



Contents lists available at ScienceDirect

European Journal of Obstetrics & Gynecology and Reproductive Biology

journal homepage: www.elsevier.com/locate/ejogrb

Effect of IVF failure on quality of life and emotional status in infertile couples



Nilay Karaca^{a,*}, Aysun Karabulut^b, Sevgi Ozkan^c, Hale Aktun^d, Fatma Orengul^e, Rabiye Yilmaz^a, Seda Ates^a, Gonca Batmaz^a

^a Bezmialem Vakif University, School of Medicine, Department of Obstetric and Gynecology, Istanbul, Turkey

^b Pamukkale University, School of Medicine, Department of Obstetric and Gynecology, Denizli, Turkey

^c Pamukkale University, Denizli Health Services Vocational College, Denizli, Turkey

^d Medipol University, School of Medicine, Department of Obstetric and Gynecology, Istanbul, Turkey

^e Haseki Training Research Hospital, Istanbul, Turkey

ARTICLE INFO

Article history:

Received 16 March 2016

Received in revised form 9 September 2016

Accepted 13 September 2016

Keywords:

FertiQoL

Anxiety

Depression

Unsuccessful IVF treatment

ABSTRACT

Objective: To investigate the effect of a previous IVF failure on the quality of life and emotional distress, in couples undergoing IVF treatment. Experiencing IVF failure might cause differences on the anxiety-depression and quality of life scores of the couples, compared to the ones who were undergoing IVF treatment for the first time.

Study design: This study included 64 couples who had previously experienced at least one IVF failure (Group 1) and 56 couples without history of IVF failure (Group 2) in a private Assisted Reproductive Center, Istanbul, Turkey. A sociodemographic data form, the FertiQoL International and Hospital Anxiety (HAD-A) and Depression scale (HAD-D) for evaluating the status of distress, were administered for the study.

Result(s): FertiQoL scores were compared between the groups, the environment scale of the quality of life in treatment section was found to be significantly higher in Group 1 compared with Group 2 ($p=0.009$). The HAD-A and HAD-D scores did not differ significantly between the groups. Group-variables were investigated using multilevel analysis, the infertility duration and income level were found to have an effect on the subscales of quality of life ($p=0.009$ and $p=0.001$ respectively) in Group 2. Depression scores were higher in couples with infertility duration of below five years in Group 1 and Group 2 compared to couples with infertility duration of five years or above (MANOVA analysis). The level of education was found to affect the scores of HAD-D in Group 2, but not in Group 1 ($p=0.011$). The score of HAD-D was significantly affected by the family type only in Group 2 ($p=0.009$); the depression score of the couples living with a nuclear family was found to be higher compared with the couples living in a traditional family ($p=0.021$).

Conclusion(s): Fertility-specific quality of life scores reveals better results regarding the orientation to the treatment environment in the couples with a previous IVF failure, compared to first IVF cycle couples. Treatment failure does not elevate the level of anxiety, while the effect on depression scores changes according to duration of infertility.

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Introduction

Infertility is defined as failure to achieve clinical pregnancy after twelve months of regular unprotected sexual intercourse [1]. It is an important problem that affects about one in 10 couples [2–5]. It

may affect the relationship of couples with their families, friends, and each other, and may decrease their self-confidence with feelings of guilt and insufficiency [6–8].

Furthermore, procedures used in diagnosis and treatment may affect the couples and regrettably lead to emotional stress and decrease in quality of life [9,10].

In the literature, psychosocial studies revealed a higher frequency of negative attitudes in infertile individuals, such as dissatisfaction, unwillingness and disorientation regarding the treatment [5,11]. Therefore it is extremely important to evaluate

* Corresponding author at: Merkez Efendi Mah. Mevlana Cad. Topkapı Merkezевleri A1-41, Zeytinburnu, Istanbul 34200, Turkey. Tel.: +90 505 772 53 07; fax: +90 212 453 29 43.

E-mail address: karacanilay@hotmail.com (N. Karaca).

the couples with their psychosocial background and minimize distracting factors in order to maintain the orientation of the patients to the treatment.

