

# Mental Health amongst Obstetricians and Gynaecologists during the COVID-19 Pandemic: Results of a UK-wide study

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## Abstract

**Objective** To explore the impact of the COVID-19 pandemic on mental health of Obstetricians and Gynaecologists **Study Design** We performed a survey-based study from doctors working in the field of Obstetrics and Gynaecology across all Hospitals in United Kingdom. Surveyed information included demographics, past history of mental health conditions, screening for current symptoms of depression and anxiety, the significance of contributory factors and the effects of mental health on workplace behaviour. **Results** 207 doctors completed the survey. Of the respondents, 22.2% (n=46) had previously received treatment for a mental health condition. During the COVID-19 pandemic, O&G doctors as compared to UK-wide population estimate, reported significantly higher rates of both Major Depressive Disorder (15.94% versus 3.3%,  $p=0.023$ ) and Generalised Anxiety Disorder (24.64% versus 5.9%,  $p=0.044$ ). Sub-group analysis showed that anxiety was more common amongst female doctors as compared to males (27.5% versus 12.50%,  $p=0.047$ ). Respondents felt that the most significant factors for work-related changes to mental health was keeping up to date with frequently changing guidelines and protocols related to COVID-19. Only 38.65% of respondents agreed that they felt able to talk to colleagues about their mental health. **Conclusions** This is the first reported study that assesses the impact of COVID-19 on mental health amongst Obstetricians and Gynaecologists. Further research should focus on assessing if changes in the way rapidly changing guidelines and protocols are disseminated reduces the impact on mental health. Ongoing efforts are also needed to improve support networks and encourage normality around discussing mental health amongst doctors

## Introduction:

The mental health of healthcare professionals is an often-neglected subject, despite evidence to suggest that poor mental health has negative impacts not only on personal wellbeing but also reduced productivity, increase in sick leave, increased likelihood of human errors and lower patient satisfaction.<sup>11</sup> Anagnostopoulos F, Liolios E, Persefonis G, Slater J, Kafetsios K, Niakas D. Physician burnout and patient satisfaction with consultation in primary health care settings: evidence of relationships from a one-with-many design. *J Clin Psychol Med Settings* . 2012;19(4):401–410. doi:10.1007/s10880-011-9278-8 22Dewa CS, Loong D, Bonato S, Thanh NX, Jacobs P. How does burnout affect physician productivity? A systematic literature review. *BMC Health Serv Res* . 2014;14:325. Published 2014 Jul 28. doi:10.1186/1472-6963-14-325 33Fahrenkopf AM, Sectish TC, Barger LK, et al. Rates of medication errors among depressed and burnt out residents: prospective cohort study. *BMJ* . 2008;336(7642):488–491. doi:10.1136/bmj.39469.763218.BE 44Lu DW, Dresden S, McCloskey C, Branzetti J, Gisondi MA. Impact of Burnout on Self-Reported Patient Care Among Emergency Physicians. *West J Emerg Med* . 2015;16(7):996–1001. doi:10.5811/westjem.2015.9.27945

55Shanafelt TD, Mungo M, Schmitgen J, et al. Longitudinal Study Evaluating the Association Between Physician Burnout and Changes in Professional Work Effort. *Mayo Clin Proc* . 2016;91(4):422–431. doi:10.1016/j.mayocp.2016.02.001

To date, there have been over 3.5 million cases of confirmed COVID-19 infection, with almost 250,000 deaths<sup>66</sup>Johns Hopkins Coronavirus Resource Center. (2020). Retrieved 4 May 2020, from <https://coronavirus.jhu.edu>. As a result, COVID-19 pandemic has applied huge pressure on healthcare systems and workers. Obstetricians and Gynaecologists have had to manage pregnant patients with this novel condition with only a limited evidence-base. Rapidly changing protocols and guidelines related to COVID-19 management, staffing levels and shift patterns have added an additional dimension to these pressures. On top of that, healthcare workers are in the fear of acquiring the infection themselves and spreading this further to their loved ones; some doctors even have had to isolate from their families because of this.

It is therefore important to ascertain the impact of these stressors on the mental health of doctors within the speciality and to identify the contributory factors. This understanding may help to support healthcare staff effectively, minimising the negative impact on mental health and improve clinical performance with a subsequent improvement in patient outcomes and satisfaction during future COVID-19 peaks.

