

Fertility patients under COVID-19: Attitudes, Perceptions, and Psychological Reactions

Running title: Fertility patients during COVID-19

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Study question: What are the perceptions of infertility patients and the factors correlating with their psychological distress, following suspension of fertility treatments during the COVID-19 pandemic?

Summary answer: Most patients preferred to resume treatment given the chance regardless of background characteristics; higher self-mastery and greater perceived social support were associated with lower distress, while feeling helpless was associated with higher distress.

What is known already: Infertility diagnosis and treatment frequently result in significant psychological distress. Recently published data has shown that clinic closure during the COVID-19 pandemic was associated with a sharp increase in the prevalence of anxiety and depression among infertile patients undergoing IVF and was perceived as an uncontrollable and stressful event. Personal resources play an important protective role in times of crisis, helping reduce levels of distress.

Study design, size, duration: This cross-sectional questionnaire study included patients whose fertility treatment was suspended following the COVID-19 pandemic, in a tertiary hospital. The survey was delivered to 297 patients within 12 days at the beginning of April 2020.

Participants/materials, setting, methods: The self-administered questionnaire included items addressing: 1. patients' demographic characteristics, 2. anxiety related to COVID-19 infection risk and level of social support, 3. patients' perceptions of the new guidelines and description of subsequently related emotions, and 4. two validated scales assessing levels of emotional distress and self-mastery. Multivariate analysis was conducted to assess factors alleviating or increasing emotional distress during the COVID-19 pandemic.

Main results and the role of chance: There were 168 patients who completed the survey, giving a response rate of 57%. Study variables in the regression model explained 38.9% of the

variance in psychological distress experienced by patients during treatment suspension. None of the background characteristics (e.g. age, marital status, parity, economic level or duration of treatments) had a significant contribution. Feeling helpless following the suspension of treatments was associated with higher distress ($P < 0.01$). Higher self-mastery and greater perceived social support were associated with lower distress ($p < 0.01$). Despite the ministry of health's decision, 72% of patients wished to resume treatment at the time of survey.

Limitations, reasons for caution: This was a cross-sectional study, thus information about patients' characteristics prior to the COVID-19 pandemic was not available. The length and implications of this pandemic are unknown. Therefore, the ability to draw conclusions about the psychological consequences of the crisis is limited at this point of time.

Wider implications of the findings: Personal resources play an important protective role in times of crisis, helping to reduce levels of distress. Study findings suggest that attention should be paid to strengthening and empowering patients' personal resources together with directly confronting and containing feelings of helplessness. In line with the ESHRE guidelines, especially at this time of high levels of distress, it is imperative to offer emotional support to reduce stress and concerns. Furthermore, as the pandemic is stabilising, resumption of treatment should be considered as soon as appropriate according to local conditions.

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Keywords: COVID-19; infertility; stress; fertility treatments; IVF

Introduction

The Corona Virus Disease-19 (COVID-19) pandemic started in late December 2019 in Hubei Province, China (Huang *et al.*, 2020), and has since spread rapidly around the globe with many countries in Europe and North America being severely affected (Practice, 2020; WHO, 2020). Its rapid dissemination and exponential infection rate led to a swift implementation of national emergency measures aiming at mitigating risk for the general population, including both patients and healthcare providers. These included self-hygiene, social distancing and widespread imposed quarantines. On March 11, 20 days after the first Israeli COVID-19 patient was confirmed, the Israeli government began enforcing social distancing including restrictions on gatherings, school closures and public transportation limitations. A national state of emergency state declared, making the restrictions legally enforceable. Similar restrictions were enforced by many affected countries around the globe. In some countries, including Israel, in order to support current public measures and to conserve medical resources for critical care and respiratory support, all elective and non-urgent medical procedures, including reproductive medicine procedures, were discontinued.

On March 17, 2020, the American Society for Reproductive Medicine (ASRM) published guidelines, followed a few days later by the European Society for Human Reproduction and Embryology (ESHRE), recommending the suspension of initiation of all new treatment cycles, excluding urgent pre-gonadotoxic treatment cryopreservation. In case of ongoing treatments, cycles could be continued with a recommendation of embryo cryopreservation. All other elective surgeries and non-urgent reproductive diagnostic procedures were suspended. At the same time, medical providers were requested to inform

patients about the fact that fetal and maternal risks of COVID-19 infection in pregnancy were still unknown (Rasmussen *et al.*, 2020). On March 22nd, the Israeli Fertility Association and the Ministry of Health adopted the ASRM and ESHRE guidelines (Israel Ministry of Health). Following this decision, new fertility treatments and diagnostic procedures in all public and private units were immediately suspended. Ongoing cycles were completed, and embryo transfers were performed, based on unit policy and patient preference.

