

Research Article

Healthy Lifestyle Behaviors in Infertile Women and Affecting Factors: Turkey Sample

Rukiye Höbek Akarsu^{1*}, Özlem Şahan², Sevda Demir³, Rabia Atilla⁴ and Derya Yüksel Koçak⁵

¹Department of Nursing, Yozgat Bozok University, Turkey

²Department of Midwifery, Antalya Bilim University, Turkey

³Department of Nursing, Arel University, Turkey

⁴Department of Nursing, Niğde Ömer Halis Demir University, Turkey

⁵Department of Nursing, Hitit University, Turkey

Abstract

*Corresponding author

Rukiye Höbek Akarsu, Department of Nursing, Yozgat Bozok University, Yozgat, Turkey, Tel: 905069016738; Email: rukiye.hobek@hotmail.com

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Keywords

- Infertility
- Healthy lifestyle behaviors
- Women
- Nursing

Objective: The aim of this study is to determine the healthy lifestyle behaviors of infertile women and the factors affecting them.

Methodology: The study was planned in cross-sectional type. For this reason, 190 infertile women followed in a public hospital in Istanbul between September and December 31, 2020 formed the sample of the study. The data of the research; Data were collected using an introductory information form prepared in line with the literature (resources) and the Healthy Lifestyle Behaviors Scale. Mann Whitney U tests were used in the analysis of two-category data, and Kruskal Wallis tests were used in the analysis of data in more than two categories.

Results: The mean age of the women participating in the study was 31.84 ± 5.80 years, more than half (55.8%) were housewives, and 41.6% were childless for more than 5 years. The mean score of healthy lifestyle behaviors (HLBS) of infertile women is 121.66 ± 23.44 . The sociodemographic status of women, such as working status and occupation, is not affected by the mean HLBS score ($p > 0.05$). Education level, duration of infertility diagnosis, and the attitude of the spouse and family to the diagnosis of infertility affect the mean HLBS score ($p < 0.05$).

Conclusion: It was determined that the mean HLBS mean scores of women who had a negative spouse attitude after infertility, had a "critical-condescending" family attitude and were ashamed of their spouse and family were found to be lower ($p < 0.05$).

INTRODUCTION

Infertility is a non-life-threatening health problem in which pregnancy cannot be achieved despite regular and unprotected sexual intercourse for 12 months [1]. 15% of couples of reproductive age are affected by infertility [2]. It is stated that approximately 37% of the factors causing infertility are due to women, 29% to men, 18% to both female and male factors, and 16% to unexplained infertility [3]. In addition to the negative effects of developing technology and industrialization on human health, it is noted that environmental harmful factors (lead, pesticides, etc.) have negative effects on the reproductive system, which is highly sensitive, and increase infertility [4-6]. It is emphasized that the first step to be taken in the solution of infertility, which is a global problem, is to identify risky health behaviors and develop healthy lifestyle behaviors due to its positive effects on infertility prevention and treatment [7,8].

Developing a healthy lifestyle in women can contribute to the optimum level of fertility and prevention of infertility by improving general health and well-being [9,10]. Risky lifestyle behaviors related to infertility are changeable habits, behaviors and situations that have negative effects on fertility. Individual

lifestyle behaviors that have been reported to have adverse effects on the female reproductive system and fertility, most commonly smoking [3,11], alcohol consumption [12,13] and drug use [3], body mass index (BMI) below 17 kg/m^2 and over 27 kg/m^2 [12], 250 mg daily excessive caffeine consumption [10,12], insufficient or heavy exercise [9,10], stress [13], high calorie, It has been reported as a diet rich in trans fats and refined carbohydrates [14,15]. In addition, in two systematic reviews examining the effects of environmental and occupational exposures on female infertility, the negative effects of air pollution [16], mostly phthalates, bisphenol A, pesticides [17], on reproductive functions were reported. It has been determined that infertile women use wi-fi-connected technological devices (phones, laptops, etc.) for more than 6-8 hours [13]. All listed lifestyle behaviors and habits are changeable factors that are under the control of the individual [18].