#### *Study Objectives:*

To explore the impact of the COVID-19 pandemic on the mental health of Obstetricians and Gynaecologists and identify significant contributory factors.

#### *Methods:*

We performed a cross-sectional, survey-based study of doctors working in the field of Obstetrics and Gynaecology across all UK Hospitals. Surveys were distributed to doctors via a number of methods. This included handing the survey over to all UK deaneries to disseminate to their trainees, directly emailing doctors to circulate amongst their hospitals and via social media. It was made clear to the respondents that the participation was voluntary and that responses would be anonymous. Informed consent was implied on the return of the survey.

The survey was created in collaboration with both Obstetrics and Gynaecology and Psychiatry doctors. Surveyed information included demographics, history of past mental health conditions requiring treatment, screening for current symptoms of depression and anxiety, the significance of contributory factors and the effects of mental health on workplace behaviour. Screening for major depressive disorders and generalised anxiety disorders were performed using the GAD-2 and PHQ-2 questionnaires. A GAD-2 score of 3 or more was interpreted as likely generalised anxiety disorder (sensitivity 86%, specificity 83%).<sup>11</sup>Skapinakis P. The 2-item Generalized Anxiety Disorder scale had high sensitivity and specificity for detecting GAD in primary care. *Evid Based Med* . 2007;12(5):149. doi:10.1136/ebm.12.5.149 A PHQ-2 score of 3 or more was interpreted as likely major depressive disorder (sensitivity 82.9%, specificity 90%).<sup>22</sup>Arroll B, Goodyear-Smith F, Crengle S, et al. Validation of PHQ-2 and PHQ-9 to screen for major depression in the primary care population. *Ann Fam Med* . 2010;8(4):348-353. doi:10.1370/afm.1139 For the survey to be accepted, all questions had to be answered.

#### *Data-analysis:*

We primarily used inferential descriptive statistics including one-sample t-test to compare the prevalence of anxiety and depression in our study sample against UK-wide population estimates. We also used chi-squared test to explore whether demographics were associated with likely major depressive disorder and generalised anxiety disorder. Finally, we performed a binary logistic regression analysis to explore causative factors for changes in mental health<sup>11</sup>Beaumont, R (2014) *Health Science Statistics using R and R Commander* . Scion publishing:Banbury, Oxfordshire. Analyses were performed in IBM SPSS for Windows Version 26.

#### *Results:*

Two-hundred and seven doctors completed the survey (81.1% female; 18.9% male). Age distribution was as follows: 44.9% (n = 93) aged 20-34 years, 44.9% (n = 93) aged 35-49 years, 10.1% (n=21) were aged 50-69 years. Regarding the clinical-grade, 28% (n=58) of respondents were Consultants, 47.8% (n=99) were Specialty Registrars and 24.2% (n=50) were Senior House Officers. Demographics of respondents is demonstrated in Table 1.

Of the respondents, 22.2% (n=46) of respondents stated that they had previously received treatment for a mental health condition. 15.94% (n=33) of respondents had a PHQ-2 score of 3 or more, suggestive of major depressive disorder (MDD) while 24.64% (n=51) of respondents had a GAD-2 score of 3 or more suggestive of generalised anxiety disorder (GAD).

The rates of both Major Depressive Disorder (15.94% versus 3.3%,  $p=0.023$ ) and Generalised Anxiety Disorder (24.64% versus 5.9%,  $p=0.044$ ) were significantly higher in Obstetrics and Gynaecology doctors as compared to UK-wide population estimates<sup>11</sup> Stansfeld, S., Clark, C., Bebbington, P., King, M., Jenkins, R., & Hinchliffe, S. (2016). Chapter 2: Common mental disorders. In S. McManus, P. Bebbington, R. Jenkins, & T. Brugha (Eds.), *Mental health and wellbeing in England: Adult Psychiatric Morbidity Survey 2014*. Leeds: NHS Digital.. Anxiety was more prevalent amongst female doctors as compared to males (prevalence 27.5% versus 12.50%,  $p=0.047$ ). Although registrars seem to have a higher rate of Generalised Anxiety Disorder compared to their Consultant and/or Senior House Officer counterparts, this was not statistically significant (Figure 1). There was no statistically significant difference in the likelihood of MDD or GAD depending on if respondents had a previous history of mental health disorders requiring treatment (prevalence 22.36% versus 32.61%,  $p=0.176$ ).

