

1 **SUPPLEMENTARY MATERIAL**

2

3 **The experiences and wellbeing of healthcare professionals working in the field of**
4 **ultrasound in Obstetrics and Gynaecology as the SARS-CoV-2 pandemic was evolving: a**
5 **cross-sectional survey study**

6

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1 **Supplement 1: The International Society of Ultrasound in Obstetrics and Gynecology**
2 **(ISUOG) SARS-CoV-2 Questionnaire for healthcare professionals working with ultrasound**
3 **in Obstetrics and Gynecology.**

4
5 **Informed consent**

6
7 This questionnaire is fully anonymous - answers cannot be traced back to participants.
8 The anonymised data will be collected for analysis in order to provide a report and
9 publication at a later date.

10
11 **1. Please click 'yes' to participate in this survey. Otherwise, click 'no': (please choose**
12 **one option)**

13 Yes

14 No

15
16 **Introduction**

17
18 **2. What title best describes your job: (please choose one option)**

19 Sonographer – Obstetrics

20 Sonographer – Gynecology

21 Sonographer – Obstetrics and Gynecology

22 Obstetrician

23 Gynecologist

24 Obstetrician and Gynecologist

25 Radiologist

26 Doctor in training – Obstetrics

27 Doctor in training – Gynecology

28 Doctor in training – Obstetrics and Gynecology

29 Doctor in training – Radiologist

30 Doctor in research – Obstetrics

31 Doctor in research – Gynecology

32 Doctor in research – Obstetrics and Gynecology

33 Doctor in research – Radiology

34 Nurse – Obstetrics

35 Nurse – Gynecology

36 Nurse – Obstetrics and Gynecology

37 Nurse – Early pregnancy only

38 Midwife – Obstetrics

39 Midwife – Early pregnancy only

40 Retired

41
42 **3. In what country do you practice? (please state below)**

43 Afghanistan

44 Albania

45 Algeria

46 Andorra

47 Angola

- 1 Antigua and Barbuda
- 2 Argentina
- 3 Armenia
- 4 Australia
- 5 Austria
- 6 Azerbaijan
- 7 The Bahamas
- 8 Bahrain
- 9 Bangladesh
- 10 Barbados
- 11 Belarus
- 12 Belgium
- 13 Belize
- 14 Benin
- 15 Bhutan
- 16 Bolivia
- 17 Bosnia and Herzegovina
- 18 Botswana
- 19 Brazil
- 20 Brunei
- 21 Bulgaria
- 22 Burkina Faso
- 23 Burundi
- 24 Cabo Verde
- 25 Cambodia
- 26 Cameroon
- 27 Canada
- 28 Central African Republic
- 29 Chad
- 30 Chile
- 31 China
- 32 Colombia
- 33 Comoros
- 34 Congo, Democratic Republic of the
- 35 Congo, Republic of the
- 36 Costa Rica
- 37 Côte d'Ivoire
- 38 Croatia
- 39 Cuba
- 40 Cyprus
- 41 Czech Republic
- 42 Denmark
- 43 Djibouti
- 44 Dominica
- 45 Dominican Republic
- 46 East Timor (Timor-Leste)
- 47 Ecuador

- 1 Egypt
- 2 El Salvador
- 3 Equatorial Guinea
- 4 Eritrea
- 5 Estonia
- 6 Eswatini
- 7 Ethiopia
- 8 Fiji
- 9 Finland
- 10 France
- 11 Gabon
- 12 The Gambia
- 13 Georgia
- 14 Germany
- 15 Ghana
- 16 Greece
- 17 Grenada
- 18 Guatemala
- 19 Guinea
- 20 Guinea-Bissau
- 21 Guyana
- 22 Haiti
- 23 Honduras
- 24 Hungary
- 25 Iceland
- 26 India
- 27 Indonesia
- 28 Iran
- 29 Iraq
- 30 Ireland
- 31 Israel
- 32 Italy
- 33 Jamaica
- 34 Japan
- 35 Jordan
- 36 Kazakhstan
- 37 Kenya
- 38 Kiribati
- 39 Korea, North
- 40 Korea, South
- 41 Kosovo
- 42 Kuwait
- 43 Kyrgyzstan
- 44 Laos
- 45 Latvia
- 46 Lebanon
- 47 Lesotho

- 1 Liberia
- 2 Libya
- 3 Liechtenstein
- 4 Lithuania
- 5 Luxembourg
- 6 Madagascar
- 7 Malawi
- 8 Malaysia
- 9 Maldives
- 10 Mali
- 11 Malta
- 12 Marshall Islands
- 13 Mauritania
- 14 Mauritius
- 15 Mexico
- 16 Micronesia, Federated States of
- 17 Moldova
- 18 Monaco
- 19 Mongolia
- 20 Montenegro
- 21 Morocco
- 22 Mozambique
- 23 Myanmar (Burma)
- 24 Namibia
- 25 Nauru
- 26 Nepal
- 27 Netherlands
- 28 New Zealand
- 29 Nicaragua
- 30 Niger
- 31 Nigeria
- 32 North Macedonia
- 33 Norway
- 34 Oman
- 35 Pakistan
- 36 Palau
- 37 Panama
- 38 Papua New Guinea
- 39 Paraguay
- 40 Peru
- 41 Philippines
- 42 Poland
- 43 Portugal
- 44 Qatar
- 45 Romania
- 46 Russia
- 47 Rwanda