The inability to conceive has a significant negative impact on women's psychological well-being (Maroufizadeh *et al.*, 2015) and is experienced as devastating (Greil *et al.*, 2010). Infertility diagnosis and fertility treatments are described as severe stressors which arouse significant psychological distress (Greil, 1997; Verhaak *et al.*, 2007) and a range of other emotional responses (Cassidy and Sintrovani, 2008) such as anger, depression, anxiety, feelings of worthlessness (Deka and Sarma, 2010), loss of control, social isolation, a sense of stigma (Greil *et al.*, 2010) and a general disruption in the developmental trajectory of adulthood (Cousineau and Domar, 2007). All these troubling reactions may be exacerbated during a global crisis, such as the one experienced these days with the spread of the COVID-19.

Studies conducted on reactions to infertility and fertility treatments have identified several factors which may contribute to the emotional distress, including mostly primary infertility (Verhaak *et al.*, n.d.; Epstein and Rosenberg, 2005; Greil *et al.*, 2011), older age (Greil *et al.*, 2011; Qadir *et al.*, 2015), lower educational level and socioeconomic status (Fekkes *et al.*, 2003; Greil *et al.*, 2011), duration of infertility (van Balen and Trimbos-Kemper, 1993) and the intense focus on having a child (Collins *et al.*, 1992). Nonetheless, there are factors that may mitigate and even shield from emotional distress, including

resilience (Ridenour *et al.*, 2009), adaptive coping strategies e.g. problem-focused coping (Musa *et al.*, 2014), emotional processing and expression (Berghuis, J. P., Stanton, 2002), social support (Verhaak *et al.*, 2005a; Peterson *et al.*, 2006) and a sense that the individual is in control i.e. self-mastery (Scheier *et al.*, 1994; Aflakseir and Zarei, 2013).

Societies and individuals affected by large-scale disasters, like global pandemics, can develop stress related disorders (Ćosić *et al.*, 2020). Former studies on emotional responses to pandemics or quarantine have focused on emotions such as anger, sadness, helplessness, relief, anxiety and confusion (Jin *et al.*, 2007; Marjanovic *et al.*, 2007; Reynolds *et al.*, 2008; Kim and Niederdeppe, 2013; Jeong *et al.*, 2016; Brooks *et al.*, 2020; Ćosić *et al.*, 2020). In the case of women in the midst of fertility treatments, their treatments were abruptly suspended, leaving them with a high level of uncertainty and loss of control concerning the future. In combination with social distancing and partial loss of social support, these emotions could possibly be intensified, contributing to higher levels of distress. Recently published data demonstrated that fertility clinic closure during the COVID-19 pandemic was associated with a sharp increase in the prevalence of anxiety and depression among patients undergoing fertility treatments (Ferrero *et al.*, 2020) and was perceived as an uncontrollable and stressful event (Boivin *et al.*, 2020).

The objective of the current study was to describe attitudes, perceptions and emotional distress of fertility patients, following suspension of infertility treatments during the COVID-19 pandemic. First, we aimed to understand whether patients, who are eager to conceive, believe the decision to suspend treatment to be justified and whether, given the choice, they would wish to resume treatments despite the COVID-19 infection risk. We hypothesised that patients of older age and nulliparity will be less inclined to concur with the

guidelines and will be anxious to resume treatment, while anxiety related to COVID-19 infection will lead to opposite perceptions.

We then focused on factors that may contribute to the psychological distress experienced by infertility patients during the pandemic, some of which may allow targeted psychosocial intervention for patients who are at higher risk of distress. Specifically, based on the literature reviewed above, the study hypotheses were as follows. 1. Sociodemographic variables and infertility history will be associated with psychological distress, so that nulliparity, older age, lower socioeconomic level and longer duration of fertility treatments, will be associated with higher levels of psychological distress. 2. COVID-19 related variables including COVID-19 infection anxiety and negative emotional response to treatment suspension (e.g. anger, helplessness) will be associated with higher levels of distress. 3. Women's personal resources such as self- mastery and perceived social support will be negatively associated with levels of psychological distress.