Determining the lifestyle behaviors of infertile couples and improving healthy behaviors by changing the risky ones have an important place in solving the infertility problem, which is expected to increase today, and in increasing the chance of success in assisted reproductive techniques (ART). Physicians, nurses and midwives have important roles and responsibilities

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in developing healthy lifestyle behaviors and reducing risky situations. It is necessary and important to know the risky lifestyle behaviors of women in order to increase the general health level of women, protect their fertility potential, and plan the necessary education, care and treatment comprehensively for health professionals during the infertility treatment process [9,10].

In the literature, there are various studies examining healthy lifestyle behaviors in terms of infertility with different dimensions, their effects on female infertility, and it is stated that more evidence is needed [3,11,14,15,17,19]. A limited number of studies have been found examining healthy lifestyle behaviors in infertile women in Turkey [13,20,21]. For this reason, increasing the number of studies examining the healthy lifestyle of infertile women, taking the necessary precautions for infertility, which is a global problem, will contribute to the development of education and treatment strategies. In this study, it was aimed to determine the healthy lifestyle behaviors of infertile women and the affecting factors.

Research questions

- What are the healthy lifestyle behaviors of infertile women?
- What are the factors affecting the healthy lifestyle behaviors of infertile women?

MATERIAL AND METHODS

Research design

In order to determine the healthy lifestyle behaviors of infertile women and the factors affecting them, a descriptive study in quantitative design was planned with the participation of infertile women followed in a public hospital in Istanbul between September 1 and December 31, 2020.

The population and sample of the research

The study was planned in cross-sectional type. For this reason, 190 infertile women followed in a public hospital in Istanbul between September and December 31, 2020 formed the sample of the study.

Data collection tools

The data of the research; Data were collected using an introductory information form prepared in line with the literature (resources) and the Healthy Lifestyle Behaviors Scale.

Introductory Information Form: Socio-demographic (age, education, occupation, employment, income, place of residence, duration of marriage) and infertility-related characteristics of primary infertile women (infertility duration, cause, treatment period) and the attitude of the spouse and family to the diagnosis of infertility It consists of questions about the desire to adopt, the effects of the diagnosis of infertility on the relationship between spouses.

Healthy lifestyle behaviors scale (HLBS)

Turkish validity and reliability study of the scale developed by Walker, Bahar et al., by The scale, which consists of a total of

52 questions, is in a 4-point Likert type. The scale consists of 6 sub

dimensions as health responsibility, exercise, nutrition, stress management, interpersonal relationships and spirituality. Each item of the scale is evaluated as 1 point for "never", 2 points for "sometimes", 3 points for "often" and 4 points for "regularly". The score that can be obtained from the scale varies between 52 and 208, and an increase in the total score from the scale indicates that healthy lifestyle behaviors are positive. In the validity and reliability study of Bahar et al., it was determined that the Cronbach Alpha reliability coefficient ranged between 0.94 for the total scale and 0.79-0.87 for the 6 sub-dimensions [22,23]. In our study, while the Cronbach Alpha reliability coefficient was calculated as 0.94 for the whole scale, it was calculated as 0.75 for the health responsibility sub-dimension, 0.73 for the exercise sub-dimension, 0.69 for the nutrition sub-dimension, and 0.76 for the spirituality and interpersonal relations sub-dimension.

Analysis of data

SPSS 22.0 package program was used for statistical analysis in the study. Descriptive statistics were calculated as number (n) and percent (%), mean (X), and Standard deviation (SD). Kolmogorov-Smirnov distribution test was applied to examine the normal distribution and it was determined that the data were non-parametric. For this reason, Mann Whitney U tests were used in the analysis of two-category data, and Kruskal Wallis tests were used in the analysis of data in more than two categories.

Ethical statement

Ethical approval was obtained from a university clinical Ethics Committee (Decision No: 103-14/17). Before the research questions were asked, an informed consent form was included in the online system explaining the purpose of the research and the use of personal data for scientific research. Participants were first asked to read the informed consent document, and then their consent was obtained.

RESULTS

The distribution of sociodemographic characteristics of infertile women is given in Table 1. The mean age of the participants was 31.84 ± 5.80 years, and more than half (50.5%) were between the ages of 30-39. 57.4% of them are secondary school graduates, 64.2% of them are not working. More than half of the participants (55.8%) are housewives. 6 out of 10 participants perceive their income as medium level and 6 out of 10 participants do not live in the city center.

