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The emotional impact of the Covid-19 pandemic in women facing infertility

Ana Galhardo ^{a,b}, Naír Carolino ^a, Bárbara Monteiro ^a and Marina Cunha ^{a,b}

^aInstituto Superior Miguel Torga, Psychology Department, Coimbra, Portugal; ^bFaculty of Psychology and Educational Sciences, Univ Coimbra, CINEICC, FPCEUC, Coimbra, Portugal

ABSTRACT

People facing infertility are inevitably affected by COVID-19 pandemic, having to delay their parental projects. This study aimed to explore the emotional impact (depression and anxiety symptoms and perceived stress) of the COVID-19 pandemic in Portuguese women pursuing assisted reproductive technology (ART). Results showed 67.4% of participants were in confinement but were dealing with it in a reasonably positive way. Women who continued to work at their workplace presented significantly higher levels of depressive and anxiety symptoms than those who stayed at home. No significant differences were found regarding depression and anxiety symptoms scores when comparing the current sample with an infertility reference sample and a community sample. Depressive and anxiety symptoms remained stable, but there was a significant decrease in perceived stress over the eight-week period. Although these findings do not suggest a worsening of psychological difficulties due to the COVID-19 pandemic, health professionals should be attentive to patients' long-term psychological consequences. It may be helpful to provide additional psychological support to women when restarting their ART treatments.

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KEYWORDS

Infertility; Covid-19 pandemic; emotional impact; fertility treatment suspension

Introduction

The unprecedented global pandemic of COVID-19 conveyed a wide range of consequences all over the world. The European Society for Human Reproduction and Embryology (ESHRE) recommended that 'all fertility patients considering or planning treatment, even if they do not meet the diagnostic criteria for COVID-19 infection, should avoid becoming pregnant at this time'.

People facing infertility are inevitably affected by COVID-19 pandemic, having to delay their parental projects. Barra et al. (2020) found an increase in anxiety and depression levels in women who had their ART treatments suspended. An enhancement in anxiety symptoms was also reported by Tokgoz et al. (2020). Turocy et al. (2020) stated that 85% of these patients were moderately to extremely upset regarding treatment cancellation and Boivin et al. (2020) indicated that patients perceived fertility clinic

closure as having a negative impact on their lives, being uncontrollable and stressful. A negative impact on women's mental health and quality of life due to ART treatments suspension was also reported by Gordon and Balsom (2020). Additionally, COVID-19 pandemic and the suspension of fertility treatments contributed to higher distress levels in people undergoing treatment (Ben-Kimhy et al., 2020; Esposito et al., 2020).

The extent and repercussions of this pandemic crisis are still unknown. This study aimed to explore the emotional impact of the COVID-19 pandemic in Portuguese women facing an infertility diagnosis who saw their treatment suspended due to the pandemic.

Methods

Participants

The current sample included 89 Portuguese women with a mean age of 35.27 ($SD = 4.13$) years old, ranging from 27 to 47 and presenting a mean of 14.80 ($SD = 3.23$) years of education. Participants were married/living with a partner ($n = 82$; 92.1%), followed by single ($n = 6$; 6.7%) and one woman (1.1%) was divorced. Participants had been diagnosed with infertility for 3.98 years ($SD = 4.56$). The majority had previously undergone infertility treatments ($n = 62$; 69.7%), and 27 (30.3%) were pursuing infertility medical treatment for the first time. A sub-sample of 34 women took part in the study second assessment moment (T2; eight-weeks later).

Instruments

A socio-demographic (sex, age, marital status, years of education, current professional status) and clinical form (infertility duration, previous treatment cycles) was used.

Data on COVID-19-related aspects (whether participants were in confinement or continued their professional activity at their workplace) were collected. Participants were asked to rate the impact of the COVID-19 pandemic in their infertility-related emotional state, their marital relationship (when applicable), and their social relationships, using a 5-point scale ranging from *very negative impact* (1) to *very positive impact* (5).

Depression Anxiety and Stress Scales-21 (DASS-21; Lovibond & Lovibond, 1995; Portuguese version by Pais-Ribeiro et al., 2004). In the current study, the depression and anxiety scales were used. Participants rate the frequency they experienced each symptom, using a 4-point scale from *did not apply to me at all* (0) to *applied to me very much or most of the time* (3). In this study, the Cronbach's alpha values were .92 and .91, for the depression and anxiety scales, correspondingly.

