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SHORT COMMUNICATION



Infertility remains a top stressor despite the COVID-19 pandemic

**BIOGRAPHY**

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ABSTRACT

Research question: What is the psychological impact of the COVID-19 pandemic on infertility patients?

Design: An anonymous cross-sectional online survey was sent to patients who attended a large university-affiliated infertility practice in the USA between 1 January 2019 and 1 April 2020. At three different time-points respondents were asked to note their top three stressors, from a list of 10 commonly reported life stressors.

Results: The questionnaire was sent to 10,481 patients, with 3604 responses (response rate 34%) received. A total of 2202 non-pregnant female respondents were included in the final analysis. One-third of respondents had a prior diagnosis of an anxiety disorder, and 11% reported taking anxiolytic medications; over one-quarter had a prior diagnosis of a depressive disorder and 11% reported taking antidepressant medications. At all three time-points, infertility was noted to be the most frequent top stressor. Coronavirus was noted to be the third most common stressor among the respondents in early March but, at the time of writing, is similar to that of infertility (63% and 66%, respectively). A total of 6% of patients stated that infertility treatment, including IVF, should not be offered during the COVID-19 pandemic.

Conclusion: Despite the unprecedented global pandemic of COVID-19, causing economic and societal uncertainty, the stress of infertility remains significant and is comparable a stressor to the pandemic itself.

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INTRODUCTION

Infertility treatment in the USA and Europe stopped abruptly in mid-March 2020 owing to the COVID-19 pandemic, upon the recommendations of the American Society for Reproductive Medicine and European Society of Human Reproduction and Embryology (ARSM, 2020; ESHRE, 2020).

Infertile women experience high levels of distress: in a recent study of women undergoing infertility treatment, 56% scored in the clinical range for depression and 76% for anxiety (Pasch et al., 2016). Approximately 13% of infertile women report taking antidepressant medications (Pedro et al., 2019). We sought to assess the psychological impact of the COVID-19 pandemic on infertility patients.

MATERIALS AND METHODS

An anonymous 26-item online questionnaire was sent to patients who attended a large university-affiliated infertility practice in New England, USA, between 1 January 2019 and 1 April 2020. The study was determined to be of exempt status by the Institutional Review Board at Beth Israel Deaconess Medical Center on 7 April 2020 (IRB protocol number: 2020P000322).

The questionnaire was sent to 10,481 patients on 9 April 2020: 3604 responses (response rate 34%) were received from 9 April to 16 April. Respondents were asked to note their top three stressors, from a list of 10 commonly reported life stressors: their job, family, infertility, money, health, friends, partner, the coronavirus, insurance status and 'other', in which case the respondents could specify another stressor. In our final analysis we excluded patients who reported being pregnant/post-partum and therefore not currently pursuing infertility treatment, as well as a small number of male respondents.

RESULTS

We included 2202 non-pregnant female respondents in the final analysis. TABLE 1 outlines respondents' characteristics. The majority of respondents were white, married or in a domestic partnership, had completed college and were employed. Almost one-third

of respondents worked in healthcare. Two-thirds of respondents were awaiting infertility treatment. One-third of respondents had a prior diagnosis of an anxiety disorder and 11% reported taking anxiolytic medications; over one-quarter had a prior diagnosis of a depressive disorder and 11% reported taking antidepressant medications. The mean

anxiety and depression scores reported were 3.8 and 3.1, respectively (7-point Likert scale).

Respondents were asked to note their top three stressors: in January 2020 (before the COVID-19 pandemic), in early March (at the beginning) and currently (in the midst of the

TABLE 1 RESPONDENT CHARACTERISTICS

Characteristic	Value ^a (n = 2202)
Mean age in years (SD)	35.4 (4.6)
Race	
White	1758 (79.8)
Black	69 (3.1)
Hispanic	141 (6.4)
Asian	180 (8.2)
Other	54 (2.5)
Married/in a domestic partnership	2019 (91.7)
Hold a college or graduate degree	1811 (82.2)
Currently employed full time	1712 (77.7)
Work in healthcare	647 (29.4)
Already have children	612 (27.8)
Prior fertility treatment	1086 (49.3)
Patients waiting for tests/results	569 (25.8)
Patients waiting for treatment	1472 (66.8)
Prefer not to say	161 (7.3)
Prior diagnosis of anxiety	746 (33.9)
currently medicating	245 (11.1)
Prior diagnosis of depression	578 (26.2)
currently medicating	247 (11.2)
Top 3 stressors in January	
Infertility	1786 (81.1)
Your job	1438 (65.3)
Money	952 (43.2)
Top 3 stressors in early March	
Infertility	1527 (69.3)
Your job	1194 (54.2)
Coronavirus	1180 (53.6)
Top 3 stressors currently	
Infertility	1461 (66.4)
Coronavirus	1384 (62.9)
Your job	1108 (50.3)
Mean (SD) current anxiety (1–7 scale)	3.8 (1.5)
Mean (SD) current depression (1–7 scale)	3.1 (1.7)
Should infertility treatment be offered during pandemic?	
Yes	684 (31.2)
Unsure/depends on patient's circumstances	1377 (62.8)
No	131 (6.0)

^a Values are given as n (%) unless otherwise stated.

pandemic). For example, a total of 81% of respondents cited infertility as one of their top three stressors in January, and 65% and 43% reported their job and money as one of their top three stressors at that time-point (TABLE 1).

At all three time-points, infertility was noted to be the most frequently reported top stressor. Coronavirus was noted to be the third most common stressor among the respondents in early March but is currently similar to that of infertility (63% and 66%, respectively). Only 6% of patients stated that infertility treatment, including IVF, should not be offered during the COVID-19 pandemic.

DISCUSSION

Infertility is a significant public health issue in the USA, with 7.3 million (12%) women aged 15–44 years reporting the use of infertility services (Chandra *et al.*, 2014). Even in the midst of the COVID-19 pandemic, a minority of respondents stated that infertility treatments should not be offered at this time. While mathematical models predicting the epidemiology of the COVID-19 pandemic are not without pitfalls, it is likely that the pandemic will be disruptive to the health system for some time (Jewell *et al.*, 2020). This delay in treatment will only compound the stress of the infertile population.

Limitations of this study include its response rate. Despite a large number of respondents, it is possible that this is not a representative sample, which we are unable to verify owing to the anonymous nature of the survey. In addition, the survey was distributed in the New England area of the USA and the responses may not be generalizable.

Despite the unprecedented global pandemic of COVID-19, causing economic and societal uncertainty, the stress of infertility remains significant and is a comparable stressor to the pandemic itself.

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Received 29 April 2020; received in revised form 7 May 2020; accepted 28 May 2020.