Table 2 gives the distribution of some characteristics of infertile women regarding the infertility problem. Approximately 1 out of every 5 women participating in the study has been married for 11 years or more. 41.6% of them have been childless for more than 5 years- they could not have an involuntary child. While the source of infertility is female in 46.3%, the cause of infertility is unclear in 31.6%. 67.9% of the participants have been receiving infertility treatment for less than 5 years (mean 4.54 ± 3.43 years for all participants). 16.3% of the participants stated that their spouse's attitude changed after the diagnosis of infertility, and 21.1% stated that their families faced a critical

and prejudiced attitude. While 58.9% of infertile women did not consider adopting when they could not have children, 25.3%

stated that they were undecided. More than half of the women

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Table 1: Distribution of infertile women according to some sociodemographic characteristics.

Characteristics	N	%
Age	31,84±5,80	
20-29	73	38,4
30-39	96	50,5
40-46	21	11,1
Education Level		
Literate/primary school	21	11,1
High school	109	57,4
University	60	31,6
Working status		
Working	68	35,8
Not working	122	64,2
Occupation		
Housewife	106	55,8
Officer	17	8,9
Employee	49	25,8
Self-employed	18	9,5
Perception of economic level		
Good	37	19,5
Middle	114	60,0
Poor	39	20,5
Living place		
City	83	43,7
District	107	56,3
Total	190	100

(55.8%) stated that they were very unhappy in their marriage because they were diagnosed with infertility.

The mean score of infertile women from the HLBS was 121.66 ± 23.44 (median:123). While the average score they got from the spiritual development sub-dimension was 22.84 ± 4.79,

the average score they got from the exercise sub-dimension was the lowest (16.48 ± 4.2).

Perception of education level and income level of infertile women statistically affect the total mean score of HLBS. It was determined that women with a university or higher education level had higher HLBS total and all sub-dimension mean scores. It was found that women who perceived their income level as good had higher HLBS total score and exercise sub-dimension mean score (p<0.05). Age groups, employment status, occupation and place of residence of infertile women do not affect the mean HLBS score (p>0.05) (Table 4).

It was determined that the duration of marriage, the period of being childless, the infertile person, the duration of infertility treatment and the desire to adopt did not affect the mean HLBS scores of infertile women statistically (p>0.05). The attitude of the spouse's family to the diagnosis is not statistically affected by the factors of the effect of not having children on family life (p>0.05).

The attitude of the spouse towards the diagnosis of infertility, the status of the marital relationship after infertility and the attitudes of the families towards the diagnosis of infertility, the mean score of the infertile women from the HLBS show statistically significant differences (p<0.05).

It was determined that women with a negative spouse attitude and a "critical-condescending" family attitude after infertility had lower HLBS total and all sub-dimension mean scores (p<0.05). It was determined that women who were ashamed of their spouses and family had significantly lower mean scores on HLBS total and health responsibility, nutrition and spirituality sub-dimensions (p<0.05).

Table 2: Distribution of infertile women according to some features related to infertility characteristics.

Characteristics	N	%
Marriage duration	7,13±4,54	
1-10 years	153	80,5
11 years and above	37	19,5
Childlessness duration	5,46±3,46	
1-5 years	111	58,4
6 years and above	79	41,6
Source of infertility		
Herself	88	46,3
Partner	32	16,8
Both	10	5,3
The reason is not clear	60	31,6
Duration of infertility treatment	4,54±3,43	