Methods

This cross-sectional questionnaire study was conducted at the IVF unit at Shamir Medical Center, a large Israeli tertiary hospital. Beginning March 22, according to international and national recommendations, all patients in the midst of ongoing treatment in our unit were advised to avoid embryo transfer. Frozen embryo cycles were cancelled and patients making inquiries about starting new cycles were informed of the treatment suspension by one of our team members. All patients with a valid email address received a notification specifying the new restrictions. Phone consults were continued throughout the study period. As part of the study recruitment, a personal email from the IVF unit was sent to

all patients with a valid email address, who received a treatment plan as of January 2020 and whose treatment plan had been postponed or discontinued following the new COVID-19 guidelines. Patients received an explanation of the study and were asked to actively provide their consent to participate by following a link directing them to the questionnaire. The survey was distributed to a total of 297 patients between April 7th to April 14th, 2020, with phone and email reminders on the following days. Data collection ended on April 18th. The questionnaire was designed and distributed via the google-forms platform. Responses were anonymous with no identifying details collected. All patients responding to the survey were included.

The survey, designed for the current study, consisted of a four-part self-administered questionnaire. The first part included questions addressing the participants' background (age, marital status, parity, religion, economic level) and infertility history (diagnosis and duration of treatment).

The second part evaluated COVID-19 anxiety-related items, generating two scores. For the the **COVID-19-contagion anxiety score**, participants were asked to score their anxiety level regarding: (1) being infected by COVID-19; (2) a family member being infected by COVID-19; and (3) visiting a clinic or hospital for examination. Responses were marked on a scale from 1 (very low) to 5 (very high). Scores were first given for each of the items separately, and the score was formulated based on the average of patients' responses to all three items (Cronbach's alpha was 0.77) with higher scores indicating greater anxiety. For the **perceived social support score**; exceptions of social support from family and friends during the COVID-19 pandemic were determined by items relating to each source of support. Responses were marked on a scale from 1 (very little) to 5 (very much) (Cronbach's alpha was 0.83, $r=0.71$, $p<0.001$). Based on the high correlation between the items, the final score

was calculated for each participant by averaging her responses to both items, with higher scores indicating greater support.

The third part of the questionnaire assessed women's perceptions of the new guidelines, and description of emotions following fertility treatment suspension. First, patients were asked whether they believe the Ministry of Health's decision was justified and whether they would resume treatment if given the choice. In case they did not wish to resume treatment, they were asked to specify the reasons for their decision. Second, patients were asked to describe the main feelings they had in response to the Ministry of Health guidelines. Those included anger, helplessness, anxiety, sadness, confusion and relief.

The last part consisted of two validated scales. The **Mental Health Inventory-Short Form** (MHI-5; Stewart et al., 1988), derived from the original MHI (Veit & Ware, 1983) comprised of five items relating to the participant's well-being (e.g., "I felt relaxed and stress-free") and distress (e.g., "I felt sad and upset") during the past week. Responses were marked on a 6-point scale ranging from 1 (never) to 6 (all the time). Cronbach's alpha was 0.80. The total score was calculated by averaging the responses to all five items (after adjusting those that are reverse-coded), with a higher score reflecting greater psychological distress. The **Self-Mastery Scale** (Pearlin & Schooler, 1978), a seven-item questionnaire, assesses the participant's sense of control over their life (e.g., "I have little control over the things that happen to me"). Responses were marked on a 4-point scale ranging from 1 (strongly disagree) to 4 (strongly agree). Cronbach's alpha was 0.74. A self-mastery score was calculated for each participant by averaging her responses to all items, with higher scores indicating a higher sense of self-mastery.

Statistical analysis

Results are presented in tabular format. Categorical variables are summarised with counts and percentages. Continuous measures are summarised with counts, mean, standard deviation, minimum and maximum.

A series of F-tests and chi square tests were computed to examine differences in the study background and COVID-19 related variables according to whether participants believed the decision to suspend treatment to be justified and whether they wished to renew the treatments. Next, Pearson correlations were calculated between the study independent variables and women's psychological distress. Finally, based on our hypothesis, a hierarchical multiple regression was performed to determine the contribution of the independent variables to psychological distress (Petrocelli, 2003). The variables were entered as follows: step 1, background variables; step 2, COVID-19-related variables including contagion anxiety, perceptions and emotional response following suspension of treatment; and step 3, the resources of self-mastery and perceived social support.