- 1 Saint Kitts and Nevis
- 2 Saint Lucia
- 3 Saint Vincent and the Grenadines
- 4 Samoa
- 5 San Marino
- 6 Sao Tome and Principe
- 7 Saudi Arabia
- 8 Senegal
- 9 Serbia
- 10 Seychelles
- 11 Sierra Leone
- 12 Singapore
- 13 Slovakia
- 14 Slovenia
- 15 Solomon Islands
- 16 Somalia
- 17 South Africa
- 18 Spain
- 19 Sri Lanka
- 20 Sudan
- 21 Sudan, South
- 22 Suriname
- 23 Sweden
- 24 Switzerland
- 25 Syria
- 26 Taiwan
- 27 Tajikistan
- 28 Tanzania
- 29 Thailand
- 30 Togo
- 31 Tonga
- 32 Trinidad and Tobago
- 33 Tunisia
- 34 Turkey
- 35 Turkmenistan
- 36 Tuvalu
- 37 Uganda
- 38 Ukraine
- 39 United Arab Emirates
- 40 United Kingdom
- 41 United States
- 42 Uruguay
- 43 Uzbekistan
- 44 Vanuatu
- 45 Vatican City
- 46 Venezuela
- 47 Vietnam

1 Yemen
2 Zambia
3 Zimbabwe

4

5 **4. Are you an ISUOG member? (please choose one option)**

6 Yes

7 No

8

9 **5. If you answered no, which society or professional body did you receive this survey**
10 **from?**

11 Open box answer

12

13 **Demographics**

14

15 **6. How old are you? (please state number of years)**

16 Numbers offered

17

18 **7. What sex were you assigned at birth? (please choose one option)**

19 Male

20 Female

21 Intersex

22 Prefer not to say

23

24 **8. What gender do you most identify with? (please choose one option)**

25 Male

26 Female

27 Prefer not to say

28 Other (please specify)

29

30

31 **Underlying medical conditions**

32

33 **9. Do you have any underlying medical conditions that place you at increased risk**
34 **during the SARS-CoV-2 pandemic? (please tick all that apply)**

35 None

36 Heart disease

37 Hypertension

38 Diabetes

39 Asthma

40 Other lung disease

41 Kidney disease

42 Cancer

43

44

45

46

47

1

2 **Medication**

3

4 **10. Are you taking any of the following medications? (please tick all that apply)**

5 None

6 Immunosuppressant medication - steroids

7 Immunosuppressant medication - methotrexate

8 Immunosuppressant medication - biological agents

9 Aspirin

10 Indomethacin

11 Any other non-steroidal anti-inflammatory drugs (NSAIDS) e.g. ibuprofen, diclofenac,
12 naproxen13 Angiotensin converting enzyme inhibitors (ACEi) blood pressure medication - any ending in -
14 pril (e.g. enalapril)15 Any other blood pressure medication e.g. angiotensin receptor blockers (ARB), alpha
16 blockers, alpha-2 receptor agonists, beta blockers, combined alpha and beta blockers,
17 calcium channel blockers (CCB), diuretics, other

18

19

20 **Smoking and BMI**

21

22 **11. Do you smoke? (please choose one option)**

23 Yes

24 Previously – now stopped

25 No

26

27 **12. What was your last measured weight? (please choose one option)**28 *In kilograms (kg) – numbers offered*

29

30 **13. What is your height? (please choose one option)**31 *In centimetres (cm) – numbers offered*

32

33 **Role, shift pattern, PPE**

34

35 **14. How has your role and shift pattern been affected by the SARS-CoV-2 pandemic?
36 (please choose one option)**

37 Unable to work for the duration of the pandemic

38 Reduced duties with no patient contact

39 Reduced duties with reduced patient contact

40 Reduced duties with similar patient contact

41 Reduced duties with increased patient contact

42 Similar duties with no patient contact

43 Similar duties with reduced patient contact

44 Similar duties with similar patient contact

45 Similar duties with increased patient contact

46 Increased duties with no patient contact

47 Increased duties with reduced patient contact

- 1 Increased duties with similar patient contact
2 Increased duties with increased patient contact
3
4 **15. Where are you working during the SARS-CoV-2 pandemic? (please tick all that
5 apply)**
6 Obstetrics – Labor ward
7 Obstetrics – Birth center
8 Obstetrics – Antenatal ward
9 Obstetrics – Postnatal ward
10 Obstetrics – Maternity triage
11 Obstetrics – Antenatal clinic
12 Obstetrics – Maternity helplines
13 Obstetrics – Community clinics
14 Obstetrics – Ultrasound
15 Gynecology – Acute gynecology
16 Gynecology – Benign gynecology
17 Gynecology – Oncology
18 Gynecology – Ultrasound
19 Early pregnancy unit – Ultrasound and assessment
20 Radiology – Ultrasound
21 Radiology – non-ultrasound
22 Obstetrics/Gynecology/Radiology – From home
23
24 **16. Do you interact with patients confirmed or suspected to have SARS-CoV-2? (please
25 choose one option)**
26 Yes – every day
27 Yes – every week
28 Yes – every so often
29 I don't know
30 Not yet
31 No
32
33 **17. Have you been using personal protective equipment (PPE) since the SARS-CoV-2
34 outbreak? (please choose one option)**
35 No
36 Not yet
37 Yes – for aerosol generating procedures only
38 Yes – for suspected/positive patients only
39 Yes – for all patients
40
41 **18. When you perform an ultrasound scan please state what PPE you use: (please tick
42 all that apply)**
43 None
44 Gloves
45 Surgical mask
46 N95/FFP3 mask
47 Gown