Perceived Stress Scale (PSS-10; Cohen et al., 1983; Portuguese version by Trigo et al., 2010). The PSS-10 is intended to capture the extent to which respondents find their lives uncontrollable, overloaded, and unpredictable. The PSS-10 items are rated regarding thoughts and feelings frequency using a 5-point scale ranging from *never* (0) to *very often* (4). In the current study, the PSS-10 Cronbach alpha value was .73.

Procedures

The research protocol was approved by the Instituto Superior Miguel Torga Ethics Committee (CE-P06-20). The Portuguese Fertility Association (APFertilidade) disseminated the study. All participants were informed about the study aims, voluntary participation and confidentiality, and gave informed consent before the online survey access. Data collection took place between April and July 2020. Women participating at T2 provided their email address and were contacted eight-weeks later (no reminder emails were sent).

Statistical analyses

Analyses were performed using the software SPSS v.26 (IBM Corp, 2016). Descriptive analyses were conducted. Independent samples *t*-tests were used to compare mean differences between two groups. One sample *t*-tests were computed to compare the current sample scores with the ones found in an infertility reference sample recruited online through the APFertilidade before the pandemic crisis (June-December 2018) (Galhardo et al., 2020). These two samples did not present differences in age, years of education, and infertility duration. Comparisons were also computed with a community sample of Portuguese women collected online during the COVID-19 outbreak (March 2020) (Paulino et al., 2020). Pearson correlation analyses were conducted to explore associations between infertility duration and psychopathological symptoms. Paired-samples *t*-tests were calculated to compare outcome measures at T1 and T2.

Results

At T1, 60 women (67.4%) were in confinement (not quarantine or isolation) and 29 (32.6%) continued their professional activity at workplace. Participants stated that they could deal with the confinement in a positive way, with a mean value of 3.43 ($SD = .77$). The COVID-19 impact on their marital relationship presented a mean value of 3.39 ($SD = .87$), and the impact on their overall social relationships 3.06 ($SD = .71$).

Women who continued to work at their workplace presented significantly higher levels of depressive ($t_{(87)} = -3.14$; $p = .002$; $M = 9.17$, $SD = 6.22$) and anxiety symptoms ($t_{(87)} = -2.94$; $p = .004$; $M = 7.45$; $SD = 6.65$), compared to women who stayed at home (Depression: $M = 5.52$; $SD = 4.55$; Anxiety: $M = 4.08$; $SD = 4.08$).

All participants ($N = 89$) reported their treatment was postponed. When questioned about COVID-19 pandemic impact on their infertility-related emotional state, the mean value was 2.13 ($SD = 1.04$).

Concerning depression and anxiety symptoms results are presented in Table 1. Participants perceived stress results were $M = 20.97$ ($SD = 5.62$).

No significant differences were found when comparing the current sample with an infertility reference sample or a community sample regarding depression or anxiety symptoms (Table 1). No significant association was found between infertility duration and symptoms of depression and anxiety or perceived stress ($p > .050$).

Table 1. Independent samples t-tests for depression and anxiety symptoms comparing the current sample mean scores with the ones of the infertility reference sample pre-Covid-19 and the community sample during Covid-19.

Measures	Current sam- ple (N = 89)		Infertility reference sample pre Covid-19 (N = 287)		<i>t</i> (88)		Community sam- ple during Covid-19 (N = 8,785)		<i>t</i> (88)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		<i>p</i>	<i>M</i>	<i>SD</i>		<i>p</i>
DASS-21 Depression	6.71	5.40	7.30	5.35	-1.04	.304	5.58	5.24	1.97	.052
DASS-21 Anxiety	5.18	5.27	4.23	4.09	1.70	.093	4.72	5.23	0.82	.413

DASS Depression = Depression subscale of the DASS-21; DASS Anxiety = Anxiety subscale of the DASS-21.

Table 2. Means, standard deviations and paired samples t-tests.