World Health Organization defines the quality of life as ‘an individual’s perception of their position in life in the context of the culture, religion and value systems in which they live’, and this concept has gradually gained immense importance in complex and multidirectional health conditions, like infertility [2,12–14]. Following the study by Menning et al. in the 1980s reporting that infertile couples required psychological support, many researchers have investigated the quality of life and psychological status of the infertile couples, predominantly by nonspecific tools evaluating general health status (e.g., WHO-BREF) [15–17]. Later on, the studies reporting the negative social and mental effects of infertility on couples have gained great importance, and a limited number of studies have been conducted using more specified forms that evaluate quality of life [2,6,10,16,18] like Fertility Quality of Life Questionnaire which is an international and condition-specific tool that evaluates the effects of infertility on quality of life in a more realistic way, and reveals more objectively the psychometric characteristics of individuals [6,11,19].

The method of in vitro fertilization, which is one of the most important and final steps in the treatment of infertility, is a therapeutic course that leads to anxiety in couples especially in females, and has stressful consequences both socially and financially [4,11,20,21]. Two important studies have shown that the rate of depressive symptoms in infertile women is significantly higher, compared with fertile women [22,23]. In addition unsuccessful treatment raised the women’s levels of negative emotions, which continued after consecutive unsuccessful cycles. In general, most women proved to adjust well to unsuccessful IVF, although a considerable group showed subclinical emotional problems [10].

In the light of the present literature, we hypothesized that experiencing IVF failure might cause differences on the anxiety-depression and quality of life scores of the couples, compared to the ones who were undergoing IVF treatment for the first time. The objective of the present study was to investigate the effect of a previous IVF failure on the quality of life and emotional status, in couples undergoing IVF treatment.

Materials and methods

This descriptive study was conducted using a cross-sectional, pilot study design between April 2014 and November 2014. Ethical approval was obtained from the institutional Ethics Committee (Internal Review Boards-IRB) at Pamukkale University Medical School (Denizli, Turkey) prior to the collection of data. The research team adhered to the ethical standards set for the Declaration of Helsinki and the IRB Guidelines of Pamukkale University Medical School. Written informed consent was obtained from each patient to participate into the study.

Study population

Study population was recruited from patients who were meeting the definition of infertility accepted by the WHO criteria [24] and undergoing in vitro fertilization in a private infertility clinic, İstanbul, Turkey.

Informed consent was obtained from 64 couples who previously experienced at least one in vitro fertilization cycle (IVF) failure (128 subjects—Group 1), and 56 couples who would be undergoing IVF procedure and having no history of IVF-failure previously (112 subjects—Group 2). However, four couples with IVF failure (eight subjects) and nine couples without IVF failure (18 subjects) were subsequently disqualified and eliminated

after one or both members of those pairs failed to respond to all items in the study questionnaire. In study’s participant pool, the period of infertility ranged from one to twenty-five years with a mean age of twenty-seven years for the females and forty-four years for the males. The socioeconomic status extended across low, middle, and high income earning levels with a majority of couples owning health insurance due to the national health insurance program.

Data collection and questionnaires

All the forms were presented to the couples individually in face to face fashion by a trained nurse about both the subject and the IVF treatment. Aims of the study and content of the questionnaire were explained to all participants and informed consent was obtained prior to implementing any data collection protocols. The couples were separated from their partners to prevent mutual effect, and they completed the questionnaires in a different room from their mate. At both rooms, a nurse was available to provide explanatory support during the filling period of the questionnaires.

The characteristics known to be important from our previous study and personal experiences were used to obtain data about demographic characteristics in the model [11]. A questionnaire composed of 20 structured questions requesting information about the chronological age, level of education, professional status, social security, income level, living place, type of family, age at the time of marriage, cause and duration of infertility, previous methods of treatment, previous history of pregnancy and desire for psychological support together with the FertiQoL International, which is the scale of quality of life for individuals who experience problems of infertility, and Hospital Anxiety (HAD-A) and Depression (HAD-B) scale for evaluating the status of distress, were administered to the attendees. FertiQoL and anxiety-depression scores of the couples were defined as the dependent variables of the study, whereas all other parameters formed the independent variables.