Respondents felt that the most significant causative factors for work-related changes to mental health was keeping up to date with frequently changing guidelines, pathways and protocols related to COVID-19 practice in O&G. 84.06% of respondents stated that this factor had caused at least a moderate effect on their mental health, with 62.32% of respondents stating the effect was high or very high.

The multiple binary logistic regression showed that there was a positive correlation between the extent respondents felt that the rapidly evolving environment had an impact on their mental health and a PHQ-2 score suggestive of a major depressive disorder (OR=1.825; CI: 1.241, 2.987;  $p=0.003$ ). There was also a positive correlation between the extent respondents were concerned about contracting COVID-19 from the workplace environment and a GAD-2 score suggestive of generalised anxiety disorder (OR=1.671; CI: 1.058, 2.640;  $p=0.028$ ). Assessed on a Likert scale, 16.91% of respondents agreed that their current mental health status negatively affected their workplace behaviour. 11.59% of respondents agreed to have considered taking time off work during the COVID-19 pandemic due to their mental state. 56.52% of respondents agreed that they were well-supported in their workplace environment. 59.42% agreed that they were aware of wellbeing services available locally and nationally for healthcare staff. Only 38.65% agreed that they felt able to talk to their colleagues about their mental health.

Table 2 summarises the proportion of respondents with scores suggestive of Major Depressive Disorder (MDD) and Generalised Anxiety Disorder (GAD). Table 3 summarises sub-group analyses for Generalised Anxiety Disorder (GAD). Table 4 summarises sub-group analyses for Major Depressive Disorder (MDD).

### *Discussion:*

Our study shows a significantly higher prevalence of symptoms of major depressive disorders and generalised anxiety disorders amongst Obstetrics and Gynaecology doctors during the COVID-19 pandemic, with this being highest amongst female doctors. Interestingly, respondents felt that the most significant factor impacting on their mental health was keeping up to date with frequently changing guidelines, pathways, and protocols due to rapidly evolving evidence.

The results of this study are important because it re-enforces the importance of providing mental health support to Obstetrics and Gynaecology doctors during COVID-19 pandemic. Workplace-based factors have a clear impact on doctor's mental health status; therefore, it would be imperative to provide support platforms

that respond to these contributory factors.

The unknowns surrounding COVID-19 lead to vast volumes of research being conducted rapidly resulting in frequently updated guidelines, protocols and pathways. As the most significant factor to affect doctor's mental health status, it would be prudent to establish methods of reducing the impact these changes have. Potential methods of mitigating the impact could include having clear platforms for easy access to the most-updated guidelines and protocols with clear summaries of recommendations and changes from previous versions. In addition, having virtual online teaching sessions to disseminate updates on guidelines may be beneficial. Simulation training, although challenging given physical distancing recommendations, may also be valuable, if kept to the minimum number of staff.

Less than 40% of respondents agreed that they were able to talk to their colleagues about their mental health, which demonstrates the persistent taboo that mental health carries within the speciality. It is known that fear of stigmatization and discrimination potentially impede healthcare workers intent to seek support and psychotherapeutic interventions<sup>11</sup>Zheng Wei. Mental health and a novel coronavirus (2019-nCoV) in China. *J. Aff. Disord.* 2020 published online 21 March 2020. Changing attitudes and perceptions towards mental health has been an on-going challenge<sup>22</sup>Bianchi EF, Bhattacharyya MR, Meakin R. Exploring senior doctors' beliefs and attitudes regarding mental illness within the medical profession: a qualitative study. *BMJ Open* . 2016;6(9):e012598. Published 2016 Sep 16. doi:10.1136/bmjopen-2016-012598 Table 1: Respondent's demographics

	Number of respondents (%)
<b>Gender</b>	
Male	39 (18.9%)
Female	167 (81.1%)
<b>Age</b>	
20-34 years	93 (44.9%)
35-49 years	93 (44.9%)
50-69 years	21 (10.1%)
<b>Clinical Grade</b>	
Consultant	58 (28%)
Registrar	99 (47.8%)
SHO	50 (24.2%)
<b>Ethnicity</b>	
White	98 (47.34%)
Asian	66 (31.88%)
Black	23 (11.11%)
Mixed	6 (2.90%)
Other	10 (4.83%)
Not disclosed	4 (1.93%)