Analyses were carried out using IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp. Released 2017.

Ethical approval

The study was approved by the Shamir Medical Center Institutional Review Board.

Results

Of 297 women, 168 completed the survey, giving a response rate of 57%. Demographic characteristics are presented in Table 1. Mean age of participants was 37 years (SD= 6.23, range 23-54). About a quarter of patients were single (never married/divorced/widowed) and

the rest were married or in a relationship. More than half of patients were nulliparous. Most participants reported an average income.

Half the participants believed the decision to stop all treatments due to the pandemic was justified. The main reason cited for treatment cessation was concern about patients' health (31%), followed by uncertainty regarding the risks of COVID-19 infection on embryo development and the pregnancy (28%), shifting of health resources for the COVID-19 infected patients (17%) and concern about providers' health (8%). Comparative tests, between women who believed the decision to suspend treatment to be justified and those who did not, showed no difference across personal characteristics (Supplementary Table 1). Covid-19 contagion anxiety score was higher among women who believed the decision to suspend treatment was justified. Main feelings reported by participants in response to suspending treatment were sadness and helplessness. A minority felt relieved (Table 2).

Of the participants, 72% preferred to resume fertility treatments, given the choice, despite the COVID-19 pandemic (Table 3). Patients who wished to resume treatments had similar demographic background to those who did not, except for shorter duration of treatment ($F=7.53, p<0.01$). Patients preferring to avoid treatment resumption achieved a higher COVID-19 contagion anxiety score ($F=25.03, p<0.001$). The main reason for not wishing to resume treatments was the concern of being infected (79%). This was followed by participants financial concerns (17%), risks for the pregnancy (16%), and fear of delivering a baby in the current situation (7%) (participants could select more than one answer).

Pearson Correlations (Table 4) assessing the factors contributing to psychological distress were calculated prior to regressing independent indicators on the psychological distress. They

showed that older age and being single were associated with greater distress. In addition, perceiving the decision to suspend treatments as unjustified, wishing to renew treatment and feeling helpless were correlated with higher psychological distress, whereas higher self-mastery and greater perceived social support were correlated with lower psychological distress

The final regression model indicated that 38.9% of the variance in psychological distress was explained by the regression model (Table 4). Step 1 contributed 4% to the explained variance, with none of the background characteristics having a significant effect on the distress. Step 2 showed an additional contribution of 15.0% ($p < 0.001$) as a result of adding the Covid-19-related variables. Finally, step 3 added 19.9% to the explained variance when personal and social resources were added. To assess the absolute power of the change, effect sizes were added. The effect sizes of the second and third steps (0.185 and 0.311 respectively) were considered significant (Ellis, 2010). In the second step, none of the indicators resulted in a significant effect on the level of distress except for the positive association between helplessness and distress ($\beta = 0.36$, $p < 0.001$). In the third step, both self-mastery and perceived social support showed a negative effect on distress, that is, higher values of these resources were associated with lower distress (self-mastery: $\beta = -0.34$, $p < 0.001$; social support: $\beta = -0.31$, $p < 0.001$).

Discussion

As the COVID-19 pandemic spread across the globe, national and professional authorities suspended non-urgent fertility treatments, placing an already vulnerable population in a place of uncertainty. It seemed important to conduct an early study during this

crisis, in order to try and understand how clinicians can assist women overcome their difficulties at this time. This study describes attitudes, perceptions and emotional distress related to suspension of fertility treatments due to the COVID-19 pandemic, and offers a glimpse of patients' state of mind in relation to the current situation.

Despite the risk of the COVID-19 infection and the potential influence on the mother and embryo during pregnancy, half the patients, during the peak of the pandemic, believed the decision to suspend treatments was unjustified, and most patients would choose to resume fertility treatments, if given a choice. Patients less worried about COVID-19 infection (lower COVID-19 contagion score) were more likely to consider the suspension as unjustified and to wish to resume treatment. Infertility patients, being mostly young and healthy, are not a risk group for COVID-19 complications. This might explain why the majority of patients would have liked to resume treatment despite the risk of being infected, in line with the health belief model, suggesting that lower perceptions of susceptibility justify a lower perceived need for prevention (Rosenstock *et al.*, 1988). The willingness to resume treatment despite the current situation, in contrast to our hypothesis, was not associated with background characteristics. It seems that since all these patients made a decision, prior to the COVID-19 pandemic, to undergo fertility treatments despite the difficulties accompanying this process, they all, regardless of personal and social differences, wished like to continue pursuing motherhood.