FertiQoL

The infertile couples’ quality of life was measured using the FertiQoL scale, which has been translated into 20 languages, including Turkish. The validity and reliability of this likert-type scale was performed by Boivin et al. in 2011 [2]. A Turkish translation of the FertiQoL questionnaire was used in this study [19]. The Turkish version of the tool was validated according to the FertiQoL group guidelines for transcultural research [19].

It is a more sensitive, reliable and valid measure of QoL in infertility compared to general measures of QoL such as the WHO-BREF and SF-36 [6]. It was used to assess the influence of fertility problems in diverse areas such as self-esteem, emotions, general health, family and social relationships, work life and future life plans [19].

The FertiQoL questionnaire consists of two parts; Core and Treatment sections. Core FertiQoL items consist of 24 specific questions covering four subscales of QoL: Mind & Body, Relational, Social and Emotional domains. The optional second part of the FertiQoL was the Treatment module, consisting of 10 questions and Environment and Tolerability domains. The FertiQoL is a likert scale, and yields six subscales with a range of 0–100. A higher score on any subscale means a better QoL [2]. Two additional items (marked A and B) on the FertiQoL questionnaire capture an overall evaluation of physical health and satisfaction with quality of life. These are used for background information but are not used in the FertiQoL total or subscale scores.

Hospital Anxiety and Depression scale

HAD scale was used for the measurement of anxiety and depression. Turkish validation of the scale was performed in by Aydemir et al. in 1997 [25]. This scale was administered to screen mood disorders in the couples; it evaluates the subjective degradation of mood rather than physical signs. The depression subscale evaluates anhedonia as a main symptom instead of sadness; anhedonic symptoms are effective proof of depression in cases with disease states like infertility, which do not involve suicidal thoughts, a feeling of guilt and despair. The HAD scale consists of a total of 14 questions mainly regarding the depression (seven questions) and anxiety (seven questions), and it is scored between 0 and 21 points. The scores from 0 to 7 interpreted as normal, 8 to 10 as mild, 11 to 14 as moderate and 15 to 21 as severe mood disorder [25].

Data analysis

Statistical analysis was performed using SPSS 10.0 software (SPSS Inc. (2000) SPSS for Windows, version 10.0. Chicago, IL: SPSS Inc.). Continuous variables were expressed as mean \pm standard deviation and categorical variables as numbers and percentages. The sociodemographic variables and other characteristics were analyzed using descriptive statistics, and comparisons of means and proportions were conducted with the Chi-square test. Multilevel multivariate analysis (MANOVA) was used to evaluate the differences in FertiQoL and HAD scores and independent variables. The independent variables were age, education, employment status, health insurance, family type, income level, duration of infertility, cause of infertility (male, female, both, and unexplained), and the desire for psychological support. A p value of less than 0.05 was considered to be statistically significant.

Results

A total of 107 infertile couples were included into the study. Sixty couples with at least one IVF failure previously were analyzed in Group 1, and 47 couples who had no IVF failure history formed the Group 2. Demographic and fertility characteristics of the groups (Group 1; n = 120, Group 2; n = 94) are shown in Table 1. The socioeconomic status and educational level were slightly lower in Group 1, and the nuclear family type was more common in Group 2.

The Core FertiQoL scores were generally higher in Group 2 than those in Group 1; but this difference could not achieve statistical significance ($p > 0.05$). The total, treatment and tolerability scores of FertiQoL, and HAD-A and HAD-D scores did not differ significantly between the two groups ($p > 0.05$) but, in the treatment section environment domain scores of the quality of life in Group 1 were found to be significantly higher compared with Group 2 ($p = 0.009$) (Table 2).

Multilevel multivariate analysis was used to evaluate the demographic variables based on FertiQoL and HAD scores according to IVF failure history (Table 3). Duration of infertility and income level was found to have an effect on the subscales of quality of life, compared with other sociodemographic variables ($p = 0.009$ and $p = 0.001$ respectively) in Group 2. We detected higher scores in environment subscale of the FertiQoL in couples with duration of infertility less than five years compared to the ones with 5 years or above (mean \pm SD; 53.36 ± 2.75 vs. 39.48 ± 3.42) ($F = 8.786$, $p = 0.003$). Similarly, tolerability domain score was also detected higher in cases with the duration of infertility below five years in Group 2, compared to couples with an infertility duration of five years or above (mean \pm SD 54.44 ± 3.46 vs. 43.55 ± 3.85) ($F = 4.112$, $p = 0.044$) (Table 3).

