T40I). The prolonged nature of the pandemic was taking its toll: 'certainly at the

start because there were these extra shifts that needed covered…I think in the first peak of COVID a lot of people volunteered for these shifts more regularly. I think a lot of people are getting fatigued and burnt out and the take up of it is less' (T61W). Their experience was not in keeping with the BMA and NHS Employer's Good Rostering Guide which was a key action point from the GMC report in 2019.[16,18]

Uncertainty

In contrast with the '*Voice, influence and fairness'* subheading of the ABC framework[16] within autonomy and control, whereby doctors can influence the culture of their healthcare organisations, the trainees described a resounding sense of uncertainty in relation to the COVID-19 pandemic. There was a loss of control due to the pervasive uncertainty, not only due to work conditions and rotas but due to the pandemic in general as 'it was a really stressful time, and no one knew what was happening' (T5W). This was particularly relevant in the initial stages:

> 'When COVID started, it wasn't clear what was going on…and we were obviously panicking.' (T44W)

There was uncertainty around the management of patients and changing protocols:

> 'Initial phases when there was a lot of uncertainty with protocols, it actually caused quite a lot of stress.' (T59W)

There was also concern around transmission inside and outside the workplace:

> 'Worried about spreading it…or worried about catching it...or worried about spreading it to their family or bringing it into the hospital.' (T55W)

Overall trainees reflected that the burden of uncertainty affected them in a negative manner.

Belonging

Team working

Trainees found there were challenges with team working in line with social distancing requirements as:

> 'You would always mix in the mess [doctors' common room] with all these people…I think with COVID you can't hang out with anyone anymore. We [got] told off for having lunch around two tables yesterday and even the opportunity to sit and relax with folk has disappeared.' (T3I)

The ability to get to know others was also impaired due to teaching sessions being cancelled or changed to virtual formats which 'is very impersonal' (T61W) and they found that 'the [reduced] ability to network and meet people has impacted my training'. In addition, the wearing of masks provided another physical barrier to building relationships:

> 'Not recognising people and working with people and there is anonymity, so you have got to make much more effort to introduce yourself to people…you are like "I don't know who that was and I wouldn't recognise them if I saw them again."'(T73I)

Some trainees reflected on integrating redeployed staff into teams and inter-team working of staff who do not usually work together:

> 'We had a lot of redeployed; I had a sexual health consultant, who shadowed me on a ward round which was a bit awkward and…there was a bit of a camaraderie, team effort and recognising each other's skills.' (T52I)

Culture and leadership

There were some positive changes to the culture and trainees described a sense of camaraderie within the workplace through facing the pandemic alongside other healthcare professionals:

> 'There is a bit more, everybody giving everyone an easier time. Everyone knows everyone is having a tough time, people are more forgiving as everybody is struggling a bit at the moment, the hospitals are in a bit of disarray, so they give each other an easier time.' (T73I)

In keeping with the honeymoon phase of disaster, there was a sense of community cohesion within the workplace:

> 'I think people are closer across these interprofessional groups, there's a recognition that maybe the less important things that would normally cause you to butt heads, what do they really matter?' (T65W)

Leadership wasn't explicitly mentioned by trainees in reflecting on the pandemic's impact on their core needs, although there was some reflection on the actions of those in leadership roles:

> 'There was a kind of top-down decision that everyone coming through the assessment unit would have, would either be full escalation, or they would have a DNACPR [Do Not Attempt CardioPulmonary Resuscitation], it was quite binary.' (T3W)

They described that 'they [hospital management] told us we've got ours [rest area] til March' (T3W) and expressed a lack of appreciation due to such decisions:

> 'Why don't they care about us until there's a pandemic happening…it's like we don't matter anymore.' (T6W)

Competence

Workload

The complexities of dealing with COVID-19 patients added to the workload for internal medicine trainees:

> '…huge pressure to move patients away from the screening ward as soon as they become negative or positive, depending on where they should go…sometimes there were pressures from bed management for us to sort that out' (T2W)

In addition to the volume of patients and the perception that 'upstairs was catching fire because of COVID' (T42W), the increased workload associated with frequently-changing protocols was hard to keep up with:

> 'I know you have got a protocol. The protocol is probably now out of date, because it's the next week, and things have got a lot worse' (T44W)

Trainees also reflected a lack of variety in their workload and a perception of a lack of consideration of broader differential diagnoses:

> 'But people became lazy…so they might have thought they were short of breath, but actually they were in heart failure, and the person just said, they're COVID.' (T27W)

Management and supervision

Through recognition that the pandemic was a strain on everyone, some trainees described informal support from registrars:

> 'The regs [registrars] took initially…two or three trainees in a group… just to update and see if there's any problems at work' (T59W)

In general, IM trainees didn't describe a lack of supervision in spite of the pressures of the pandemic, but there were some individual trainees who found support lacking:

> 'I've just been met with, "Well done, we're sorry". I appreciate sometimes it's unavoidable... we don't feel particularly well supported' (T65W)