Infertility diagnosis and fertility treatments can cause depression and high levels of anxiety (Verhaak *et al.*, 2005b, 2007; Gana and Jakubowska, 2016). Even under ordinary circumstances, cancellation of treatment cycles has been shown to impact patients' quality of life score (Heredia *et al.*, 2013). Fertility patients, at this time, in addition to the general distress due to the pandemic, face a huge emotional burden of cycle cancellation for an

indefinite period of time. Even though significant associations between older age and being single to higher psychological distress were found, these associations were lost in the hierarchical regression, in which, in contrast to our a-priori hypothesis, none of the sociodemographic and infertility history variables were related to psychological distress. This seems to indicate that women's psychological distress during the suspension of treatments is not a function of their background.

Evidently, in line with our hypothesis, the highest proportion of explained variance of emotional distress was derived from women's personal resources: their perceptions that they have control over their lives and the support provided to them by their family members and friends. This is consistent with previous findings, indicating that personal resources play an important protective role in times of crisis, helping to reduce levels of distress (Aflakseir and Zarei, 2013; Musa *et al.*, 2014).

Social support, defined as the level of receiving kindness, companionship and attention from family members, friends and others (Sarafino, E. P., Smith, 2014), is known to play a key role in the stress and coping process (Schwarzer and Knoll, 2007). The literature highlights perceived social support as a critical component to infertility adjustment (Martins *et al.*, n.d.; Slade *et al.*, n.d.) that contributes to risk reduction of psychological distress (Lechner *et al.*, 2007). These previous studies strengthen our results demonstrating that a higher social support score is associated with lower emotional distress, becoming even more important during the pandemic, when social distancing is enforced.

We have focused on self-mastery in our study as loss of control is an inherent part of both the fertility treatment process and of dealing with the pandemic. Higher self-mastery

scores were associated with lower psychological distress scores. Self-mastery has been conceptualised as the perception of the individual that he or she has control over life events (Pearlin and Schooler, 1978). The individual feels capable of withstanding and overcoming stressful circumstances through personal effort (Pearlin *et al.*, 1981). Our study results are in line with previous studies examining the contribution of self-mastery to the level of distress accompanying infertility (Gourounti *et al.*, 2012; Ben Shlomo *et al.*, 2017).

In contrast, feeling of helplessness, reflecting difficulty in coping with unpredictable and uncontrollable aversive events, was associated with higher distress in the regression model. Neither pandemic-related anxieties nor other emotional responses like anger, sadness or relief were associated with the level of distress. This probably reflects the fact that women felt overwhelmed with the need to adjust to a decision they had no control over, in the process of fertility treatments that are emotionally demanding by themselves. The decision to abruptly discontinue this process, left them with a feeling of abandonment without any ability to influence the situation, which in turn may have increased feelings of helplessness. The fact that there was a significant positive association between feeling helpless and psychological distress, above and beyond the women's background and other emotional responses, highlights the magnitude of this state of mind.

Women, forced to abruptly suspend their fertility treatments for an unlimited period, are susceptible to psychological distress. Our study provides information that may help develop tools to improve coping with the stressful external situation, by strengthening and empowering their personal resources together with directly confronting and intervening in their feelings of helplessness, regardless of their background characteristics. The fact that the most dominant variables in a woman's experience of distress are personal resources, informs

physicians and psychotherapeutic clinicians about proper ways to manage and transform the patient's experience. Whereas the external situation (the infertility problem or the pandemic) is given, personal resources and perceptions can be altered to help women traverse periods of crisis with lower emotional costs.