Table 1
Demographic characteristics of the study population.

Variables	Group 1 (n = 120) Mean (SD) or n (%)	Group 2 (n = 94) Mean (SD) or n (%)	p Value
Age			
≤30 years	25 (20.9)	18 (19.1)	0.26
31–35 years	53 (44.2)	33 (35.1)	
>35 years	42 (35.0)	43 (45.7)	
Educational status			
<5 years	35 (29.4)	24 (25.5)	0.037*
6–11 years	54 (45.4)	31 (33.3)	
>11 years	30 (25.2)	39 (41.5)	
Income level ^a			
Class A	16 (13.3)	4 (4.3)	0.027*
Class B	78 (65.0)	59 (62.8)	
Class C	26 (21.7)	31 (33.3)	
Duration of infertility			
<5 years	65 (54.2)	52 (55.3)	0.87
≥5 years	55 (45.8)	42 (44.7)	
Health insurance			
Present	117 (97.5)	93 (98.9)	0.44
Absent	3 (2.5)	1 (1.1)	
Causes of infertility			
Female	33 (28.0)	32 (34.4)	0.83
Male	25 (21.2)	18 (19.4)	
Both	22 (18.6)	13 (14.0)	
Unexplained	38 (32.2)	30 (32.2)	
Employment status			
Employed	81 (67.5)	58 (61.7)	0.38
Unemployed	39 (32.5)	36 (38.3)	
Family type			
Nuclear family	106 (88.3)	92 (97.9)	0.008*
Extended family	14 (11.7)	2 (2.1)	
Requirement for psychological support			
Yes	15 (12.6)	17 (18.1)	0.27
No	105 (87.4)	77 (81.9)	

Group I; couples with history of IVF failure; Group II; couples without history of IVF failure.

^a Income level; Class A high; more income compared to expenses, Class B middle; income and expense levels almost equal, Class C low income, expenses usually more than income.

* Statistically significant, Chi-square test.

When the environment subscale of FertiQoL was investigated together with the income level in Group 2, the score of the couples with low income was found lower compared to the couples with middle and high income (mean \pm SD; 10.86 ± 3.12 vs. 52.61 ± 2.82 and 42.47 ± 3.90 respectively) ($F = 9.229$, $p < 0.0001$). Similarly, the evaluation of tolerability subscale together with the income level, showed lower scores in couples with low income compared to the couples with middle and high income in Group 2 (mean \pm SD; 18.75 ± 2.33 vs. 55.08 ± 3.21 and 42.54 ± 4.4) ($F = 5.237$, $p = 0.006$). The subscales of quality of life did not differ significantly regarding the other variables between the groups ($p > 0.05$) (Table 3).

The results of MANOVA analysis of the HAD scores revealed no significant differences between the groups and the variables except the infertility duration, level of education and the family type ($p > 0.05$). Depression scores in couples with infertility duration of below five years were higher compared to the ones with infertility duration of five years or above in Group 1 (mean \pm SD; 10.40 ± 2.89 vs. 9.49 ± 2.45), whereas lower

Table 2
Comparison of FeriQoL, HAD anxiety and depression scores of the couples in groups with and without history of IVF failure.