Learning, training and development

Due to the COVID-19 pandemic, many training sessions were either cancelled or changed to a virtual format. Due to the virtual nature of the sessions, some trainees found themselves accessing the online content from the hospital which hindered their opportunities for protected training time:

> 'It's meant to be protected, but it's not protected because you're on the ward doing it and it's just a nightmare.' (T62W)

However, some trainees found that they were supported to attend educational sessions remotely to obtain the 'bleep-free, interruption-free time' (T62W):

> 'We will be allowed to go home in the afternoon, for teaching in the afternoon and do it from home.' (T65W)

Trainees' opportunities to attend outpatient clinics as part of their training and curricular requirements were diminished:

> 'Obviously with COVID especially, getting yourself sort of slotted into a face to face clinic…it's really hard to arrange.' (T28W)

In addition, their Membership of the Royal College of Physicians (MRCP) exams were cancelled or rearranged and the challenges of studying were a cause for concern:

> 'The COVID situation does concern me…feeling quite so tired sometimes, you know, how am I going to have the energy to revise for it? So it is a worry.' (T11I)

Discussion

This study utilised a combined observational and interview approach to explore the impact of the COVID-19 pandemic on IM trainees' core workplace needs. It highlights the way in which the COVID-19 pandemic has influenced every aspect of IM trainees' core workplace needs.

The GMC report, *Caring for doctors, Caring for patients* outlined immediate steps and calls to action in 2019, some of which were fortuitously expedited in response to the COVID-19 pandemic.[16] The action plan included an aim to give doctors control over their working lives, including providing minimum requirement work conditions.[16] The need to provide doctors with rest facilities and access to food in healthcare organisations has previously been outlined in the BMA's Fatigue and Facilities charter in 2018, and the COVID-19 pandemic brought some of these recommendations to fruition.[17] Hospitals created dedicated rest areas, some supported by Project Wingman, volunteer airline crew from across the UK, with 'hot drinks on tap'.[21] IM trainees reflected on how 'having a non-clinical area to take breaks in' positively impacted their wellbeing during the pandemic, and also discussed the negative impact on their sense of value in the organisation when such facilities were subsequently removed. The action plan from the GMC report also aimed to help doctors feel valued, respected and supported, and have a sense of belonging.[16] At the outset of the pandemic, the sense of identity of 'healthcare worker' was emphasised and the associated camaraderie fostered some improved intergroup relations, with trainees describing a sense of being a 'cohesive team'. We must now consider how we can maintain this rhetoric and sense of teamwork in the longer term, when not relying

on the initial phases of disaster to facilitate cohesion. The GMC report highlights a need for compassionate leadership with shared values, the benefits of which have now been emphasized through the trainee voices in this study.[16] Others have echoed the need to build on the learning from the pandemic, in particular drawing from positive examples of adapting in response to crisis and team building with peer support in challenging times.[22,23]

Trainees described other core needs that were neglected, with a loss of control over working lives and rotas. The uncertainty the COVID-19 pandemic brought, both clinically and relating to work conditions, was a source of significant anxiety for trainees. The anxiety of healthcare workers in the context of the pandemic has been echoed throughout the world.[24] The loss of control and uncertainty has been experienced by society more widely with mass quarantine and associated mental health sequallae.[25] It is therefore not surprising that uncertainty was an addition to the original framework described in this context, confirming the importance of a sense of control over our personal wellbeing. Other negative impacts were that of reduced training opportunities, particularly clinics and protected non-clinical teaching time. The COVID-19 pandemic experience of trainees has underlined the importance of the three areas of core needs highlighted in the GMC report.[16] The trainees' reflections support the need, more so now than ever, for the initial calls to action to continue to be implemented as we navigate our working lives in adjusted workplace in the wake of the pandemic.

Study strengths, limitations and future work

This study accessed a national sample of internal medicine trainees, providing an illuminating overview of the experiences of internal medicine trainees in Scotland. This study explores the perspectives of internal medicine trainees, but we know the COVID-19 pandemic has caused disruption across various specialties.[22,26–29] The ABC framework applies to all trainee doctors and should be of interest and value to all trainees and trainers.[16] Future studies could focus on interventions to support the autonomy, belonging and competence of doctors, particularly reviewing the calls to action from the initial GMC report in 2019, and the progress made during the turbulent year following the report's publication.[16]

Conclusions

Utilising the ABC of doctor's core needs as a conceptual framework for this study highlighted the impact of the COVID-19 pandemic on all domains for IM trainees in Scotland.[16] It has highlighted an opportunity to foster the renewed sense of camaraderie amongst healthcare

teams, whilst rebuilding work conditions to support autonomy and competence by supporting workplace learning for trainees.

Author contributions

JK led the conception and the design of the study, data collection, analysis and interpretation of the data and the drafting and the revision of the manuscript. AH and VT contributed to the conception and design of the study, the analysis and interpretation of the data and the drafting and the revision of the paper. JP and FF contributed to the conception and the design of the study, data collection and revision of the paper. All authors (JK, AH, JP, FF and VT) approved the final manuscript for publication and have agreed to be accountable for all aspects of the work.