- 1 Visor
2 Surgical hat
3
4 **19. Have there been any concerns regarding PPE provision or shortages since the**
5 **SARS-CoV-2 outbreak? (note – Full PPE includes a N95/FFP3 mask, visor, surgical**
6 **hat, gown and gloves) (please tick all that apply)**
7 No issues with provision
8 Yes – supply issues with gloves
9 Yes – supply issues with surgical masks
10 Yes – supply issues with N95/FFP3 masks
11 Yes – supply issues with gowns
12 Yes – supply issues with visors
13 Yes – supply issues with surgical hats
14 Yes – supply issues with providing patients with a surgical mask
15
16 **20. Have you been asked to re-use or recycle any PPE? (please tick all that apply**
17 **option)**
18 No
19 Yes - Gloves
20 Yes - Surgical mask
21 Yes - N95/FFP3 mask
22 Yes - Gown
23 Yes - Visor
24 Yes - Surgical hat
25
26 **21. Do you ask patients to wear a surgical mask? (please choose one option)**
27 Yes
28 No
29
30
31 **SARS-CoV-2 diagnosis**
32
33 **22. Have you had or do you have SARS-CoV-2 based on clinical symptoms and/or a**
34 **SARS-CoV-2 swab (PCR) diagnosis? (please choose one option)**
35 No – no test or symptoms suggestive of SARS-CoV-2
36 Yes – suspected based on symptoms but have not had PCR swab testing
37 Yes – suspected based on symptoms, had PCR testing, which was negative
38 Yes – confirmed on PCR swab testing but have had no symptoms
39 Yes – suspected based on symptoms and confirmed on PCR swab testing
40
41 **23. With regards to having a SARS-CoV-2 swab test, please choose one option:**
42 Not been offered
43 Offered as experiencing symptoms
44 Offered as in contact with confirmed or probable SARS-CoV-2 patients
45 Offered as living with someone who has probable or confirmed SARS-CoV-2
46 Not applicable
47

1 **24. What symptoms have you experienced or are you experiencing? (please tick all**
2 **that apply)**

- 3 None
4 High fever
5 Persistent dry cough
6 Productive cough
7 Shortness of breath/Difficulty breathing
8 Fatigue
9 Headache
10 Loss of sense of smell and/or taste
11 Sore throat
12 Chest pain
13 Diarrhoea
14 Myalgia
15 Loss of appetite
16 Hoarse voice
17 Abdominal pain

18
19 **Personal SARS-CoV-2 pathway**

20
21 **25. At what point were you offered a SARS-CoV-2 swab? (please state number of days**
22 **into your illness with day 1 being the day you started to have symptoms. If you**
23 **have not had symptoms – please choose 'not had symptoms'. If you were not**
24 **offered a test, please choose 'not offered a test')**

- 25 Not had symptoms
26 Not offered a test
27 Not applicable
28 Numbers offered

29
30 **26. How severe was/is your infection? (please choose one option)**

- 31 Mild COVID-19 (T< 37.8 oC, tiredness, muscle aches, headache, no breathlessness, normal
32 appetite)
33 Moderate COVID-19 (T> 37.8 oC, troublesome cough, breathless on exercise, tired but no
34 chest or abdominal pain)
35 Severe COVID-19 (T> 37.8 oC, noticeably breathless even when sitting still, unable to
36 complete sentences when talking, chest or abdominal pain, reduced appetite)
37 Critical COVID-19 (development of severe acute respiratory syndrome in need of ventilator
38 or other respiratory support)
39 Not applicable

40
41 **27. How long were you or have you been symptomatic for? (please state number of**
42 **days. If you have not had symptoms – please choose 'not had symptoms')**

- 43 Not had symptoms
44 Numbers offered

45

- 1 **28. How long did you stay at home before going back to work, or if current infection,**
2 **how long have you been at home for? (please state number of days. If you have**
3 **not had symptoms – please choose 'not had symptoms')**
4 Not had symptoms
5 Numbers offered
6
7 **29. Did you or do you feel under pressure from your employers to return to work**
8 **before making a full recovery? (please choose one option)**
9 Yes
10 No
11 Not applicable
12
13 **30. If you have been unwell with presumed or confirmed SARS-CoV-2, how long were**
14 **you advised to stay at home by your employers before going back to work? (please**
15 **state number of days. If you have not had symptoms – please choose 'not had**
16 **symptoms')**
17 Not had symptoms
18 Numbers offered
19
20 **31. Have you had a SARS-CoV-2 antibody test? (please choose one option)**
21 No – no test or symptoms suggestive of SARS-CoV-2
22 No – not offered
23 No – offered and declined
24 Yes – negative
25 Yes – positive
26
27
28 **Household**
29
30 **32. Have you needed to, or are you currently self-isolating due to a member of your**
31 **household having suspected or confirmed SARS-CoV-2? (please choose one option)**
32 Yes
33 No
34
35 **33. How long did you need or have you needed to self-isolate due to a member of your**
36 **household having suspected or confirmed SARS-CoV-2? (please state number of**
37 **days. If your household has been well - please choose 'household has been well')**
38 Household has been well
39 Numbers offered
40
41
42
43
44
45
46
47