Age							
20-29	20.70±4.94	16.48±3.87	20.33±4.39	22.93±4.98	22.27±4.74	18.22±4.03	120.93±23.47
30-39	20.80±4.84	16.36±4.67	21.04±4.34	22.76±4.85	22.43±4.75	18.22±4.07	121.61±24.24
40-46	21.71±4.52	17.05±3.54	21.71±3.45	22.90±3.92	22.52±4.64	18.52±3.86	124.43±20.24
*p value	0,804	0,341	0,974	0,832	0,827	0,783	0,992
Education Level							
Literate/primary school	20.29±6.18	15.24±4.04	20.10±4.88	21.81±5.76	21.62±5.66	17.43±4.80	116.48±28.67
High school	20.01±4.43	15.80±3.79	20.33±4.14	22.10±4.25	21.66±4.18	17.45±3.49	117.35±20.57
University	22.62±4.61	18.17±4.67	22.03±4.12	24.55±4.99	23.95±4.96	20.00±4.11	131.32±23.84
*p value	0,001	0,001	0,042	0,003	0,006	0,001	0,000
Working status							
Working	21.51±4.93	16.88±4.46	21.50±4.19	23.06±5.01	22.66±5.02	18.69±4.03	124.31±24.46
Not working	20.50±4.76	16.26±4.13	20.48±4.30	22.72±4.68	22.22±4.55	18.01±4.00	120.19±22.82
**p value	0,128	0,382	0,142	0,744	0,585	0,288	0,239
Occupation							
Housewife	20.67±4.76	16.25±4.16	20.56±4.42	22.76±4.75	22.21±4.66	17.93±3.98	120.39±23.22
Officer	22.29±4.19	17.47±3.34	21.59±3.91	23.82±5.14	24.12±5.38	19.71±4.03	129.00±22.47
Employee	20.67±4.97	16.02±4.12	21.22±4.01	22.43±4.51	21.98±4.53	18.31±3.79	120.63±22.53
Self-employed	21.17±5.57	18.17±5.51	20.78±4.61	23.50±5.63	22.83±4.85	18.61±4.75	125.06±28.10
*p value	0,544	0,219	0,809	0,489	0,314	0,500	0,318
Perception of economic level							
Good	22.27±5.09	18.16±4.71	21.65±4.73	23.57±4.95	23.22±4.70	19.00±4.28	127.86±26.02
Middle	20.89±4.72	16.49±4.12	21.09±4.16	23.14±4.79	22.60±4.86	18.48±3.90	122.69±22.61
Poor	19.44±4.62	14.87±3.58	19.36±3.90	21.28±4.42	20.95±4.04	16.87±3.85	112.77±21.20
*p value	0,089	0,008	0,069	0,063	0,077	0,067	0,020
Living place							
City	21.06±4.63	16.55±4.35	20.95±4.32	22.97±4.40	22.62±4.32	18.14±3.99	122.29±22.42
District	20.61±5.10	16.40±4.14	20.70±4.24	22.67±5.27	22.07±5.18	18.40±4.07	120.86±24.81
**p value	0,734	0,702	0,678	0,604	0,463	0,726	0,760
* Kruskal Wallis Test and Mann-Whitney U							

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Table 5: Distribution of the total and sub-dimension mean scores of some infertile women's infertility-related characteristics and healthy lifestyle behaviors scale.

Characteristics	Health Responsibility	Exercise	Nutrition	Spirituality	Interpersonal Relationships	Stress Management	Total
Marriage duration							
1-10 years	20.73±4.74	16.41±4.20	20.72±4.11	23.00±4.72	22.41±4.52	18.34±3.96	121.60±22.61
11 years and above	21.41±5.24	16.81±4.48	21.35±4.92	22.19±5.07	22.27±5.51	17.89±4.25	121.92±26.96
<i>p</i>	0,607	0,865	0,234	0,573	0,431	0,596	0,849
Childlessness duration							
1-5 years	21.00±4.69	16.48±4.27	20.65±3.91	23.10±4.61	22.20±4.60	18.49±3.94	121.91±22.21
6 years and above	20.67±5.05	16.49±4.25	21.11±4.75	22.48±5.03	22.63±4.88	17.92±4.12	121.32±25.21
* <i>p</i> value	0,607	0,865	0,234	0,573	0,431	0,596	0,849
Source of infertility							
Itself	21.49±5.12	16.58±4.61	20.74±4.86	23.00±5.20	22.47±4.94	18.39±4.29	122.66±26.18
Partner	20.72±4.60	17.38±4.74	21.09±4.15	22.88±5.48	22.59±5.12	19.16±4.37	123.81±24.87
Both	20.00±6.00	15.80±5.41	20.40±3.13	21.30±3.89	22.50±4.12	17.60±4.03	117.60±22.86
The reason is not clear	20.17±4.28	15.98±3.09	20.93±3.68	22.85±3.87	22.12±4.33	17.68±3.32	119.73±18.27
** <i>p</i> value	0,305	0,403	0,928	0,574	0,895	0,461	0,553
Duration of infertility treatment							
5 years and less	20,73±4,71	16,27±4,25	20,67±3,81	23,09±4,50	22,30±4,42	18,53±3,84	212,58±21,65
more than 5 years	21,15±5,11	16,93±4,25	21,21±5,14	22,33±5,35	22,54±5,31	17,67±4,33	121,84±27,03
* <i>p</i> value	0.551	0.257	0.131	0.507	0.502	0.299	0.484
Spouse attitude after infertility diagnosis							
No change	21,32±4,73	16,81±4,28	21,22±4,10	23,32±4,68	22,83±4,58	18,61±4,04	124,11±22,80
Changed positively	21,65±3,97	17,12±3,95	20,65±2,91	23,24±3,11	23,06±3,58	19,00±2,40	124,71±14,96
Changed negatively	18,32±5,06	14,65±3,89	19,23±5,30	20,42±5,41	19,94±5,20	16,23±4,06	108,77±26,32
** <i>p</i> value	0.014	0.039	0.174	0.016	0.014	0.019	0.021
Attitudes of families to the diagnosis of infertility							
No reaction	21.72±4.15	17.01±4.39	21.69±3.73	23.55±4.10	23.11±3.99	18.78±3.72	125.87±19.93
They were understanding and supportive	21.30±5.33	16.85±4.15	20.58±4.25	23.00±5.36	22.47±5.16	18.64±4.39	122.85±25.67
They were critical and condescending	18.20±4.85	14.73±3.62	19.13±5.02	20.93±5.16	20.48±5.26	16.45±3.74	109.90±24.87
** <i>p</i> value	0.001	0.013	0.011	0.022	0.015	0.007	0.002
Desire to adopt							