	Group 1 (n = 120) Mean (SD)	Group 2 (n = 94) Mean (SD)	p Value
Core FertiQoL			
Emotional	59.51 (20.39)	63.07 (19.25)	0.19
Mind/body	67.46 (19.83)	71.01 (21.93)	0.22
Relational	71.31 (18.89)	73.44 (23.29)	0.47
Social	63.75 (17.92)	66.40 (18.28)	0.29
Treatment FertiQoL			
Environment	55.45 (15.72)	47.16 (23.68)	0.009*
Tolerability	50.00 (24.00)	49.40 (26.56)	0.87
Total FertiQoL	52.50 (9.95)	52.92 (11.40)	0.77
A	2.66 (0.89)	2.63 (0.94)	0.68
B	3.05 (2.12)	2.63 (0.93)	0.71
HAD-A	10.73 (3.31)	9.86 (3.33)	0.06
HAD-D	9.98 (2.73)	10.60 (2.75)	0.10

Group 1; couples with history of IVF failure; Group 2; couples without history of IVF failure.

* Statistically significant, Independent t-test.

depression scores were detected in the couples with duration of infertility less than 5 years compared to the ones with five years or above in Group 2 (mean ± SD; 9.80 ± 2.64 vs. 11.59 ± 2.58) (F = 13.347 p < 0.000) (Table 4).

In analysis of HAD-A and HAD-D scores with the group and level of education; HAD-D scores detected higher in cases with educational level below high-school compared to the university

graduates in Group 2 (mean ± SD; 11.27 ± 2.59 vs. 9.66 ± 2.72) (F = 7.020, p = 0.009). Scores of HAD-A did not differ significantly between the groups related to educational levels (p > 0.05).

When the scores of HAD-A and HAD-D were evaluated together with the group-family type, the score of HAD-D was found to be affected by the family type in Group 2 (p = 0.009); the depression score of the couples living within a nuclear family was detected higher compared to the couples living within a traditional family (mean ± SD; 10.71 ± 2.66 vs. 5.50 ± 2.12) (F = 5.390, p = 0.021). HAD-A scores did not differ significantly between the group-family types (p > 0.05).

Discussion

The present study was designed to investigate the effect of previous IVF-failure on the fertility-specific quality of life and emotional status of the couples undergoing IVF treatment, and it was one of the firsts in this area according to our literature search. Studies that evaluate the fertility-specific quality of life in infertile patients have recently gained great importance. In a study by Huppelschoten et al., conducted with infertile couples in 2013, the quality of life, particularly in females, was reported to be affected to a higher extent compared to their partners [26]. Similarly, Kahyaoglu et al. demonstrated negative correlation of the mind-body, tolerability and the total scores of the FertiQoL with the number of unsuccessful IVF attempts in infertile women [27].

Table 3
Multilevel multivariate analysis of FertiQoL scores according to groups and other variables.

	Wilks' λ	F	HİPOTESİS df	Error df	p Value	Parsiel eta square
Gender-group	0.982	0.629	6	205	0.70	0.018
Age-group	0.956	0.766	12	406	0.69	0.022
Duration of infertility-group ^a	0.921	2.926	6	205	0.009*	0.079
Educational status-group	0.915	1.525	12	404	0.11	0.043
Employment status-group	0.987	0.441	6	205	0.85	0.013
Income level-group ^b	0.853	2.794	12	406	0.001*	0.076
Family type-group	0.970	1.058	6	205	0.39	0.030
Cause infertility-group	0.892	0.948	24	684	0.54	0.028

Wilks' λ = pooled ratio of error variances to effect variance plus error variance.

HİPOTESİS df; degrees of freedom for the hypothesis.

Parsiel eta square; the ratio of variance accounted for by an effect and that effect plus its associated error variance.

^a The higher scores were detected in environment and tolerability domain subscale of the FertiQoL in couples with duration of infertility less than five years compared to the ones with 5 years or above in Group 2 (mean ± SD; 53.36 ± 2.75 vs. 39.48 ± 3.42; p = 0.003 and mean ± SD; 54.44 ± 3.46 vs. 43.55 ± 3.85; p = 0.044 respectively).

^b The environment and tolerability subscale scores of the couples with low income were lower compared to the couples with middle and high income (mean ± SD for the environment subscale, 10.86 ± 3.12 vs. 52.61 ± 2.82 and 42.47 ± 3.90; p = 0.006, and for the tolerability subscale, 18.75 ± 2.33 vs. 55.08 ± 3.21 and 42.54 ± 4.4; p < 0.0001 respectively) in Group 2.

* Statistically significant, Multilevel multivariate analysis.