1 **Colleagues**

2

3 **34. How many colleagues do you work with in your unit? (please state number of each**
4 **group. Select 'unsure' if you do not know)**

5 *Sonographers*

6 *Consultants*

7 *Doctors in training*

8 *Doctors in research*

9 *Nurses*

10 *Midwives*

11 *Unsure*

12 *Numbers offered*

13

14 **35. To your knowledge, how many colleagues are you aware of in your unit that have**
15 **had a presumed diagnosis of SARS-CoV-2 based on symptoms or a positive swab?**
16 **(please state number of each group. Select 'unsure' if you have no information)**

17 *Sonographers*

18 *Consultants*

19 *Doctors in training*

20 *Doctors in research*

21 *Nurses*

22 *Midwives*

23 *Unsure*

24 *Numbers offered*

25

26 **36. To your knowledge, how many colleagues have needed to self-isolate or are self-**
27 **isolating due to a member of their household having suspected or confirmed SARS-**
28 **CoV-2? (please state number of each group. Select 'unsure' if you have no**
29 **information)**

30 *Sonographers*

31 *Consultants*

32 *Doctors in training*

33 *Doctors in research*

34 *Nurses*

35 *Midwives*

36 *Unsure*

37 *Numbers offered*

38

39 **37. What is the longest period of time any of your colleagues have taken off in**
40 **isolation because they or a household member have suspected or confirmed SARS-**
41 **CoV-2? (please state number of days. Select 'unsure' if you have no information)**

42 *Unsure*

43 *Numbers offered*

44

45

46

47

1 **Support**

2
3 **38. Have you felt or do you feel adequately supported by your unit during the SARS-**
4 **CoV-2 pandemic? (please choose one option)**

5 Yes

6 No

7
8 **39. How do you rate the response and support that was provided by your country's**
9 **Ministry of Health or Public Health officials? (please answer using the scale below)**

10 0 - Extremely poor

11 50 - Adequate

12 100 - Excellent

13
14
15 **40. Please tell us, if you wish, your views regarding how well clinician safety has been**
16 **protected by your employers (please state in the text box below. If you choose not**
17 **to answer, please write 'not applicable')**

18 Open box answer

19
20
21 **Hospital Anxiety and Depression Scale (HADS)**

22
23 **41. Thank you for filling out this questionnaire.**

24
25 **Optional: Hospital Anxiety and Depression Scale (HADS). If you are willing to**
26 **proceed, please click yes. Otherwise, click no to end the survey.**

27 Yes

28 No

29
30
31 **Hospital Anxiety and Depression Scale (HADS)**

32
33 **42. Choose the reply that is closest to how you have been feeling in the past week.**
34 **Don't take too long over your replies: your immediate is best.**

35
36 **I feel tense or 'wound up':**

37 Most of the time

38 A lot of the time

39 From time to time, occasionally

40 Not at all

41
42 **43. Choose the reply that is closest to how you have been feeling in the past week.**
43 **Don't take too long over your replies: your immediate is best.**

44
45 **I still enjoy the things I used to enjoy:**

46 Definitely as much

47 Not quite as much

- 1 Only a little
2 Hardly at all
3
4 **44. Choose the reply that is closest to how you have been feeling in the past week.**
5 **Don't take too long over your replies: your immediate is best.**
6
7 **I get a sort of frightened feeling as if something awful is about to happen:**
8 Very definitely and quite badly
9 Yes, but not too badly
10 A little, but it doesn't worry me
11 Not at all
12
13 **45. Choose the reply that is closest to how you have been feeling in the past week.**
14 **Don't take too long over your replies: your immediate is best.**
15
16 **I can laugh and see the funny side of things:**
17 As much as I always could
18 Not quite so much now
19 Definitely not so much now
20 Not at all
21
22 **46. Choose the reply that is closest to how you have been feeling in the past week.**
23 **Don't take too long over your replies: your immediate is best.**
24
25 **Worrying thoughts go through my mind:**
26 A great deal of the time
27 A lot of the time
28 From time to time, but not too often
29 Only occasionally
30
31 **47. Choose the reply that is closest to how you have been feeling in the past week.**
32 **Don't take too long over your replies: your immediate is best.**
33
34 **I feel cheerful:**
35 Not at all
36 Not often
37 Sometimes
38 Most of the time
39
40 **48. Choose the reply that is closest to how you have been feeling in the past week.**
41 **Don't take too long over your replies: your immediate is best.**
42
43 **I can sit at ease and feel relaxed:**
44 Definitely
45 Usually
46 Not often
47 Not at all