Table 2: Proportion of respondents with scores suggestive of Major Depressive Disorder (MDD) and Generalised Anxiety Disorder (GAD)

	Number of respondents (%)
<b>GAD-2 score</b>	?
2 (unlikely GAD)	156 (75.36%)
3 (likely GAD)	51 (24.64%)
<b>PHQ-2 score</b>	?
2 (unlikely MDD)	174 (84.06%)

	Number of respondents (%)
PHQ-2 score [?]2 (unlikely MDD)	33 (15.94%)

\*GAD = Generalised Anxiety Disorder, MDD = Major Depressive Disorder

Table 3: Sub-group analyses for Generalised Anxiety Disorder (GAD)

	GAD-2 score [?]2 (unlikely GAD)	GAD-2 score [?]2 (unlikely GAD)
<b>Gender</b>		
Male	35 (87.50%)	5 (12.50%)
Female	121 (72.46%)	46 (27.54%)
<b>Age</b>		
20-34 years	71 (76.34%)	22 (23.66%)
35-49 years	70 (75.27%)	23 (24.73%)
50-69 years	15 (71.43%)	6 (28.57%)
<b>Clinical Grade</b>		
Consultant	69 (69.70%)	30 (30.30%)
Registrar	41 (82.0%)	9 (18.0%)
Senior House Officer	46 (79.31%)	12 (20.69%)
<b>Ethnicity</b>		
White	74 (75.51%)	24 (24.49%)
Asian	48 (72.73%)	18 (27.27%)
Black	19 (82.61%)	4 (17.39%)
Mixed	4 (66.67%)	2 (33.33%)
<b>Previous history of treatment for mental health disorder</b>		
Yes	31 (67.39%)	15 (32.61%)
No	125 (77.64%)	36 (22.36%)

Data reported as number of respondents (% of respondents)

Table 4: Sub-group analysis for Major Depressive Disorder (MDD)

	PHQ-2 score [?]2 (unlikely MDD)	PHQ-2 score [?]2 (unlikely MDD)
<b>Gender</b>		
Male	37 (92.50%)	3 (7.50%)
Female	137 (82.04%)	30 (17.96%)
<b>Age</b>		
20-34 years	75 (80.65%)	18 (19.35%)
35-49 years	81 (87.10%)	12 (12.90%)
50-69 years	18 (85.71%)	3 (14.29%)
<b>Clinical Grade</b>		
Consultant	80 (80.81%)	19 (19.19%)
Registrar	42 (84.0%)	8 (16%)
Senior House Officer	52 (89.66%)	6 (10.34%)
<b>Ethnicity</b>		
White	85 (86.74%)	13 (13.27%)
Asian	50 (75.76%)	16 (24.24%)
Black	21 (91.30%)	2 (9.52%)
Mixed	4 (66.67%)	2 (33.33%)

	PHQ-2 score [?]2 (unlikely MDD)	PHQ-2 score [?]2 (likely MDD)
<b>Previous history of treatment for mental health disorder</b>		
Yes	102 (63.35%)	59 (36.65%)
No	29 (63.04%)	17 (36.96%)

Data reported as number of respondents (% of respondents)

Table 5: Contributory factors to mental health status

Contributory factor	Moderate, high, or very high
Keeping up to date with frequently changing guidelines, pathways, and protocols	129 (62.32%)
Concern about being able to provide competent medical care if deployed to a new area	91 (43.95%)
Uncertainty around the effects of COVID-19 on pregnancy and its management	79 (38.16%)
Concerns about contracting COVID-19 from the workplace	82 (39.61%)
Access to appropriate personal protective equipment	74 (35.75%)
A rapidly evolving practice environment that differs greatly from what you are familiar with	69 (33.33%)
Increased workload	69 (33.33%)

Data reported as number of respondents (% of respondents) and ordered in terms of perceived contribution to mental health status.