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Data availability statement

Data are available on reasonable request. Raw transcripts of the data analysed in the study are available from the lead author

Competing interests

None declared

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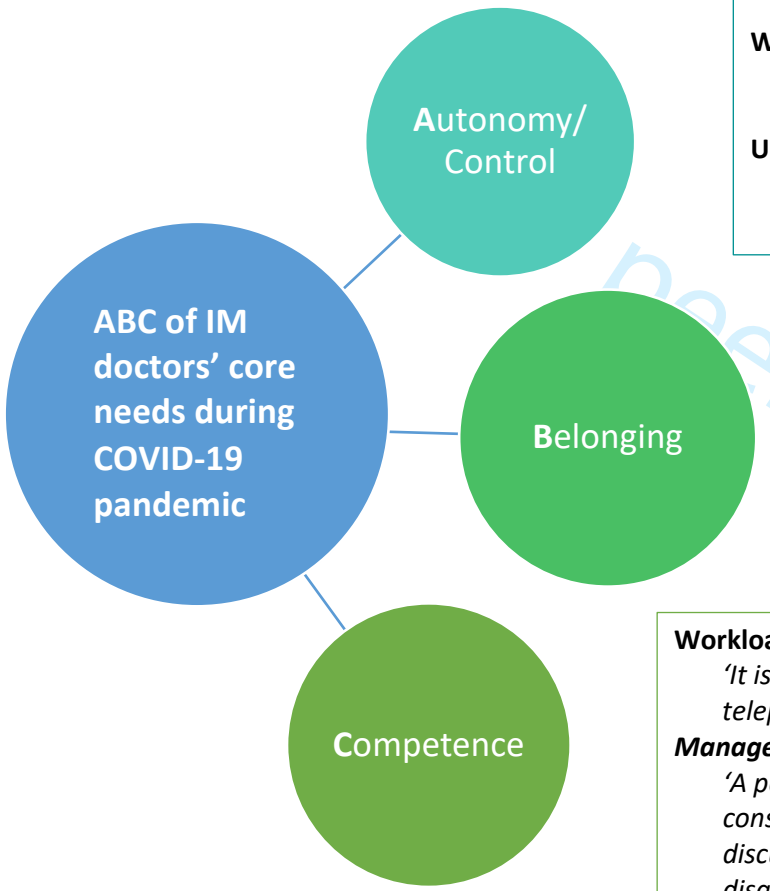
Figure legend

Figure 1: ABC of IM trainee doctors' core needs during COVID-19 pandemic with illustrative quotes



Work conditions

'They've taken away the mess now, because there's too much interaction between doctors across the wards' (T66W)

Work schedule & rotas

'Everyone's a lot more anxious, rotas are stretched because of illness and sickness or self-isolation' (T55W)

Uncertainty

'It heightened a lot of uncertainty, people do get sort of stressed out, when you don't know what you're dealing with' (T59W)

Team working

'We were all sort of in the same boat of uncertainty, so it did kind of bring us all together' (T57W)

Culture & leadership

'I think the overall feeling of being a cohesive team, not just amongst doctors, but amongst all of the staff, I feel is definitely better' (T4W)

Workload

'It is busy, it is difficult, people are tired, there are fewer clinics, there's more telephone' (T11I)

Management and supervision

'A patient who was dying from coronavirus…deemed not for ITU…and the consultant who was quite renowned for not being supportive, wanted me to discuss with ITU, again…but this patient was clearly in his last day of life…I disagreed with it, and I found it really, really difficult' (T42W)

Learning, training & development

'Now you don't get time off [for teaching], you can barely manage the three hours' (T63W)

Standards for Reporting Qualitative Research (SRQR)*

http://www.equator-network.org/reporting-guidelines/srqr/

	Page/line no(s).
Title and abstract	
Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	Page 1
Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	Page 2
Introduction	
Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	Pages 3-4
Purpose or research question - Purpose of the study and specific objectives or questions	Page 4 lines 98-99
Methods	
Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	Page 5 lines 133-134
Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	Page 5 lines 128-129 and lines 134-135
Context - Setting/site and salient contextual factors; rationale**	Page 5 lines 102-111
Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	Page 5 lines 123-130
Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	Page 5 lines 118-120
Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	Page 5 lines 123-130

Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	Page 5 lines 123-130
Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	Page 6 lines 150-156
Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	Page 5 lines 129-130
Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	Page 5 lines 133-143
Techniques to enhance trustworthiness - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	Page 5 lines 138-139

Results/findings

Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	Pages 6-10 lines 158-294
Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	Pages 6-10 lines 158-294

Discussion

Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	Pages 10-11 lines 297-333
Limitations - Trustworthiness and limitations of findings	Pages 11 lines 336-339

Other

Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	Pages 13 lines 380
Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	Pages 13 lines 372-373

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014
DOI: 10.1097/ACM.0000000000000388