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ORIGINAL ARTICLE

Evaluation of Quality of Life and Health Literacy in Women Receiving Infertility Treatment

İnfertilite Tedavisi Gören Kadınlarda Yaşam Kalitesi ve Sağlık Okuryazarlığının Değerlendirilmesi

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ABSTRACT

Background: Infertility and its treatment can be complex, difficult, and uncomfortable, especially for women. Therefore, it is important to evaluate the quality of life and health literacy of women. This study was conducted to evaluate the quality of life and health literacy in women receiving infertility treatment and to determine the relationship between them.
Methods: The study, in which a descriptive design was used, was carried out with 186 women who received infertility treatment. Data were collected by a descriptive information form, the Fertility Quality of Life Questionnaire (FertiQoL), and the Turkiye Health Literacy Scale-32 (THLS-32).
Results: The mean scores of participants were 61.73±16.71 on the total FertiQoL and 36.46±8.45 on the total THLS-32. The level of health literacy was inadequate in 7.5% of women, problematic/ limited in 28.5%, adequate in 31.7%, and excellent in 32.3%. There was no significant correlation between FertiQoL and THLS-32 scores (p>.05).
Conclusion: In this study, it was determined that the quality of life and health literacy of women who received infertility treatment were not at the desired level. The study found no relationship between women's quality of life and health literacy.

Keywords: infertility, quality of life, health literacy, women

ÖZ

Giriş: İnfertilite ve tedavisi özellikle kadınlar için karmaşık, zor ve rahatsız edici olabilir. Bu nedenle kadınların yaşam kalitesinin ve sağlık okuryazarlığının değerlendirilmesi önemlidir. Bu çalışma infertilite tedavisi gören kadınlarda yaşam kalitesi ve sağlık okuryazarlığının değerlendirilmesi ve aralarındaki ilişkinin belirlenmesi amacıyla yürütülmüştür.
Yöntemler: Tanımlayıcı desenin kullanıldığı çalışma, infertilite tedavisi gören 186 kadın ile gerçekleştirildi. Veriler; Tanımlayıcı Bilgi Formu, Doğurganlık Sorunu Yaşayan Kişiler İçin Hayat Kalitesi Ölçeği (FertiQoL) ve Türkiye Sağlık Okuryazarlığı Ölçeği-32 (TSOY-32) ile toplanmıştır.
Bulgular: Katılımcıların toplam FertiQoL puan ortalaması 61.73±16.71, TSOY-32 puan ortalaması ise 36.46±8.45 idi. Kadınların sağlık okuryazarlığı düzeyi %7.5'inde yetersiz, %28.5'inde sorunlu/sınırlı, %31.7'sinde yeterli ve %32.3'ünde mükemmel olduğu belirlendi. FertiQoL ile TSOY-32 puanları arasında anlamlı bir korelasyon yoktu (p>.05).
Sonuç: Bu çalışmada infertilite tedavisi gören kadınların yaşam kalitesinin ve sağlık okuryazarlığının istenilen düzeyde olmadığı belirlendi. Kadınların yaşam kalitesi ile sağlık okuryazarlığı arasında ilişki olmadığı saptandı.

Anahtar Kelimeler: infertilite, yaşam kalitesi, sağlık okuryazarlığı, kadın

Introduction

Infertility, which affects 17.5% of the adult population worldwide (1), is a condition that can cause emotional, psychological, and social problems (2). The quality of life of individuals is negatively affected by the diagnosis of infertility in addition to the difficulties experienced during the diagnosis and treatment. The quality of life is lower in infertile individuals than in fertile individuals and women than in men among infertile couples (3). Factors affecting the quality of life of infertile individuals include education level, culture, age, duration of marriage, and menstrual factors of women (3). A systematic review indicated that health literacy was moderately correlated with quality of life (4). However, no study examining the relationship between health literacy and quality of life in infertile women has been found in the literature. Infertile women obtained information from different sources and majority of them (87%) wanted to get more information (5). In a study on the knowledge and resources of female patients attending the infertility outpatient clinic, it was found that 42.5% of participants did not have knowledge about IUI and 70.8% of them did not know about IVF (6). Based on these results, it is thought that it is important to investigate health literacy in women who present to infertility clinics. "Health literacy (HL) represents the personal knowledge and competencies that accumulate through daily activities, social interactions and across generations." (7). HL is associated with access to health information and health behavior (7). In addition, it plays an important role in reproductive information and may affect reproductive behaviors and outcomes (8).

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Some studies in the literature have shown that HL is associated with quality of life in different sample groups (4, 9, 10). However, this study is the first to evaluate the relationship between health literacy and quality of life in infertile women. This study was conducted to evaluate the quality of life and HL in women receiving infertility treatment and determine the relationship between them.