Measures	T1 (N = 34)		T2 (N = 34)		<i>t</i> (32)	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
DASS-21 Depression	5.38	4.82	4.88	4.66	.71	.481
DASS-21 Anxiety	3.50	4.16	3.91	4.11	-.53	.603
PSS	19.09	5.21	16.24	3.95	3.09	.004

DASS Depression = Depression scale of the DASS-21; DASS Anxiety = Anxiety scale of the DASS-21; PSS = Perceived Stress Scale.

Differences in psychopathological symptoms and perceived stress over time (eight-week interval) were analyzed through paired-samples t-tests. Descriptive statistics and mean comparisons between T1 and T2 are displayed in Table 2.

No significant differences were found between T1 and T2 concerning depressive and anxiety symptoms. A significant decrease in perceived stress levels was reported. When exploring differences in demographic and clinical variables between participants who completed the self-report instruments only at T1 and those who answered the questionnaires at T1 and T2 no significant differences were found ($p > .05$). Concerning outcome measures, no significant differences were found in depressive symptoms ($p > .05$). Significant differences were found between these two groups concerning anxiety symptoms ($t = -2.43$; $p = .017$), and perceived stress ($t = -2.61$; $p = .011$). Participants who decided not to take part at T2 showed higher anxiety symptoms ($M = 6.22$; $SD = 5.65$ vs. $M = 3.50$; $SD = 4.16$) and higher perceived stress ($M = 22.13$; $SD = 5.58$ vs. $M = 19.09$; $SD = 5.21$).

Discussion

This study explored the emotional impact of COVID-19 pandemic in Portuguese women who were pursuing ART treatment and saw it postponed. Results showed that most participants were in confinement but were dealing with it in a reasonably positive way, not identifying a particularly negative impact in their marital or social relationships. These findings are aligned with previous research showing that couples' relationships during lockdown may have been strengthened, particularly when they have no children (Günther-Bel et al., 2020).

Women who continued to work at their workplace presented significantly higher depressive and anxiety symptoms than the ones who stayed at home. Similar results were found in a sample of patients with inflammatory bowel disease (IBD) (Trindade & Ferreira,

2020). One may hypothesize that staying at home may induce a higher sense of safety by not being exposed to the threat of being contaminated or contributing to infecting others.

All participants had their treatment cycles postponed and considered that the COVID-19 pandemic impact on their infertility-related emotional state was negative. These data were by the ones found in several studies (e.g. Esposito et al., 2020; Turocy et al., 2020; Vaughan et al., 2020).

No significant differences were found between the current sample scores and the infertility reference sample (Galhardo et al., 2020), suggesting that women undergoing ART treatment tend to have a similar mental health profile in pandemic circumstances. A similar finding was reported by Trindade and Ferreira (2020) with IBD patients. Notably, the study participation occurred after mandatory confinement, there were signs of a better knowledge regarding safety procedures, and political measures were contributing to minimizing risks. There was also the re-opening of fertility clinics, and women could expect their treatment cycles to be rescheduled.

Perceived stress at T1 was significantly higher than the one reported eight-weeks later. A similar result was found by Vicario-Merino and Muñoz-Agustin (2020). In general, this may reflect an adaptation process to the new reality using more effective ways of dealing with the demands of the pandemic. Nevertheless, participants who only took part at T1 presented higher anxiety symptoms and perceived stress when compared to those participating at T2, which might have also influenced the longitudinal data.

There are limitations that should be acknowledged. Online recruitment may contribute to selection bias. Data were collected by general self-report instruments and other assessment methods may capture more detailed information. Finally, Portugal's situation at the time of data collection may have influenced the current findings. During data collection, Portugal presented low numbers of COVID-19 cases and deaths compared to other countries.

Regardless of these limitations, this study was the first conducted in Portugal, addressing psychological impact of COVID-19 pandemic in women whose treatments were interrupted or delayed. Although these findings do not suggest a worsening of psychological difficulties, more attention should be paid to psychological consequences among women pursuing infertility treatment during the pandemic. This will allow the provision of additional psychological support to women restarting their treatment cycles, when appropriate.

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ORCID

Ana Galhardo  <http://orcid.org/0000-0002-3484-6683>

Nair Carolino  <http://orcid.org/0000-0002-8131-1737>

Bárbara Monteiro  <http://orcid.org/0000-0002-4706-1914>

Marina Cunha  <http://orcid.org/0000-0002-5957-1903>

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