



Did the COVID-19 pandemic affect mental health, training progression, and fertility planning of obstetrics and gynecology trainees? A survey of London trainees

Ayanthi Gunasekera¹ , Lauren Berg¹, Hashviniya Sekar², Sayantana Patra-Das³, Sonji Clarke⁴ and Wai Yoong¹ 

¹Department of Obstetrics and Gynaecology, North Middlesex University Hospital, London, UK

²Department of Obstetrics and Gynaecology, Barnet General Hospital, Barnet, UK

³Department of Obstetrics and Gynaecology, Homerton University Hospital, London, UK

⁴Department of Obstetrics and Gynaecology, Guys and St Thomas NHS Foundation Trust, London, UK

Abstract

Purpose of Study: To assess impact of COVID-19 pandemic on mental wellbeing, workload, training progression, and fertility planning among London Obstetrics and Gynecology trainees.

Design: An anonymous survey comprising 41 peer-validated questions was sent to London trainees. Anxiety and depression were screened using Generalized Anxiety Disorder Questionnaire 7 (GAD 7) and Patient Health Questionnaire-9 (PHQ-9).

Results: One hundred and seventy-seven trainees completed the questionnaire, of whom 54% were aged 25–34 years, 43% were senior trainees (ST6-7), and 51% classified themselves as Black, Asian, and Minority Asian (BAME). Although the percentage of respondents with “moderate”/“severe” GAD 7 and PHQ-9 scores was two to three times that of UK population estimates, median GAD 7 and PHQ-9 scores were 7 and 6 (“mild”). Sixteen percent deferred their fertility plans and 26% of ST6-7 trainees changed their Advanced Training Skills Modules. Other issues raised ranged from lack of assistance with electronic portfolio, postponement of examinations, poor senior input for mental health, lack of debriefing for redeployed trainees and requests for deferment of annual reviews.

Conclusions: The pandemic has incurred an impact on mental health, training progression, and fertility planning of London trainees. With recommencement of nonemergency consultations and elective gynecology theater, alongside Royal College of Obstetricians and Gynecologists’ Recovery Blueprint to optimize learning opportunities, there is optimism that these challenges can be overcome. Trainers and trainees need to safeguard training opportunities and consider innovative forms of future learning, while anticipating potential effects of subsequent waves.

Key words: anxiety, COVID-19, depression, fertility, mental health, obstetrics and gynecology trainees, training progression.

Introduction

The World Health Organization (WHO) recognized novel coronavirus (SARS-CoV-2) as a pandemic on

March 11, 2020 and North London maternity units were among the first in the United Kingdom to report maternal COVID-19 infection and possible vertical transmission in March 2020.^{1,2} According to

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Correspondence: Wai Yoong, Department of Obstetrics and Gynaecology, North Middlesex University Hospital, London N18 1QX, UK.

Email: waiyoong@nhs.net

the WHO Coronavirus Dashboard (as of July 29, 2021), there were over 195 million cases worldwide, with approximately 5 million originating from the United Kingdom.² Furthermore, it was identified early in the pandemic that certain groups of people were more at risk of severe illness: a disproportionate number of black, Asian, and Minority Asian (BAME) healthcare personnel, for instance, had been critically affected by the condition.³

In a bid to divert resources, over half of all Obstetrics and Gynecology (O&G) trainees in the United Kingdom⁴ were redeployed to support front line specialties such as Core Medicine and Accident & Emergency—during this time, resident O&G consultants and staff grade doctors had to deliver essential maternity and gynecology services. The full impact of this redeployment, together with amendments to standard maternity care, have been analyzed,⁴ but the effect on training, completion on competencies, deferment of Annual Reviews of Competencies Progression (ARCP) and Certification of Completion of Training (CCT) date, as well as on trainees' mental well-being is still unfolding. A recent Royal College of Obstetricians and Gynecologists (RCOG) survey⁴ also reported less adherence to the junior doctors' contract (due to increasing shift frequency) in order to accommodate emergency cover, as well as a reduction in training opportunities noted by 82% of O&G trainees.

Our specialty has had to face exceptional disruption and workload pressures during the government-imposed lockdowns and there is increasing interest in the effect of the COVID-19 pandemic on mental well-being and progression in training programs of O&G trainees in the United Kingdom and worldwide.