- 1
2 **49. Choose the reply that is closest to how you have been feeling in the past week.**
3 **Don't take too long over your replies: your immediate is best.**
4
5 **I feel as if I am slowed down:**
6 Nearly all the time
7 Very often
8 Sometimes
9 Not at all
10
11 **50. Choose the reply that is closest to how you have been feeling in the past week.**
12 **Don't take too long over your replies: your immediate is best.**
13
14 **I get a sort of frightened feeling like 'butterflies' in the stomach:**
15 Not at all
16 Occasionally
17 Quite often
18 Very often
19
20 **51. Choose the reply that is closest to how you have been feeling in the past week.**
21 **Don't take too long over your replies: your immediate is best.**
22
23 **I have lost interest in my appearance:**
24 Definitely
25 I don't take as much care as I should
26 I may not take quite as much care
27 I take just as much care as ever
28
29 **52. Choose the reply that is closest to how you have been feeling in the past week.**
30 **Don't take too long over your replies: your immediate is best.**
31
32 **I feel restless as I have to be on the move:**
33 Very much indeed
34 Quite a lot
35 Not very much
36 Not at all
37
38 **53. Choose the reply that is closest to how you have been feeling in the past week.**
39 **Don't take too long over your replies: your immediate is best.**
40
41 **I look forward with enjoyment to things:**
42 As much as I ever did
43 Rather less than I used to
44 Definitely less than I used to
45 Hardly at all
46
47

1 **54. Choose the reply that is closest to how you have been feeling in the past week.**
2 **Don't take too long over your replies: your immediate is best.**

- 3
4 **I get sudden feelings of panic:**
5 Very often indeed
6 Quite often
7 Not very often
8 Not at all

9
10 **55. Choose the reply that is closest to how you have been feeling in the past week.**
11 **Don't take too long over your replies: your immediate is best.**

- 12
13 **I can enjoy a good book or radio or TV program:**
14 Often
15 Sometimes
16 Not often
17 Very seldom

18
19
20 **56. Thank you for filling out this questionnaire. Please complete last question to end.**
21 **Please tell us, if you wish, how you have felt emotionally during the SARS-CoV-2**
22 **pandemic? (please state in the text box below. If you choose not to answer, please**
23 **write 'not applicable')**

24 Open box answer
25
26
27

1 **Supplement 2: Original study protocol**

2 **Title:** An international survey of the impact of COVID19 on healthcare professionals carrying
3 out ultrasonography, service provision and mental state in Obstetrics and Gynecology

4
5 **Date:** 19th April 2020

6
7 **Main Sponsor:** UZ Leuven Belgium

8 **Carried out in collaboration with:** International Society of Ultrasound in Obstetrics and
9 Gynecology (ISUOG)

10 **Version number:** 1

11 Principal Investigators: Professor Tom Bourne and Professor Dirk Timmerman

12 Co-Investigators: Dr Christopher Kyriacou, Dr Harsha Shah

13 **Protocol to be assessed by:** EC Onderzoek UZ Leuven, Belgium.

14
15 **Design:** Prospective cohort observational survey study.

16
17 **Aim:** To assess the services and psychological impact of the COVID-19 pandemic to
18 healthcare professionals carrying out ultrasonography within the Obstetrics and Gynecology
19 specialty.

20
21 **Hypothesis:**

- 22 1. Service provision to support healthcare professionals during the COVID-19 pandemic
23 varies considerably in every unit globally;
24 2. Healthcare professionals will have experienced COVID-19 first-hand;
25 3. The COVID-19 pandemic has caused significant psychological distress to healthcare
26 professionals which can be assessed using a validated psychological tool.

27
28 **Outcome measures:**

- 29 1. A questionnaire to healthcare professionals detailing medical history, role, area of
30 work, personal protective equipment (PPE), COVID-19 patient contact and personal
31 COVID-19 experience will allow data to be collected in relation to the physical impact
32 of the COVID-19 pandemic;
33 2. Use of the validated Hospital Anxiety and Depression Scale (HADS) will allow
34 psychological morbidity of healthcare professionals to be assessed.

35
36 **Eligibility:** Members of ISUOG that fill in the questions via an online survey platform. The
37 questionnaire will in English, Spanish, Greek, Hindu, Mandarin and Cantonese.

38
39 **Duration:** The survey will be conducted over a period of two weeks in order to allow time
40 for the questions to be answered, two reminder emails will be sent – one at a week before
41 closure and one 24 hours before closure

42
43 **Consent:** Consent will be implied when the questionnaire is filled in and there will be a
44 specific question asking for consent to take part in the survey, however all information is
45 anonymized and cannot be traced to an individual. No data will be requested that is in
46 breach of General Data Protection Regulation (GDPR).

47

1 **Background:** The current coronavirus (SARS-CoV-2) pandemic carries a number of new
2 challenges to local, national and international healthcare agencies in order to protect
3 patients and healthcare professionals (physicians, sonographers, allied healthcare
4 professionals). Guidance varies from nation to nation with issues arising from redeployment
5 of clinicians, prioritization of particular services and provision of PPE. This is important as
6 those carrying out ultrasound scans are in close proximity to patients and are at high risk of
7 SARS-CoV-2 infection¹.

8 Anxiety and depression are recognized complications for healthcare professionals working
9 in a high-stress environment, particularly one that now encompasses a novel disease for
10 which we have yet to fully understand².