While clinicians should routinely encourage women undergoing fertility treatments to consider openly discussing infertility with people in their social support network (Ridenour *et al.*, 2009), in times of quarantine and limited social interactions, online support groups are an effective intervention for increasing perceived social support and promoting personal growth (Pan *et al.*, 2005). These could include stress management techniques, such as mindfulness and guided imagery, that are effective in reducing helplessness (Stanisławski, 2019) and distress, as well as increasing a sense of self mastery (Varvogli and Darviri, 2011). The unknown duration of clinics closure and possible implications on future parenthood may contribute to a sense of loss of control (Boivin *et al.*, 2020). Thus, healthcare providers should promote patient's self-mastery during this time by scheduled communications (via mail, phone, unit website, social media) with authoritative updates, estimations regarding clinic reopening and prioritisation of the waitlist (Boivin *et al.*, 2020), and by providing treatment plans in advance to be implemented immediately when permitted. Patients can also be reassured that a treatment delay of up to six months, even with diminished ovarian reserve, does not affect pregnancy outcomes in most cases (Romanski *et al.*, 2020). In addition, promoting lifestyle changes including exercise and healthy diet, to optimise success once treatments resume, might provide patients with a meaningful goal during the shutdown. These interventions, together with active and attentive listening (Jagosh *et al.*, 2011) and validation of the women's feelings (Roter and Hall, 2006), can be implemented immediately, allowing the medical and psychosocial staff to affect women's well-being in real time.

There are several limitations to our study. First, we included participants from one IVF unit which may limit the generalisability of the findings. However, several facts support the representativeness of our study population. First, our unit is based in a tertiary hospital, centrally located, serving a population of over 600,000 people. Second, the high response rate of 56.6% enabled heterogeneity as was evident from the distribution of the background variables. Third, the patient distribution in our study sample (by age and marital status) represents the overall unit population as well as of other IVF units in Israel with which we have compared. Another limitation stems from the cross-sectional design of our study that does not enable comparison to characteristics of infertility patients prior to the pandemic. A further limitation was that the questionnaire was sent via e-mail only to women, thus only women feeling comfortable with this platform participated. Same-sex male fertility treatment is illegal in Israel; thus, male populations, which might have different emotional reactions, were not represented in our study. Women seem to be more negatively affected than men by infertility and ART according to several studies (Andrews *et al.*, 1992; Beaurepaire *et al.*, 1994; Holter *et al.*, 2007). A survey of the psychological impact of treatment suspension on same-sex male patients and on spouses of fertility patients would be of interest. Finally, much about this pandemic including its duration and health implications, is still unknown, limiting the ability to draw conclusions about the crisis. Nevertheless, it is crucial to carry out studies in real time to monitor women's mental state of mind and to generate baseline data for future comparisons. Further studies are needed to examine the long-term psychological consequences of the pandemic among women undergoing infertility treatments.

Conclusions

This study explored the reaction of fertility patients forced to suspend treatment due to the COVID-19 pandemic. Most patients preferred to resume treatment despite possible risks and uncertainties. ESHRE guidelines published in 2015 show that providing routine psychosocial care has the potential to reduce stress and concerns (Gameiro *et al.*, 2015). At this time of psychological distress, described by our fertility patients, it may be crucial to contact them and, when in need, offer psychosocial support. Caregivers may use the data generated in this study to identify patients at risk for higher emotional distress and to adjust policies regarding treatment suspension in current and future events.

Authors' Roles

A.H, M.Y, R.BK, T.R.MA and A.K. designed the study. M.Y, S.A, I.G and A.K collected and assembled data. M.Y., R.BK and T.R.MA drafted the first version of the manuscript. T.R.MA, M.Y and L.MH contributed to data analysis and interpretation. A.H, A.K, M.Y, R.BK and T.R.MA revised the manuscript and approved the final submitted version.

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Conflict of Interest: The authors have nothing to declare.

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Table 1. Background Characteristics of the Study Population

	<i>N</i>	%
Total	168	100
Age		
23-34	53	32
35-40	51	30
41+	64	38
Marital Status		
In a relationship	120	71
Not in a relationship	48	29
Parity		
Nulliparous women	93	55.4
Parous women	75	44.6
Economic level		
Below average	14	8
Average	119	71
Above average	35	21
Duration of treatment		
0-6 months	66	39.3
7-12 months	27	16.1
13-18 months	26	15.5
19-24 months	14	8.3
25-36 months	16	9.5
Over 36 months	19	11.3
Infertility diagnosis		
Female factor	30	17.8
Male Factor	30	17.8
Unexplained	47	29.9
Combined	13	7.7
Oocyte donation	6	3.5
PGT ^a	14	8.3
Fertility preservation	26	15.4
Other	2	1.2
	Means	SD
Age	37.33	6.23
Duration of treatment	2.67	1.77