Yes	20,33±4,49	17,27±3,98	21,10±4,07	23,20±5,31	22,40±5,13	17,37±3,38	121,67±22,03
No	21,37±4,79	16,53±4,35	21,13±4,50	22,83±4,79	22,30±4,57	18,30±4,10	122,46±24,22
Not sure	20,02±5,07	15,90±4,18	20,00±3,80	22,65±4,52	22,54±4,87	18,69±4,16	119,79±22,80
** p value	0.182	0.196	0.282	0.839	0.916	0.443	0.907
Marital relationship after infertility diagnosis							
I am very sorry	21.63±4.21	16.97±3.86	21.26±3.72	23.36±4.14	22.94±4.14	18.85±3.68	125.02±19.94
I'm afraid of divorce	17.33±3.32	14.00±3.81	18.00±3.54	20.22±5.02	19.22±5.04	16.00±5.43	104.78±23.14
I am ashamed of my spouse and its family	15.67±6.11	16.67±6.81	16.67±2.08	19.00±5.00	19.33±4.73	16.00±5.57	103.33±27.59
I am so unhappy	21.02±5.80	16.35±4.53	21.19±5.43	21.77±5.55	21.91±5.51	17.63±4.19	119.86±28.36
Nothing has changed	19.45±4.84	15.66±4.92	20.10±4.17	23.76±5.28	22.31±5.04	17.93±4.11	119.21±24.96
** p value	0.006	0.100	0.022	0.039	0.149	0.059	0.036
* Kruskal Wallis Test and Mann-Whitney U							

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DISCUSSION

A healthy lifestyle means controlling behaviors that may affect health, choosing behaviors appropriate for individual health in daily activities, and taking responsibility for one's own health [24]. Studies examining healthy lifestyle behaviors in infertile couples have reported that as education level increases, healthy lifestyle behavior scores also increase [25,26]. It is also reported that it is effective for women to work, have economic power, and gain positive knowledge, attitudes and behaviors on health-related issues [27]. It was determined that the total and all sub-dimension mean scores of infertile women participating in our study who had a university or higher education level were higher. It was found that infertile women who perceived their income level as good had higher HLBS total score and exercise sub-dimension mean score ($p < 0.05$) (Table 4). As the education level increases, it can be thought that the search for healthy lifestyle behaviors of working women is better because the probability of women to find a job outside the home with higher status, better pay and social security increases. When the infertility history of infertile couples was examined, it was determined that 58.4% of them had infertility for 1-5 years, and the source of infertility was women in 46.3% (Table 2). Teskereci reported that 61% of them were infertile for 1-5 years, 47.5% were infertile due to women, and 83.5% were primary infertile, while Okuducu and Yorulmaz reported that more than half of the patients had infertility. reported that the duration of infertility was 3-5 years, primary infertility was seen in 81%, and the cause of infertility was caused by the woman in 51% of them [28,29]. The findings of our study show similarities with other studies. As the infertility period of infertile couples gets longer, healthy lifestyle behaviors also decrease. In our study, the mean score of women with a diagnosis of infertility for more than 5 years on the HLBS was low ($p = 0.021$) (Table 4). Studies have shown that a long history of infertility negatively affects healthy lifestyle