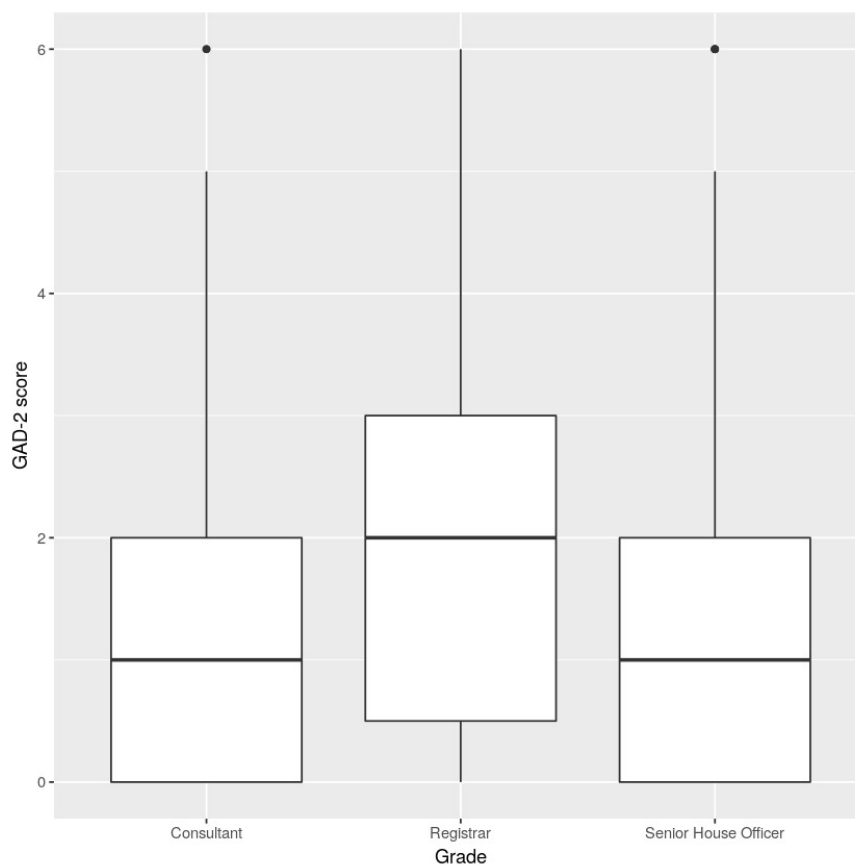


Figure 1: Box plot depicting grade of practice and GAD-2 score. with greater efforts needed to destigmatise mental health in the profession, thereby improving support for doctors.

It is increasingly important during the COVID-19 pandemic that departments send clear signals to their team members that their mental health matters and being open about it will lead to support and not discrimination. Although this is not by any means an easy or quick endeavour, certain departmental and individual factors can help to gradually change cultures.

Departmental initiatives include raising awareness of the high prevalence of mental health conditions amongst Obstetricians and Gynaecologists and the potential impact that these factors have on both doctor's wellbeing and patient care. Training staff, in particular those in leadership roles, so that they feel confident having conversations about mental health can be key in shaping how doctors cope and recover through difficult times. Identifying accessible mental health champions and support pathways sends a clear message that support is available if colleagues are experiencing a mental health problem. Having visible and accessible leadership when managing complex patients with novel conditions may also help to reduce the mental health impact on doctors.

On an individual level, we can all challenge stigma and prejudice by being approachable and confident about mental health and taking steps to normalise conversations and encourage open dialogues.

Strengths of this study included survey respondents from a range of ages, ethnicities and clinical grades and was disseminated throughout the UK. It is also the first reported study that has assessed the impact of COVID-19 on Obstetrics and Gynaecology doctors.

Limitations of this study include that it was an online survey therefore may be prone to selection and response bias. Snowball sampling was used to help mitigate selection bias and recruit hard to reach subjects. The cross-sectional design, whilst demonstrating associations cannot demonstrate significant causal relationships.

#### *Conclusions:*

This is the first reported study that assesses the impact of COVID-19 on mental health amongst Obstetrics and Gynaecology doctors. By assessing contributory factors, further work can be undertaken to improve the mental health of Obstetrics and Gynaecology doctors with a focus on areas with the biggest impact.

Further research should focus on assessing if changes to the way new and updating guidelines, protocols and pathways are disseminated reduces the impact on the mental health of Obstetrics and Gynaecology doctors. Further efforts are needed to improve support networks in work-place environments and encourage normality around discussing mental health amongst doctors.

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Contribution to authorship: NS, AR and FS created the survey. NS and FS were involved in disseminating the survey throughout the UK. Statistical analysis was completed by NS and confirmed by AR and MS. NS drafted the manuscript. FS, AR, MS, LV contributed to editorial changes.

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