Shah et al. recently shared their data on how the SARS-CoV-2 pandemic exerted an enormous strain on the mental health of O&G doctors in the United Kingdom,⁵ while Bitonti et al.⁶ revealed that diversion of workforce into emergency care had led to a suspension of O&G training in certain program centers in Italy. The effect of the pandemic on physician burnout is also well known,⁷ but there is new evidence to indicate that burnout symptoms may be surprisingly more prevalent among low COVID exposure trainees in specialties such as O&G and orthopedics, compared to front line pandemic staff in emergency or respiratory medicine,⁸ possibly as a result of better pastoral care in the latter groups. O&G trainees, for example, had reported 13% higher risk of burn out in 2021 compared to 2019.⁹

The authors have therefore set out to assess the impact of COVID-19 on London trainees, assessing the following issues:

- a. the mental well-being
- b. workload
- c. training progression of O&G trainees possible effects on
- d. fertility planning

Methodology

An anonymous online survey consisting of 41 peer-validated questions was sent electronically to O&G specialist trainees (STs) within the London deanery. Initial nonresponders were reminded by email after 2 weeks and data were collected over a 6-week period commencing September 2020. Informed consent was implied by completion of the questionnaire and only fully completed questionnaires were analyzed by the authors. Specialty training refers to the residency pathway in the United Kingdom through which doctors become accredited in a given specialism, after which they are eligible to apply for Consultant posts. Obstetrics and gynecology STs must complete 7 years (i.e., ST1-7) of full-time equivalent specialist training program, proving competency annually along the way, in order to receive their Certificate of Completion of Training (CCT) in obstetrics and gynecology.

This cross-sectional survey was facilitated by the London School of Obstetrics and Gynecology. The survey offered a “snapshot” of opinions and practices encompassing the following subsections:

Section 1: Demographic data including age, gender, ethnicity, stage of training, partner's employment status, redeployment during the pandemic, and the availability of PPE.

Section 2: Antibody testing.

Sections 3 and 4: Reproductive health among trainees during the pandemic.

Section 5 and 6: BAME-specific questions relating to risk during the pandemic and the impact on training.

Section 7: Mental health screening for anxiety and depression using Generalized Anxiety Disorder Questionnaire 7 (GAD 7) (none: 0–5; mild: 6–10; moderate: 11–15; severe: 16–21)¹⁰ and Patient Health Questionnaire-9 (PHQ-9) (none: 0–4; mild: 5–9; moderate: 10–14; moderately severe: 15–19; severe: 20–27),¹¹ respectively. Responders who feel that they needed

support for anxiety and depression were invited to approach their respective training program directors (TPDs).

Section 8: Specific to ST6-7 trainees with enquiries relating to how the pandemic has affected their training.

The survey was designed as part of trainees' feedback and mental health screening during the pandemic and ethics approval was not required.

Results

One hundred and seventy-seven trainees completed the survey.

Sociodemographics

One hundred and fifty out of 177 of the respondents were female (85%). Age and level of training distribution are listed as Table 1: 97 (54%) were aged between 25 and 34 years and (43%) respondents were senior trainees (ST6-7).

BAME and related risk assessment

Of the respondents, 90 (51%) trainees classified themselves as BAME according to the Office of National Statistics definition.¹² Of these, 83 (47%) considered themselves to be at a higher risk of developing severe COVID-19 symptoms but only 44 (49%) were invited to complete a work-based risk assessment.

TABLE 1 Sociodemographics of respondents ($n = 177$ ST1-7 trainees)

	Number of respondents (/177)	%
Gender		
Female	150	85
Male	27	15
Age		
25–34 years	97	55
35–44 years	76	43
45–54 years	4	2
Grade		
ST 1–2	34	19
ST 3–5	67	38
ST 6–7	76	43
Ethnicity		
White	85	49
Asian	50	28
Black	15	8
Mixed	12	7
Other	15	8

Mental well-being

Eighty-five of 177 (48%) respondents reported that the pandemic affected their mental state, leading to difficulties at work, at home or with their ability to interact with people. In this study, GAD 7 and PHQ-9 questionnaires were used respectively to assess levels of anxiety and depression among the trainees. Reassuringly, of the 177 trainees, 79% and 73% respectively had either “no” or “mild” symptoms when scored for GAD 7 and PHQ-9: the overall median GAD 7 and PHQ-9 scores for the 177 respondents were 7 and 6 (“mild”; see Section 2).

Nine percent ($n = 17$) of respondents had “severe” GAD 7 scores and 4% ($n = 8$) scored “severe” on the PHQ-9, with all eight “severe” scores on the PHQ-9 also recording “severe” on the GAD 7. The design of the survey meant that these affected individuals remained anonymous and a reminder email was sent to all 177 respondents, encouraging those with mental health issues to contact their respective TPDs.