behaviors [28,30]. Health responsibility is the individual's feeling of active responsibility for his own well-being. It is to take care of his own health and to seek professional help when it is necessary to be informed about health [22]. The mean score of health responsibility in Kılınc's study was 21.2 ± 5.7 , 20.96 ± 3.39 in Kaya's study, and 19.96 ± 4.75 in Altınparmak's study [20,21,31]. In our study, the mean health responsibility score of infertile women was found to be 20.86 ± 4.83 (Table 3). The fact that the mean score of health responsibility, which is the sub-dimension of HLBS, is not very high is due to the low level of education of infertile women in our study and other studies. As the education level of the individual increases, his/her health perception changes positively and he/she undertakes his/her own health responsibility more. Having children keeps the family in balance and increases marital satisfaction.

In the absence of a child, marital problems may arise. In our study, 16.3% of women stated that their spouses' attitudes changed negatively after the diagnosis of infertility, while 21.1% stated that they faced a critical and prejudiced attitude from their families. More than half of the women (55.8%) stated that they were very unhappy in their marriage after being diagnosed with infertility (Table 2). Although it is a condition that negatively affects both genders, it is known that infertility affects women more in many societies due to sociocultural factors. The findings of

our study also show that the spouse's attitude changes negatively after the diagnosis of infertility, the marital relationship status after infertility and the attitudes of the families towards the diagnosis of infertility, and the average score they get from the sub-dimensions of the HLBS is lower (Table 5). Due to the socio-cultural structure of our society, women cannot fulfill the expected motherhood role and the pressures made or felt in this regard cause women to feel inadequate and incomplete. In our study, the negative attitude of the woman caused her to feel inadequate and incomplete in the eyes of her husband, to lose the

love of her husband due to infertility or to worry about divorce, and thus the woman's being unhappy in her husband's marriage. Altıparmak et al., investigated the effect of fertility-supportive behavior training given to infertile women on healthy lifestyle behaviors and infertility self-efficacy, and reported that the mean HLBS score increased significantly in the experimental group after the training (experiment: 136.52 ± 19.25 , control: 126.90 ± 17.02 , $p < 0.05$). On the other hand, Kılıç reported the mean HLBS I score of infertile women participating in the study as 129.7 ± 28.1 in his study, while Kaya (2016) reported it as 126.90 ± 17.02 . In our study, the mean HLBS score was found to be 121.66 ± 23.44 (median: 123). The findings of our study show similarities with other studies.

It is reported that the development of healthy lifestyle behaviors for fertility and the improvement of general health have an important place in preventing infertility and optimizing fertility ability [9]. As stated in the studies, it is stated that the trainings given to infertile women to gain healthy lifestyle behaviors can increase the mean HLBS score and their fertility chances [20,28]. Most healthy lifestyle behaviors are changeable habits that can be reversed by individuals with strong determination. Reducing health risks in the development of healthy lifestyle behaviors and gaining healthy lifestyle behaviors are among the most basic functions of health professionals [9]. The effect of healthy lifestyle behaviors on infertility treatment

is very important. Health professionals need to give more advice to patients about healthy lifestyle behaviors in determining health risk behaviors, planning and implementing interventions to change behavior. The number of studies on healthy lifestyle behaviors in infertility is very insufficient. It is recommended to plan more comprehensive studies that can guide a healthy life within the scope of infertility counseling.

CONCLUSION

The mean score of infertile women from the HLBS was 121.66 ± 23.44 . It was determined that women with a negative spouse attitude and a "critical-condescending" family attitude after infertility had lower HLBS total and all sub dimension mean scores. It was determined that women who were ashamed of their spouses and family had significantly lower mean scores on HLBS total and health responsibility, nutrition and spirituality sub-dimensions.

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