Methods

A descriptive design was used. The population of the research consisted of women receiving treatment in a fertility center. The sample consisted of volunteers who were on treatment between April and June, 2022 in the fertility center and they were literate. Women with a history of chronic and psychiatric diseases, as well as those who were health professionals, were excluded from the study.

G*Power 3.1.9 software was used to determine the sample size. Following a power analysis based on a systematic review that examined the impact of HL on quality of life (4), for a statistical power of 95% and a margin of error of 0.03, the minimum sample size required for inclusion in the study was calculated as 184. However, the target sample consisted of 200 women to prevent data loss and increase validity. Out of these, 11 did not meet the inclusion criteria, and 3 declined to participate. Consequently, our final sample consisted of 186 women.

Data Collection

The data were collected face-to-face at the center where the study was conducted. Data collection forms were provided to the participants, and it was made easier for them to fill out the forms in a room at the center, ensuring their privacy. Study data were collected using a descriptive information form, the Turkiye Health Literacy Scale-32, and the Fertility Quality of Life Questionnaire.

Descriptive Information Form

The form included demographic (age, education, employment status, income status, and duration of marriage) and infertility characteristics (type of infertility, cause of infertility, duration of infertility, and number of treatments).

The Turkiye Health Literacy Scale-32 (THLS-32)

THLS-32 has 32 items and a four-point Likert-type scale. THLS-32 consists of two sub-dimensions, namely treatment and service and disease prevention/health promotion. Higher scores indicate better HL. Scores on the THLS-32 are interpreted as follows: inadequate HL (0-25); problematic/limited HL (>25-33); adequate HL (>33- 42); excellent HL (>42-50). Cronbach's Alfa coefficient is .927 (11). It was found as .965 in the present study.

The Fertility Quality of Life Questionnaire (FertiQoL)

The FertiQol scale includes 36 items and has two modules; core (emotional, mind/body, relational, social) and treatment (environment, tolerability). Scores on the subscales range from 0 to 100. Higher scores indicate better QoL. In the Turkish validity and reliability study of the scale, Cronbach's Alpha coefficient was determined as .905 (12). It was found to be .920 in this study.

Statistical Analysis

Statistical Package for the Social Sciences 24.0 software was used to evaluate the data. Skewness and kurtosis values were determined to vary between ±2, which was thought to show normality. For this reason, parametric tests were used. Independent samples t-test was used to compare two independent groups, and the one-way ANOVA analysis was employed to compare more than two independent groups, and Pearson correlation analysis was utilized to compare two quantitative data. $p \leq .05$ was accepted as the level of statistical significance.

Results

The mean age of participants was 30.81±5.58, the length of marriage was 5.76±4.60 (year) and the count of treatments was 1.93±1.13. Of the participants, 36% had a university education or higher, 67.7% did not have a paid job, 59.1% had a middle level of income, 73.7% had primary infertility, and 39.8% had unexplained infertility (Table 2).

The mean FertiQoL scores of participants were as follows: core FertiQoL, 61.30±19.05; treatment FertiQoL, 62.78±16.76; total FertiQoL, 61.73±16.71. The mean THLS-32 scores of participants were as follows: treatment and service, 36.94±8.66; disease prevention/ health promotion, 35.92±9.57; total THLS-32, 36.46±8.45 (Table 3). Although not given in the table, 7.5% of the participants had inadequate, 28.5% problematic/ limited, 31.7% adequate, and 32.3% excellent health literacy levels.

The mean Treatment and Total FertiQoL scores of participants with a university degree education level were higher than those with a high school education. Participants whose spouses had a university degree education level had higher average Core, Treatment, and Total FertiQoL scores compared to those with primary education. Participants who were employed in income-generating jobs had higher average Core and Total FertiQoL scores than those who were unemployed. Participants with lower monthly income had lower average Core and Total FertiQoL scores compared to those with moderate and high incomes (Table 1; $p<.05$). Participants with secondary infertility had lower average Treatment and FertiQoL scores than those with primary infertility. The Core, Treatment, and Total FertiQoL scores of participants with male-only infertility as the cause were higher than those of participants with infertility due to other reasons (Table 2; $p<.05$).

There was no significant relationship between FertiQoL scores and THLS-32 scores (Table 3; $p>.05$).

Discussion

Infertility and its treatment can affect the women

Table 1. Results of the analysis of the scales according to sociodemographic variables (*n = 186*).