Among the general population in the United Kingdom, 7% suffer with significant anxiety while 4% have significant depression.¹³ In this study, 37 out of 177 (20.9%) respondents had “moderate” or “severe” GAD 7 scores, almost three times that of UK population estimates, while 16/177 (9%) of all respondents had “moderately severe” or “severe” PHQ-9 scores compared to 4% of general UK population.

The severity of GAD 7 and PHQ-9 scores classified by year of training (ST 1–2, 3–5, and 6–7) are shown in Tables 2 and 3. When analyzed by year of training, 11.8% of ST1-2 trainees had GAD 7 scores suggesting “severe” anxiety symptoms compared to 10.3% of ST3-5 and 8% among ST6-7. However, within this “severe” group, median GAD 7 for ST 1–2, 3–5, and 6–7 were not significantly different between the three groups (18.5 vs. 20 vs. 17.5, $p = 0.7$, Kruskal–Wallis). When screening for depressive symptoms, 5.3% of ST6-7 had “severe” PHQ-9 scores compared to 2.9% at ST1-2 but the median scores for the ST 1–2, 3–5, and 6–7 in this “severe” group were also statistically similar (23 vs. 23 vs. 20.5, $p = 0.49$, Kruskal–Wallis). Overall, there was no statistically significant difference between the median composite GAD 7 (7 vs. 7 vs. 7, $p = 0.29$, Kruskal–Wallis) and PHQ-9 scores (7 vs. 5 vs. 6, $p = 0.5$, Kruskal–Wallis) for ST 1–2, 3–5, and 6–7 respondents. The data are presented in Figures 1 and 2.

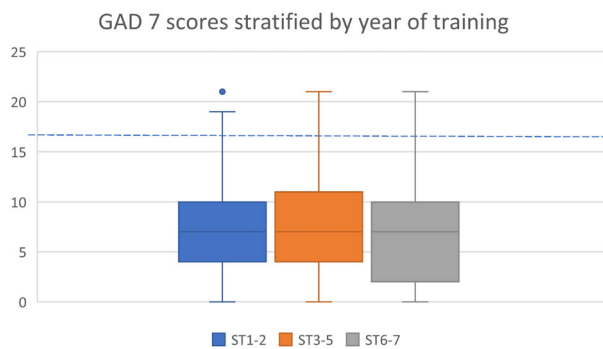
While reassuring, the numbers in the “severe” groups are probably too small for meaningful extrapolation.

TABLE 2 Level of anxiety (GAD-7) stratified by year of training ($n = 177$ in total)

GAD 7	None	Mild	Moderate	Severe	Total	% Severe
ST 1–2	13	16	1	4	34	11.8
ST 3–5	23	26	12	7	68	10.3
ST 6–7	30	32	7	6	75	8

TABLE 3 Level of depression (PHQ-9) stratified by year of training ($n = 177$ in total)

PHQ-9	None	Mild	Moderate	Moderately severe	Severe	Total	% Severe
ST 1–2	11	14	7	1	1	34	2.9
ST 3–5	31	24	7	3	3	68	4.4
ST 6–7	29	21	17	4	4	75	5.3

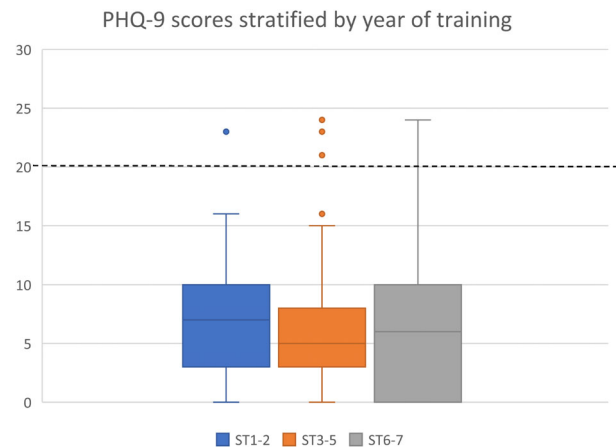
**FIGURE 1** Box and whiskers plot of GAD 7 scores and year of training (ST 1–2, 3–5, and 6–7). The horizontal unbroken line in the box denotes median value. Scores above the broken line denotes “severe” (>16)

Of the respondents who had “severe” GAD 7 scores ($n = 17$, 9.6%), nine trainees identified themselves as BAME, of which four had unemployed partners. Of these nine respondents, seven (78%) felt that they did not have adequate support and resources to cope with the pandemic.