11
12 **Methods:** This is a prospective cohort study and will recruit via the dissemination of a
13 survey online through the ISUOG mailing list. Consent will be presumed when the form is
14 filled in and submitted. This will allow healthcare professionals globally to answer. The
15 questionnaire has been devised to assess the service provision in units around the world as
16 well as question personal COVID-19 experience. Following on from this will be an optional
17 HADS. The HADS is a 14-part questionnaire with 7 questions exploring symptoms of anxiety
18 and depression, respectively. Each question is answered with a scale of 0-3 to represent
19 severity of symptoms, with an independent maximum score of 21 for depression and
20 anxiety. A score ≥ 11 is deemed moderate, whilst ≥ 16 represents severe symptoms³.

21
22 **Statistics and data analysis:** Sample size will be dependent on the number of online
23 responders. We hope that there will be significant uptake from a number of countries
24 globally. The recruitment will be online so no breach to social distancing rules will apply. To
25 compare differences in binary variables we will use the likelihood ratio, chi-squared or
26 Fisher's exact test and will consider a p value < 0.05 as statistically significant. Ninety-five per
27 cent confidence intervals for rates of psychological morbidity will be created using the
28 Wilson method.

29
30 **Dissemination:** Following the collection and analysis of the data obtained from the
31 questionnaire, we aim to present the findings to the ISUOG membership and publish in
32 peer-reviewed journals – preferably *Ultrasound in Obstetrics and Gynecology*. The need to
33 understand the experience of the pandemic by frontline workers is extremely important,
34 not only to support them now, but to prepare for any future international healthcare
35 emergency.

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1 **Supplement 3: Breakdown of healthcare professional (HCP) roles for analysis.**

Job title	
Doctor in research – Gynecology	Split up based on age: trainees/residents and consultants/attending
Doctor in research – Obstetrics	Split up based on age: trainees/residents and consultants/attending
Doctor in research – Obstetrics and Gynecology	Split up based on age: trainees/residents and consultants/attending
Doctor in research – Radiology/Sonologist	Split up based on age: trainees/residents and consultants/attending
Doctor in training – Gynecology	Split up based on age: trainees/residents and consultants/attending
Doctor in training – Obstetrics	Split up based on age: trainees/residents and consultants/attending
Doctor in training – Obstetrics and Gynecology	Split up based on age: trainees/residents and consultants/attending
Doctor in training – Radiologist/Sonologist	Split up based on age: trainees/residents and consultants/attending
Gynecologist	Split up based on age: trainees/residents and consultants/attending
Midwife – Early pregnancy only	Sonographer
Midwife – Obstetrics	Sonographer
Nurse – Early pregnancy only	Sonographer
Nurse – Gynecology	Sonographer
Nurse – Obstetrics	Sonographer
Nurse – Obstetrics and Gynecology	Sonographer
Obstetrician	Split up based on age: trainees/residents and consultants/attending
Obstetrician and Gynecologist	Split up based on age: trainees/residents and consultants/attending
Radiologist/Sonologist	Split up based on age: trainees/residents and consultants/attending
Retired	Exclude from analyses
Sonographer – Gynecology	Sonographer
Sonographer – Obstetrics	Sonographer
Sonographer – Obstetrics and Gynecology	Sonographer

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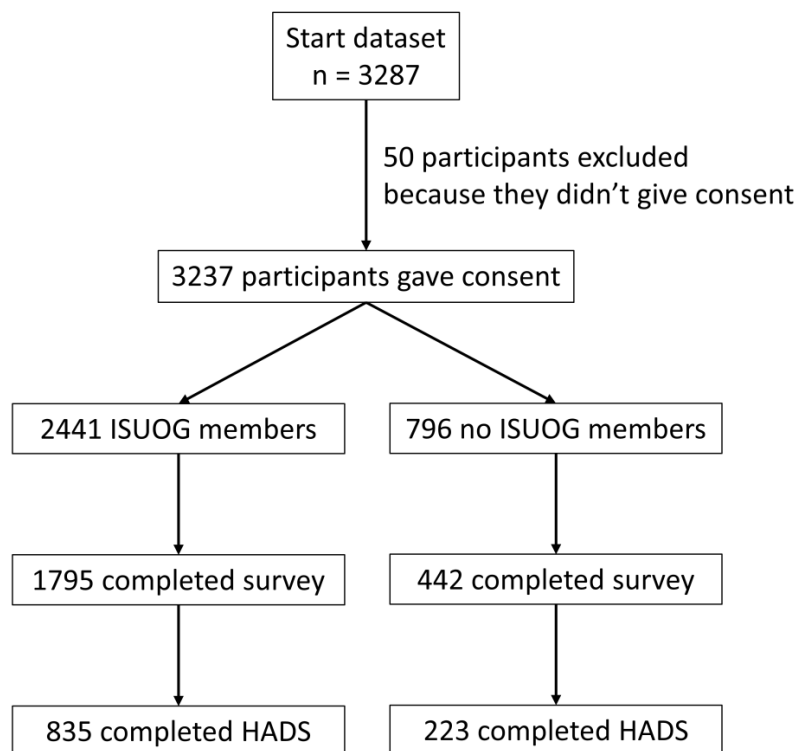
1 Supplement 4: Breakdown of risk by area of work for analysis.