		Core FertiQoL	Treatment FertiQoL	Total FertiQoL	Treatment and services	Disease prevention/ health promotion	Total THLS-32
Variables	***n* (%)**	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Education							
Primary (a)	62 (33.3)	58.42±19.92	62.86±14.60	59.72±16.26	35.289±10.135	33.724±10.918	34.534±9.785
High school (b)	57 (30.6)	59.63±19.17	57.06±18.77	58.88±17.89	37.406±7.754	36.319±9.175	36.921±7.666
University and above (c)	67 (36)	65.38±17.64	67.57±15.49	66.02±15.41	38.077±7.746	37.617±8.211	37.853±7.507
Analysis#		F=2.504 *p*=.085	**F=6.413 *p*=.002* (b-c)**	**F=3.586 *p*=.030* (b-c)**	F=1.804*p*=.168	F=2.791*p*=.064	F=2.650 *p*=.073
Spouse's education							
Primary (a)	45 (24.2)	54.58±21.91	57.22±20.28	55.36±19.63	36.325±10.194	35.637±11.975	35.981±10.400
High school (b)	97 (52.2)	60.91±16.90	63.76±14.80	61.75±14.51	36.887±7.991	35.569±8.485	36.276±7.570
University and above (c)	44 (23.7)	69.01±17.98	66.31±15.86	68.22±15.87	37.694±8.512	36.991±9.211	37.361±8.232
Analysis#		**F=6.829 *p*=.001* (a-c)**	**F=3.721 *p*=.026* (a-c)**	**F=7.010 *p*=.001* (a-c)**	F=.280 *p*=.756	F=.358 *p*=.699	F=.342*p*=.711
Having a paid job							
Yes	60 (32.3)	67.36±17.64	64.00±14.77	66.37±14.67	36.107±7.823	35.487±8.736	35.815±7.572
No	126 (67.7)	58.41±19.08	62.20±17.66	59.52±17.22	37.340±9.028	36.129±9.966	36.769±8.856
Analysis†		**t=3.064 *p*=.003***	t=.727 *p*=.468	**t=2.655 p=.009***	t=-.908 *p*=.365	t=-.426*p*=.670	t=-.719*p*=.473
Monthly income							
Low (a)	61 (32.8)	54.13±20.13	60.45±14.99	55.99±17.15	35.318±9.409	34.598±11.295	35.008±9.447
Middle (b)	110 (59.1)	64.46±17.11	63.93±17.90	64.30±15.63	38.173±7.990	36.532±8.538	37.380±7.726
High (c)	15 (8.1)	67.22±20.95	63.83±14.88	66.23±17.60	34.519±9.157	36.828±9.161	35.632±8.982
Analysis#		**F=6.983 *p*=.001* (a-b; a-c)**	F=.877 *p*=.418	**F=5.723 *p*=.004* (a-b; a-c)**	F=2.830*p*=.062	F=.874 *p*=.419	F=1.634 *p*=.198

Abbreviations: †Independent t-test; **#**One-way ANOVA Test. *p <.05

Table 2. Results of the analysis of the scales according to infertility variables (*n = 186*).

		Core FertiQoL	Treatment FertiQoL	Total FertiQoL	Treatment and services	Disease pre-vention/health promotion	Total THLS-32
Variables	***n* (%)**	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Type of infertility							
Primary	137 (73.7)	61.68±19.26	60.86±16.91	61.44±17.06	37.086±8.478	36.023±9.677	36.596±8.375
Secondary	49 (26.3)	60.23±18.58	68.16±15.26	62.56±15.84	36.540±9.214	35.638±9.349	36.084±8.750
Analysis†		t=457 *p*=.648	**t=-2.661p=.008***	t=-.417 *p*=.688	t=.378*p*=.706	t=.241*p*=.810	t=.363*p*=.717
Cause of infertility							
Female factor (a)	66 (35.5)	62.33±17.69	60.87±16.49	61.90±15.90	36.562±7.607	34.572±8.808	35.563±7.748
Male factor (b)	21 (11.3)	73.61±19.62	70.24±13.69	72.62±16.06	41.468±7.7087	41.353±7.758	41.420±7.443
Both partners (c)	25 (13.4)	56.67±16.23	57.70±15.54	56.97±15.07	34.354±12.3687	33.752±11.003	33.992±11.348
Unexplainable infertility (d)	74 (39.8)	58.45±19.71	64.09±17.58	60.11±17.12	36.871±7.966	36.317±9.732	36.688±7.761
Analysis#		**F=4.248 p=.006* (b-c; b-d)**	**F=2.656 p=.050***	**F=4.077 p=.008* (a-b; b-c; b-d)**	**F=2.782 p=.042* (b-c)**	**F=3.281 *p*=.022* (a-b ; b-c)**	**F=3.524 p=.016* (a-b ; b-c)**