Of the respondents who had “severe” PHQ-9 scores ($n = 8$, 4.5%), six trainees identified themselves as BAME, of which four stated that their partners were unemployed. Of these six BAME respondents, five (83%) felt that they did not have adequate support and resources to cope with the pandemic.

Workload and exposure/protection

Thirty-five respondents (20%) were redeployed from O&G to COVID duties during the first wave of the pandemic, of whom 19 (54%) were ST1-2 trainees. Only 28 (16%) respondents were confident that they had adequate support and resources to cope with the pandemic. Ninety (51%) trainees felt that the PPE

**FIGURE 2** Box and whiskers plot of PHQ-9 scores and year of training (ST 1–2, 3–5, and 6–7). The horizontal unbroken line in the box denotes median value. Scores above the broken line denotes “severe” (>20)

available at the start of the pandemic was inadequate. One hundred and forty-one (79%) were tested for COVID-19 antibodies (either due to symptoms or exposure), of which 30 (20%) tested positive for antibodies.

Training issues

Forty-six respondents (26%) from our study agreed that the disruption to training had led them to changing their future career plans. 26 (20%) ST6-7 trainees reported changing their Advanced Training Skills Modules (ATSMs), as a consequence of alterations in caseload and working patterns, particularly for gynecology and surgical-based ATSMs. A further 13 (10%) were undecided and were contemplating changes at the time of the survey. Less than half of the respondents (49%) felt well supported at a local level by

BOX 1. EXAMPLES OF FREE TEXT COMMENTS FROM TRAINEES

Need for Deanery support with electronic portfolio.

Need for clear guidance on training progression, achieving operative competencies and starting ATSMs.

Lack of debriefing for deployed trainees, especially those to Intensive Care Units.

Need for a support group for trainees having delayed CCT.

Lack of updated guidance on managing COVID in pregnant women.

Need for clearer guidance regarding ARCPs and unpressurised extensions to paperwork in recognition of huge change of workload and psychological/personal impact of COVID 19.

A surprising reduction of undermining and bullying behavior.

their educational supervisors, college tutors as well as by the Deanery and RCOG during the pandemic. Box 1 highlights the free text comments submitted by respondents relating to changes in resources, education, and training opportunities during the pandemic.

Reproductive health

Among the respondents, 29 (16%) reported deferring their pregnancy as a result of the pandemic, citing training issues and uncertainties about exposure if they conceived. Eleven trainees were already pregnant at the time of the survey: five were in the first trimester, three in the second trimester, and three in the final trimester. Five (45%) trainees felt reassured by the RCOG pregnancy guidance available but seven (64%) were worried specifically about vertical transmission. Nine (81%) pregnant trainees were “shielding” and felt that they were well supported while working from home.

Discussion

The COVID-19 pandemic gave rise to one of the fastest and most significant reconfiguration of services, capacity, and staffing in the history of the National Health Service (NHS).¹⁴ We present a “snapshot” of the socioeconomic and psychological consequences of the pandemic on trainees in London and

record the challenges to workload and interruption to training.

Our data on mental well-being indicate that there were three times as many ST1-7 trainees with moderate or severe anxiety (GAD 7) compared to UK population estimates (20.9% vs. 7%). Similarly, trainees were twice as likely to have moderately severe and severe depression (PHQ-9) compared to the general UK population (9% vs. 4%). However, between 70% and 80% of trainees surveyed reported either “no” or “mild” symptoms when assessed and the median GAD 7 and PHQ-9 scores in our cohort were 7 and 6, respectively (classified as “mild”). There were a few outliers with composite GAD 7 scores of >16 and PHQ-9 scores of >20 but as the survey was anonymous, the authors were not able to contact them directly. Instead, a summary of the mental well-being data was sent to all London deanery trainees and sign-posted resources (including contact details of the senior author) were available for confidential help. Our use of GAD 7 and PHQ-9 questionnaires provide a more comprehensive screening of anxiety and depressive symptoms compared to the shorter GAD 2 and PHQ-2 used by Shah et al⁵; nevertheless, our data on anxiety and depression corroborate the conclusions stated in their 2020 study on the effect of COVID-19 on the mental health of UK-based O&G doctors. Our study also resonates with the global findings from the British Medical Association’s survey (of 7000 responses and 2000 personal accounts) on how the high levels of stress, burnout, emotional distress, and fatigue further increased during the pandemic.¹⁵