Table 4
Multilevel multivariate analysis of HAD scores according to groups and other variables.

	Wilks' λ	F	HİPOTESİS df	Error df	p Value	Parsiel eta square
Gender-group	0.994	0.683	2	209	0.51	0.006
Age-group	0.967	1.747	4	414	0.14	0.017
Duration of infertility-group ^a	0.939	6.777	2	209	0.001*	0.061
Educational status-group ^b	0.958	4.593	2	208	0.011*	0.042
Employment status-group	0.995	0.553	2	209	0.58	0.005
Income level-group	0.981	1.013	4	414	0.40	0.010
Family type-group ^c	0.956	4.858	2	209	0.009*	0.044
Cause infertility-group	0.946	1.420	8	400	0.19	0.028

Wilks' λ = pooled ratio of error variances to effect variance plus error variance.

HİPOTESİS df; degrees of freedom for the hypothesis.

Parsiel eta square; the ratio of variance accounted for by an effect and that effect plus its associated error variance.

^a Depression scores detected lower in couples with infertility duration of below five years in Group 1 (Mean ± SD 10.40 ± 2.89 vs. 9.49 ± 2.45), whereas lower depression scores were detected in the couples with duration of infertility less than 5 years in Group 2 (mean ± SD 9.80 ± 2.64 vs. 11.59 ± 2.58; p < 0.0001).

^b HAD-D scores detected higher in cases with educational level below high-school compared to the university graduates in Group 2 (mean ± SD; 11.27 ± 2.59 vs. 9.66 ± 2.72; p = 0.009).

^c HAD-D of the couples living within a nuclear family was detected higher compared to the couples living within a traditional family (mean ± SD; 10.71 ± 2.66 vs. 5.50 ± 2.12; p = 0.021) in Group 2.

* Statistically significant, Multilevel multivariate analysis.

In the present study, it was shown that the couples with a history of IVF failure were less affected from the treatment environment when compared to the couples without IVF failure history. In contrast to the findings of Kahyaoglu et al. in infertile females, we determined that the mind-body and tolerability subscales and total score of the fertility-specific quality of life did not differ between the groups [27]. The only difference was originated from the environment subscale of the treatment section, and higher environment tolerability scores were detected in IVF failure group. This may be explainable by the being familiar with the treatment steps from the previous cycle or with the increased desire of couples despite IVF-failure history which probably increased the tolerability of the treatment.

In this study, duration of infertility and income level was found to have an effect on quality of life. However both of the variables affected the environment scores only in the couples without history of IVF failure. We determined that the increase in duration of infertility and lower income level leads deterioration in the couples' acceptances of the therapeutic approach and their orientation to the therapy. We consider that this result may be originated from being inexperienced in the treatment, feeling of intimidation in the first IVF attempt, and the increased duration of infertility probably decreasing tolerability with the increased duration of infertility deteriorates the environment scores further. On the other hand, despite having an unsuccessful result previously, being familiar with the treatment steps makes it easier for the couples to orient to the treatment environment. Similarly, Ragni et al. also reported decreased the physical and psychological scores of the quality of life with increased duration of infertility, but different from our study they preferred a nonspecific general health measurement tool (Health survey short form-36) in their study [18].

The environment scores in the couples with a low income were found to be more affected only in the group undergoing the first IVF therapy. The existence of economic problems, the cost of the medications used in infertility treatment, expenses in the hospital and the other causes may be considered to reduce the physical and emotional tolerance of patients to the IVF therapy. Therefore, socioeconomic level seems as another factor leading to differences in environment scores between groups, as does the duration of infertility.

In our study, no differences were determined between groups regarding the sociodemographic characteristics, except the level of education, socioeconomic status and the family type. The educational level and socioeconomic status were significantly higher in the couples with previous IVF failure. However in the multivariate analysis, we determined that these characteristics had no effect on the quality of life in the couples with IVF failure history. A higher level of education usually associated with a higher level of income and socioeconomic status in society, and potential association of these two factors may be explanation for the loss of importance in multilevel multivariate analysis model. According to current literature, the effect of education on quality of life was a bit confusing. Karabulut et al. reported that orientation to the treatment environment in the quality of life scale was better for the infertile women with a high educational level, but the total scores of the quality of life and tolerability of treatment were not found to be better. They concluded that infertility intensely affected the emotional status and general well-being, and a high level of education was not sufficient to make this situation more tolerable [11]. Huppelschoten et al. detected better QoL in group with high level of education compared with moderate and low levels [26], but Chachamovich et al. reported lower environment scores of the quality of life in patients with higher education level [14].