^a Preimplantation Genetic Testing

Table 2. Characteristics of Study Variables

	N	Means	SD	Range	Cronbach's Alpha
Distress	168	2.41	0.79	1.20-5	0.80
Self-Mastery	168	3.57	0.76	1.57-5	0.74
Perceived social support	168	3.61	1.04	1-5	0.83
Covid-19-related anxiety	168	3.04	1.05	1-5	0.77
	N	Percent			
Suspension is justified	84	50%			
Anger (yes)	39	23%			
Helplessness (yes)	102	61%			
Sadness (yes)	107	64%			
Relief (yes)	15	9%			
Distress	84	50%			

Table 3. Patients' Characteristics by Attitude to Treatment Renewal

	Wish to renew treatments		Do not wish to renew treatments		df	χ^2
	N	%	N	%		
Total	121	72	47	28		
Age					2	0.58
23-34	38	31	15	31		
35-40	35	29	16	34		
41+	48	40	16	34		
Marital Status					1	0.36
In a relationship	88	73	32	68		
Not in a relationship	33	27	15	32		
Parity					1	0.49
Parous	52	43	23	49		
Nulliparous	69	57	24	51		
Economic level					2	0.91
Below average	10	8	4	8		
Average	88	73	31	66		
Above average	23	19	12	26		
Duration of treatment					5	12.81*
0-6 months	54	44	12	26		
7-12 months	19	16	8	17		
13-18 months	18	15	8	17		
19-24 months	9	7	5	11		
25-36 months	13	11	3	6		
Over 36 months	8	7	11	23		
	Means	SD	Means	SD	df	F
Age	37.30	6.14	37.40	6.54	1,166	0.01
Duration of treatment	2.44	1.66	3.26	1.92	1,166	7.53**
Covid-19 specific anxiety	2.80	1.00	3.65	0.95	1,166	25.03***
Social support	3.53	1.07	3.81	0.92	1,166	2.47

*p<.05. **p<.01. ***p<.001.

Table 4. Hierarchical Regression Coefficients (Beta weights) for Psychological Distress

	<i>Pearson's r</i>	β	<i>t</i>	ΔR^2	R^2	<i>F</i>	<i>ES (f²)</i>
Step 1				0.040	0.040	1.34	0.041
Age	0.16*	0.11	1.22				
Marital Status ^a	-0.17*	-0.10	-1.15				
Children ^b	0.04	0.02	0.19				
Economic level	0.01	0.03	0.34				
Duration of treatment	-0.09	-0.08	-1.04				
Step 2				0.150***	0.190	3.00**	0.185
Age	-	0.13	1.52				
Marital Status	-	-0.08	-0.88				
Children	-	0.08	1.01				
Economic level	-	0.03	0.42				
Duration of treatment	-	-0.004	-0.06				
Covid-19 specific anxiety	-0.03	0.05	0.67				
Suspension is justified	-0.18*	-0.05	-0.48				
Wish to renew treatment	0.19*	0.02	0.17				
Anger (yes)	0.11	0.01	0.06				
Helplessness (yes)	0.38***	0.36	4.32***				
Sadness (yes)	0.10	0.05	0.66				
Relief (yes)	-0.08	-0.04	-0.49				
Step 3				0.199***	0.389	6.87***	0.311
Age	-	0.13	1.65				
Marital Status	-	-0.08	-1.04				
Children	-	0.10	1.45				
Economic level	-	0.03	0.42				
Duration of treatment	-	-0.04	-0.56				
Covid-19 specific anxiety	-	-0.01	-0.12				
Suspension is justified	-	-0.02	-0.18				
Wish to renew treatment		0.09	0.92				
Anger (yes)	-	-0.01	-0.12				
Helplessness (yes)	-	0.20**	2.60				
Sadness (yes)	-	0.003	0.04				
Relief (yes)	-	0.02	0.25				
Self-Mastery	-0.44***	-0.34	-4.47***				
Perceived social support	-0.36***	-0.31	-4.62***				

* $p < .05$, ** $p < .01$, *** $p < .001$; ES for effect size.

^a 0=single, 1=in a relationship; ^b 0=parous, 1= Nulliparous