Disruption to training during the pandemic led to a third of trainees having to change their future plans and factors alluded to included deskilling after long periods without gynecology operating, the inability to take out of program experience (OOPE) to pursue specialist skills and delays to fertility plans which could impact future goals. Twenty percent of senior trainees had changed their ATSMs as a direct result of changes in caseload and working patterns, as well as reduced exposure to surgery. Cancellation of elective surgical lists and clinics, mandatory periods of self-isolation, changes in rota patterns and redeployment during the pandemic are the main contributors cited for the disruption to training schedules. While many trainees felt supported during this time, nearly 50% of respondents were unhappy about issues ranging from lack of assistance with their electronic portfolio, postponement of Membership examinations, unclear

advice on training progression if ATSMs could not be completed, poor senior input for mental health and well-being, lack of debriefing for redeployed trainees and variation in PPE guidance (Box 1). An unexpected positive finding noted from the free text comments section of the survey was an absence of perceived workplace bullying and unprofessional behavior, attributed to increase in trainee camaraderie, closer working relationship with senior staff and robust support from educational supervisors during this period.

Advice on pregnancy and potential risks to mother and baby changed with emerging data and key updates are regularly published on the RCOG website.¹⁶ Eleven trainees were pregnant at the time of our study (five in the first trimester, three in the second, and three in the third) and the majority (72%) opined that they were well supported while “shielding” at home. Despite the known low rates of transplacental infection (approximately 3.2%),¹⁷ 64% of pregnant trainees were specifically worried about vertical transmission. The association with higher rates of fetal death, preterm birth, preeclampsia, and emergency cesarean delivery¹⁸ as well as the 1.5 times likelihood of intensive care unit (ICU) admission¹⁹ in pregnant women with Covid-19 are likely reasons why one in five respondents considered delaying fertility during this time.

We believe that this study, which collected data from 177 respondents from the London region, gives an accurate reflection of how the pandemic had impacted on mental well-being, workload, training progression, and fertility, as well as BAME and risk assessment issues for medical staff, across a broad section of ST1-7 O&G trainees. Notwithstanding the fact that the data pertained to a single region, our comprehensive study supports and adds to previously published works by Shah et al.⁵ and Mallick et al.,²⁰ who explored mental health matters and training challenges experienced by 99 and 127 UK-based O&G trainees, respectively. It is crucial that trainees affected, especially those close to CCT, are supported to achieve the necessary competencies and those hoping to pursue further interests are accommodated as a matter priority. The RCOG has recognized these gaps and deficiencies and has recently issued a recovery blueprint on how to optimize components of training in trainees’ daily clinical work, by increasing the delivery of learning opportunities and high-quality feedback.²¹

The pandemic is likely to incur a long-lasting effect on completion of training, mental well-being, and fertility planning of our trainees in the next 5 to 10 years.

By necessity, it has also led to the adoption of innovative technology (such as telemedicine and virtual conferences), an appreciation of the importance of wellbeing and restructuring to produce a more efficient service provision.²² The broad impact of the COVID-19 on the health and social care workforce has highlighted the importance of the strategy, as noted in the 2020–2021 NHS People Plan,²³ with its emphasis on health and well-being, effective management of workforce and elimination of discrimination. It will take some time to mitigate the chronic overwork of NHS and social care staff, which has been further exacerbated by the pandemic, but data from this study indicate that this must become a priority for trainers, Trusts, and the NHS.

Conclusions

The pandemic has incurred an impact on mental health, training progression and fertility planning of London trainees. With recommencement of non-emergency consultations and elective gynecology theater, alongside RCOG’s proposed Recovery Blueprint to optimize learning opportunities during trainees’ daily clinical work, there is confidence that these challenges can be overcome. Trainers and trainees need to safeguard training opportunities and consider innovative forms of future learning, while anticipating potential effects of subsequent waves.

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Conflict of interest

The authors declare that they have no known competing financial or personal relationships that could have appeared to influence the work reported in this paper.

Author Contributions

Ayanthi Gunasekera co-wrote the article, analyzed the data and performed literature search. Lauren Berg co-wrote the manuscript, constructed the tables and

figures, and performed literature search. Hashviniya Sekar co-wrote the manuscript, analyzed the data, and performed literature search. Sayantana Patra-Das initiated the study, designed the questionnaire, and peer reviewed the paper. Sonji Clarke peer reviewed the manuscript and supported the study. Wai Yoong initiated the study, designed the questionnaire, and co-wrote the article.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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