

## Eğitim Düzeyi Kısırlıkta Destekleyici Tedavi Yöntemini Belirleyen ve Etkileyen Bir Faktördür

### Education Level is a Factor That Determines and Affects The Supportive Treatment Method in Infertility

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#### Özet

**Amaç:** Bu çalışmada infertil hastaların destekleyici tedavi yöntemlerine bakışını, neler kullandıklarını ve bunların eğitim düzeylerine bilgiye nasıl eriştiklerini araştırmayı planladık. Literatürde bu konuda bilgi eksikliği olduğu, hastaların net bilgileri olmadanbu tedavileri kullandığını düşündük. Bu şekilde hastaları tedavi konusunda daha iyi aydınlatarak infertil hastalardaki başarı şansımızı arttırmayı planladık.

**Gereç ve Yöntemler:** Bu çalışma Kahramanmaraş Sütçü İmam Üniversitesi Tıp Fakültesi Kadın Hastalıkları ve Doğum ABD tüp bebek ünitesine başvuran farklı yaş, sosyo-ekonomik düzey ve demografik özelliklere sahip 300 hastayı içeren yüzyüze yapılmış kesitsel bir anket çalışmasıdır.

**Bulgular:** Katılımcıların çoğu 20-30 yaşları arasında idi ve çoğunun destek tedavileri hakkında hiçbir bilgisi yoktu. Eğitim seviyesi arttıkça, doktordan öğrenme seviyesinin, internet, medya ve diğer iletişim araçları ile bilgiye ulaşımın arttığını soğan suyu zencefil, karabaş otu, kullanımın azaldığını, probiyotik, aloe vera kullanımının arttığını gözlemledik.

**Sonuç:** İnfertil hastalarınçocuk istemi için aldıkları tedavilerde tıbbi tedavinin yanı sıra destek tedavileri arama ihtiyacı duydukları ve eğitim düzeyi düşük olanlarda hastanın yakın çevrelerinin etkili olduğu, eğitim seviyesi arttıkçada kitle iletişim araçlarının bilgiye ulaşmada etkili olduklarını gözlemledik.

**Anahtar Kelimeler:** Fitoterapi, Bitkisel tedaviler, Tamamlayıcı tedaviler, İnfertilite

#### Abstract

**Objective:** In this study, we planned to investigate the view of infertile patients to supportive treatment methods and their use according to their education level and how they access information. We thought that there was a lack of information on this subject in the literature and that patients used these treatment without clear information

**Material and Methods:** It is a cross-sectional survey survey involving 300 patients of different ages, socio-economic levels and demographics who applied to kahramanmaraş sütçüimam university IVF unit.

**Results:** Most of the participants were between the ages of 20-30 and the majority of the illiterates had no information on support treatment, but they received the most information from the doctors. We found that as the level of education increases, the level of knowledge increases, and the level of learning from doctors as well as the internet, media and communication tools increases. The use of onion juice, chaste grass, ginger, karabas grass decreased as the level of education increased, while the use of probiotics and aloe-vera increased as the level of education increased proportionally. Manipulative and body-based treatments (massage, etc.), body-mind therapy (hypnosis, relaxation, etc.) as supportive treatment methods were found to increase as the level of education increased proportionally.

**Conclusion:** We have concluded that infertile patients feel the need to seek support treatments as well as medical treatment and when deciding which treatment to choose, the near environment, relatives are effective in those with low education levels, and the internet and mass media are more used as education levels increase

**Keywords:** Phytotherapy, Infertility, Herbal Medicine, Complementary Therapies

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## INTRODUCTION

Infertility is a condition in which women under the age of 35 are unable to conceive for at least one year despite non-protective sexual intercourse (1). It is colloquially called 'infertility,' meaning inefficiency. The instinct to ensure the survival of the generation is the most basic instinct found in all living things, reproductive function gains great significance and infertility is a major health problem in all societies (2). In our country, the inability to have children is interpreted as a lack of women and therefore women are under more pressure (3).