Areas of work	Risk of COVID-19 infection
Early pregnancy unit - Ultrasound and assessment	High risk
Gynecology - Acute Gynecology	High risk
Gynecology - Benign Gynecology	Low risk
Gynecology – Oncology	Low risk
Gynecology - Ultrasound	High risk
Obstetrics/Gynecology/Radiology - From home	Low risk
Obstetrics - Antenatal clinic	Moderate risk
Obstetrics - Antenatal ward	Moderate risk
Obstetrics - Birth center/Birthing center	High risk
Obstetrics - Community clinics	Moderate risk
Obstetrics - Labor ward	High risk
Obstetrics - Maternity helplines	Low risk
Obstetrics - Maternity triage/Hospital obstetric triage	High risk
Obstetrics - Postnatal ward	Moderate risk
Obstetrics – Ultrasound	High risk
Radiology - non-Ultrasound	Moderate risk
Radiology - Ultrasound	High risk

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1 **Supplement 5: Flowchart summarizing survey participants, differentiating International**
2 **Society of Ultrasound in Obstetrics and Gynecology (ISUOG) members and non-ISUOG**
3 **members (n = 3287).**



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Response rate:

ISUOG members - 23.1% (2441/10589)

Non-ISUOG members - 3.2% (796/24920).

Abbreviations: HADS (Hospital Anxiety and Depression scale)

1 **Supplement 6: Demographics of survey participation, differentiated based on**
 2 **International Society of Ultrasound in Obstetrics and Gynecology (ISUOG) membership (n**
 3 **= 3237).**

	ISUOG members (n = 2441)	Others (n = 796)
Total ISUOG mailing list (n)	10589	24920
Response of total ISUOG mailing list (n, %)	2441 (23%)	796 (3%)
Countries (n)	120	78
Number of respondents in English (n)	1603	357
Number of respondents in Spanish (n)	564	317
Number of respondents in Italian (n)	195	72
Number of respondents in French (n)	79	50
Completed survey	1795	442
Countries (n)	110	65
Age (mean, range)	47.2 (18-82)	47.7 (25-78)
≤20 years	1 (0%)	0 (0%)
21-30 years	95 (5%)	22 (5%)
31-40 years	454 (25%)	104 (24%)
41-50 years	549 (31%)	137 (31%)
51-60 years	475 (26%)	121 (28%)
61-70 years	201 (11%)	50 (11%)
>70 years	18 (1%)	6 (1%)
Gender (n, %)		
Female	1176 (66%)	298 (68%)
Male	613 (34%)	142 (32%)
Intersex	1 (0%)	0 (0%)
Prefer not to say	3 (0%)	0 (0%)
Prevalence suspected or confirmed SARS-CoV-2 based on symptoms +/- PCR testing (%)	230 (13%)	60 (14%)
Is PPE used by respondents (n, %)		
Not yet	217 (12%)	62 (14%)
Yes - for aerosol generating procedures only	110 (6%)	23 (5%)
Yes - for all patients	1142 (64%)	250 (57%)
Yes - for suspected/positive patients only	324 (18%)	105 (24%)
What PPE is used by respondents (n, %)		
None	59 (3%)	17 (4%)
Gloves only	38 (2%)	11 (3%)
Gloves + surgical mask	393 (22%)	104 (24%)
Gloves + surgical mask + visor	116 (6%)	36 (8%)
Gloves + FFP3 mask	83 (5%)	12 (3%)
Gloves + FFP3 mask + visor	39 (2%)	12 (3%)
Gloves + FFP3 mask + visor + gown + surgical hat	70 (4%)	20 (5%)

<i>Patient wearing mask</i>	1482 (83%)	359 (82%)
Concerns regarding a lack of PPE (n, %)		
<i>No</i>	475 (26%)	104 (24%)
<i>Gloves</i>	223 (12%)	55 (13%)
<i>Gown</i>	499 (28%)	130 (30%)
<i>N95/FFP3 mask</i>	1014 (57%)	265 (60%)
<i>Surgical hat</i>	187 (10%)	46 (10%)
<i>Surgical mask</i>	657 (37%)	163 (37%)
<i>Visor</i>	458 (26%)	124 (28%)
<i>Surgical mask (patient)</i>	479 (27%)	130 (30%)
Type of PPE that has been re-used or recycled (n, %)		
<i>No</i>	690 (38%)	175 (40%)
<i>Gloves</i>	27 (2%)	7 (2%)
<i>Gown</i>	229 (13%)	58 (13%)
<i>N95/FFP3 mask</i>	722 (40%)	164 (37%)
<i>Surgical hat</i>	74 (4%)	18 (4%)
<i>Surgical mask</i>	435 (24%)	130 (30%)
<i>Visor</i>	493 (27%)	128 (29%)
Anxiety (mean, 95% CI)*	7 (6.7-7.3)	6.6 (6.1-7.1)
<i>0-7 (none)</i>	480 (57%)	140 (63%)
<i>8-10 (mild)</i>	180 (22%)	49 (22%)
<i>11-21 (moderate to severe)</i>	175 (21%)	34 (15%)
Depression (mean, 95% CI)*	5.4 (5.2-5.7)	4.9 (4.4-5.4)
<i>0-7 (none)</i>	587 (70%)	173 (78%)
<i>8-10 (mild)</i>	171 (20%)	34 (15%)
<i>11-21 (moderate to severe)</i>	77 (9%)	16 (7%)