In this study, we detected no difference for HAD anxiety and depression scores between groups with and without IVF failure.

However when we analyzed the groups together with the sociodemographic variables, IVF failure group revealed higher depression scores, if duration of infertility was less than 5 years. On contrary, group without IVF failure revealed lower scores, if duration of infertility was less than 5 years. Disappointment experienced in the pre-treatment period is probably much more intense at the beginning but by the time couples usually used to the situation and the effect become less intense. On the other hand, in the couples undergoing first time IVF treatment, higher depression scores with increased duration of infertility may be triggered by the increased desire of having a baby with increased duration of infertility. Therefore, these two groups may require psychological support even if they do not demand it, which may be helpful to increase quality of life and cooperation to the treatment. In accordance with this idea, Seyedi et al. screened females undergoing infertility treatment, and reported improvement in life satisfaction with positive psychotherapy in those showing mild to moderate depressive symptoms [28]. The results of this study seem promising, but they could not obtain any improvement in quality of life which may be because of the limited sample size or the use of non-specific quality of life measurement tool. Therefore, further well designed studies with larger sample size were required to clarify the situation.

In previous studies, it was reported that 11.8% of females show depressive signs prior to IVF treatment, and this value rose to 25.4% following an unsuccessful IVF attempt [29], and females expressed two fold more depressive signs compared to males [30]. In our study, we do not perform evaluation according to gender, instead evaluated as couple, but no gender effect was detected on depression scores of the couples in both groups in multilevel multivariate analysis.

We also detected high depression scores in patients with low education level in Group 2, but not in the IVF failure group. Similarly, Noorbala et al. also detected higher depression scores in infertile females with low level of education [30]. Problem solving skills are important to cope with stressful situation which were highly related with educational status [31]. In the Group 2 with a low education level, the perceptions about the procedures in the course of IVF therapy may lead to elevated scores of depression. On the other hand, having a previous experience about the therapy might help to develop coping strategies for even the low educated participants in the IVF failure group.

In the evaluation of the HAD scale, the type of family was another variable that affected the depression scores. Karabulut et al. reported lower need for psychological support in patients with extended families despite lower emotional scores [11]. Furthermore, Vasaard et al. showed decreasing effect of social support on infertility related anxiety and depression [32]. In our study, depression scores were detected higher among the couples living within a nuclear family. This result may be explained by the situation of not sharing problems in the nuclear family, and supportive approach in the extended families. In contrast to these results, Noorbala et al. reported that the comments of family members about infertility in the case of extended family are the main causes of depression in 81.3% of the couples [33]. Therefore, the result may change according to the type of approach (supportive vs. humiliating etc.) that other family members expressed in the extended families. Although, a few cultural based differences in fertility specific quality of life between the couples defined in a previous study comparing three different cultures, it requires further comparative studies in different cultures to make a more precise conclusion about the subject [34].

The main limitation of our study was originated from limited sample size which can be minimized by multi-centered studies with increased number of participants or the longer enrollment periods. The second limitation was originated from the multiple

comparisons performed in the study. We could not eliminate some degree of chance factor originated from the nature of this kind of studies. However our study is important to emphasize that infertility is not a disease requiring only the physical and medical treatment, but also requiring a psychological approach. Our study therefore highlights the important points, and shed light to more advanced studies conducted on this subject.

In conclusion, fertility-specific quality of life scores reveals better results regarding the orientation to the treatment environment in the couples with a previous IVF failure, compared to first IVF cycle couples. Treatment failure does not elevate the level of anxiety, while the effect on depression scores changes according to duration of infertility.

Conflict of interest

Authors declare no conflict of interest.

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