Abbreviations: †Independent t-test; **#**One-way ANOVA Test. *p <.05

Table 3. Correlations between scale scores and various variables

	Mean	SD	1	2	3	4	5	6
Core FertiQoL	61.30	19.05	1	.560**	.970**	.103	.100	.110
Treatment FertiQoL	62.78	16.76		1	.746**	.081	.053	.069
Total FertiQol	61.73	16.71			1	.107	.097	.109
Treatment and services	36.94	8.66				1	.741**	.930**
Disease prevention/health promotion	35.92	9.57					1	.933**
Total THLS-32	36.46	8.45						1

Abbreviations: * *p*<.05; ***p*<.001 (Pearson correlation analyses).

medically, emotionally, psychologically, socially and financially (13). In this study, FertiQoL score was determined as 61.73±16.71 consistent with the literature (14). This result showed that there was a about 40-point decrease in the scale, that is, the treatment negatively affected the quality of life.

The lowest scores were on the emotional and the highest scores were on the relational sub-dimension. This result was similar to the literature (14-16). Infertility causes some psychological problems especially in women, such as emotional stress, depression, anxiety, and low self-esteem (17). Our result is important in terms of showing that emotional problems experienced affect the quality of life. Infertility processes can be easier for patients who can cope with infertility stress. Therefore, nurses and other health professionals should give psychological support to improve patients' emotional states. High scores on the relational sub-dimension suggest that infertile women feel satisfied with their relationships, have strong communication, and believe that fertility problems strengthen their commitment to their relationships.

The course of infertility treatment is a complex process. Patients need information to continue this course more healthily (18). Therefore, infertile individuals must reach the necessary information and understand, evaluate, use, and apply it during infertility and the treatment process. In our study, it was determined that the level of HL was insufficient-problematic/limited in 36% of women and adequate-perfect in 64%. Sahebalzamani et al. found that only 32.1% of infertile women had adequate HL (19). Bennett et al. reported that infertile women had an inadequate level of knowledge about infertility treatment, indicating a general lack of HL in women in terms of describing medical interventions (5). Health literacy plays a crucial role in shaping an individual's health-related actions and their probability of adhering to treatment suggestions (20). Given that the complex process of infertility treatment can impact adherence, enhancing health literacy among infertility patients is crucial.

In this study, the quality of life scores varied according to sociodemographic variables such as education level of the woman and her spouse, employment status in a paid job, and monthly income level. Those with a higher education level had better quality of life. There are studies in the literature showing that higher education level is associated with better quality of life (3, 16, 21). In this study, those employed in paid jobs and those with higher monthly incomes had better quality of life. In the literature, there are studies that support our findings, indicating that employment in a paid job and having a higher economic status are associated with higher quality of life in infertile women (16, 21-23). These results suggest that a higher education level, employment in a paid job, and a high-income level may be associated with having better opportunities that can enhance the quality of life.

In our study, it was determined that the quality of life of women with male factor infertility was higher than other reasons. In a qualitative study, it was determined that problems that infertile women frequently faced were social pressure and stigmatization, they also felt excessive responsibility towards society and their spouses, and that they saw the inability to have children as a burden (24). Infertile women generally had more negative experiences related to infertility in many areas, such as lower self-esteem and physical health, and experienced higher levels of depression, stress, anxiety, stigma, and shame (25). Based on these results, the fact that these symptoms are more common in women explains the low quality of life in those with a female factor as the cause of infertility.

In our study, no relationship was found between the quality of life and number of infertility treatments and the duration of infertility. It can be said that women's quality of life is similarly affected regardless of the duration of infertility and the number of treatments due to the burdens that infertility and the treatment process may bring.

HL has been shown to affect quality of life in different groups (4, 9, 10). To the best of our knowledge, our study is the first to evaluate the relationship between HL and quality of life in infertile women. In our study, it was determined that there is no relationship between the HL of infertile women and their quality of life. Quality of life can be affected by social, psychological, economic and cultural factors (10). It is thought that the quality of life of the women may have been affected by these factors other than HL.

Conclusion

Infertility treatment can be difficult, and disturbing. The women's quality of life in this specific treatment process is important. In this study, it was observed that the quality of life of women who received infertility treatment was not at the desired level. The HL level was inadequate-problematic/limited in 36% of participants and that there was no significant relationship between HL and quality of life. It is recommended that nurses, and other health professionals in the team should plan interventions to improve quality of life and HL during the infertility treatment.

Limitations

This study has several limitations. Firstly, the data were collected from a single center, limiting the generalizability of the findings to the broader population of infertile women. Secondly, our study included infertile women while excluding their spouses from the scope of the research.

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Author contributions: MNA: Conceptualization, Investigation, Methodology, Project administration, Writing – original draft. FÖ: Supervision, Conceptualization, Investigation, Methodology, Project administration, Writing – original draft.

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