1 *Numbers of HADS respondents lower than for main survey (n = 835 ISUOG members, n = 223 Others)

2 Abbreviations: PCR (Polymerase Chain Reaction); PPE (Personal Protective Equipment)

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1 **Supplement 7: Comparison of comorbidity in those with (n = 290) and without suspected**
2 **or confirmed SARS-CoV-2 (n = 1947) (Total n = 2237).**

	Suspected or confirmed SARS-CoV-2	Without suspected or confirmed SARS-CoV-2
Heart disease (n, %)	3 (1%)	43 (2%)
Lung disease (n %)	30 (10%)	160 (8%)
Use of antihypertensives (n, %)	39 (13%)	283 (15%)
Smokers (n, %)	13 (4%)	125 (6%)

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1 **Supplement 8: Comparison of Hospital Anxiety and Depression scale (HADS) scores in**
2 **those with (n = 162) and without suspected or confirmed SARS-CoV-2 (n = 896) (Total n =**
3 **1058).**

	Suspected or confirmed SARS-CoV-2	Without suspected or confirmed SARS-CoV-2
Anxiety (mean, 95% CI)	7.4 (6.7-8.0)	6.8 (6.6-7.1)
0-7 (<i>none</i>)	86 (53%)	534 (60%)
8-10 (<i>mild</i>)	32 (20%)	197 (22%)
11-21 (<i>moderate to severe</i>)	44 (27%)	165 (18%)
Depression (mean, 95% CI)	5.8 (5.2-6.4)	5.2 (5.0-5.5)
0-7 (<i>none</i>)	105 (65%)	655 (73%)
8-10 (<i>mild</i>)	37 (23%)	168 (19%)
11-21 (<i>moderate to severe</i>)	20 (12%)	73 (8%)

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1 **Supplement 9: Hospital Anxiety and Depression scale (HADS) breakdown by gender (n =**
 2 **1058).**

	Female	Male	Prefer not to say
Number of respondents (n, %)	754 (71%)	303 (29%)	1 (0%)
Anxiety (mean, 95% CI)*	6.9 (6.6-7.2)	5.7 (5.3-6.2)	-
<i>0-7 (None) (n, %)</i>	450 (60%)	202 (67%)	1 (100%)
<i>8-10 (Mild) (n, %)</i>	148 (20%)	60 (20%)	0 (0%)
<i>11-21 (Moderate to severe) (n, %)</i>	156 (21%)	41 (14%)	0 (0%)
Depression (mean, 95% CI)*	5.4 (5.2-5.7)	5.0 (4.6-5.4)	-
<i>0-7 (none) (n, %)</i>	529 (70%)	230 (76%)	1 (100%)
<i>8-10 (mild) (n, %)</i>	146 (19%)	59 (19%)	0 (0%)
<i>11-21 (moderate to severe) (n, %)</i>	79 (10%)	14 (5%)	0 (0%)

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1 **Supplement 10: Hospital Anxiety and Depression scale (HADS) breakdown by risk of**
 2 **working area (n = 1058).**

	Low risk	Moderate risk	High risk
Number of respondents (n, %)	23 (2%)	28 (3%)	1007 (95%)
Anxiety (mean, 95% CI)*	8.3 (6.3-10.3)	5.1 (3.6-6.6)	6.6 (6.3-6.8)
<i>0-7 (None) (n, %)</i>	13 (57%)	21 (75%)	619 (61%)
<i>8-10 (Mild) (n, %)</i>	3 (13%)	3 (11%)	202 (20%)
<i>11-21 (Moderate to severe) (n, %)</i>	7 (30%)	4 (14%)	186 (18%)
Depression (mean, 95% CI)*	8.2 (6.0-10.3)	4.3 (2.7-5.8)	5.3 (5.0-5.5)
<i>0-7 (none) (n, %)</i>	12 (52%)	19 (68%)	729 (72%)
<i>8-10 (mild) (n, %)</i>	4 (17%)	6 (21%)	195 (19%)
<i>11-21 (moderate to severe) (n, %)</i>	7 (30%)	3 (11%)	83 (8%)

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1 **Supplement 11: Comparison of Hospital Anxiety and Depression scale (HADS) scores in**
 2 **those with (n = 788) and without personal protective equipment (PPE) shortages (n = 270)**
 3 **(Total n = 1058).**

	PPE shortages	No PPE shortages
Anxiety (mean, 95% CI)	7.4 (7.1-7.7)	5.5 (5.0-6.0)
0-7 (<i>none</i>)	430 (55%)	190 (70%)
8-10 (<i>mild</i>)	183 (23%)	46 (17%)
11-21 (<i>moderate to severe</i>)	175 (22%)	34 (13%)
Depression (mean, 95% CI)	5.7 (5.5-6.0)	4.1 (3.7-4.5)
0-7 (<i>none</i>)	540 (69%)	220 (81%)
8-10 (<i>mild</i>)	167 (21%)	38 (14%)
11-21 (<i>moderate to severe</i>)	81 (10%)	12 (4%)

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