Infertility is known to be caused by many anatomical, physiological and psychological reasons, but it affects partners equally regardless of the cause (1). For couples, infertility is a chronic stress factor, the extended diagnosis and treatment period also contributes to the stress is known (4). Couples remain under peer pressure, and are forced to share their special problems with their families and their close environment, and even they are beginning to move away from each other (5). It is known to cause mood disorders such as loss of self-confidence, feeling of guilt and deficiency, depression, anxiety, despair in spouses (6). Infertility is not actually a disease, but it is a serious social problem that directly affects partners and society (5).

Since infertility treatment is a very complex and long-term treatment, it is thought that individuals should be supported psychologically (5). Since it is so effective, spouses can refer to alternative treatment methods as well as medical treatment in order to find a solution (7). As alternative treatment method they are experimenting with supportive treatment methods where the plants are used (8).

It is known that the frequency of supportive treatment in infertility varies according between countries (9). However, in recent years it is known that in many developing and industrialised countries the frequency of use of supportive treatment aspects has increased (10). Our aim in this study is to determine the frequency of the use of supportive treatment methods of women admitted to our center due to infertility and its relationship with educational levels.

## MATERIAL and METHODS

The study was planned according to the principles of the Helsinki Declaration. The study was approved by the Kahramanmaraş Sutcu Imam University Medical Faculty Faculty of Medicine Ethics Committee at 07.03.2018 with the approval number 89621. This study is a cross-sectional survey, was carried out Kahramanmaraş Sutcu Imam University Medical Faculty IVF unit, implemented on the infertility patients with different demographic characteristics and agree to participate the survey in which they answered a face to face questionnaire that was set by us. Patients were randomly selected.

During the research phase, 20 minutes is given to each participant to answer the questions prepared by us face to face. The study consisted of 300 patients randomly selected from different age group socio-demographic levels and educational levels. Patients who do not want to participate in the study were excluded from the study. The questionnaire was prepared to include 35 questions in a multiple choice style. The questions and the answers were read to the patients and they were asked that which answer was elegant.

**Statistical Analysis:** Statistical parameters of categorical variables were expressed with frequency (n) and ratio (%) in the evaluation of the data. The frequency distribution relationship of groups according to variables was examined by Chi-square test and the Fisher exact test. A p value of <0.05 was considered as statistically significant. Statistical analysis was performed using SPSS version 22.0 software (IBM SPSS for Windows version 22, IBM Corporation, Armonk, New York, United States).

## RESULTS

The majority of applicants were found to be between 20 and 30 years old, university educated, the majority did not work and did not have children (**Table 1**).

It was found that while the majority of illiterates did not have information about the supportive treatment, they received the most information from doctors about this topic. (**Table 2**).

With 0.05 Chi-square value, this relationship is statistically significant.

We found that as the level of education increases, the level of knowledge increases, and the level of learning from doctors as well as the internet, media and communication tools increases. For the effectiveness of supportive treatment methods, it was found that while the majority of the illiterate had no idea, the number of those who thought useful and partially useful increased as education level increased (**Table 3**).

With 0.05 Chi-square value. This relationship is statistically significant

The difference in the distribution of thoughts on the effectiveness of supportive treatment methods according to the level of education was found statistically significant.

The use of onion juice, chaste grass, ginger, karabas grass decreased as the level of education increased, while the use of probiotics and aloe-vera increased as the level of education increased proportionally. Manipulative and body-based treatments (massage, etc.), body-mind therapy (hypnosis, relaxation, etc.) as supportive treatment methods were found to increase as the level of education increased proportionally (**Table 4**).

**Table 1. Socio-demographic characteristics of the participants**

		N	%
Age	under 20 years	18	5.5
	20-30 years	112	34.5
	30-40 years	96	29.5
	40-50 years	62	19.1
	over 50 years of age	37	11.4
Educational Level	Illiterate	6	1.8
	Primary school	78	24
	Secondary school	45	13.8
	High school	72	22.2
	University	102	31.2
	Postgraduate	22	6.8
Employment status	Employed	137	42.2
	Unemployed	188	57.8
Number of children	No	173	53.2
	1	57	17.5
	2	67	20.6
	3 and more	28	8.6

**Table 2. The relationship between education level and where they get information about the supportive treatment.**

Where did you get information about the supportive treatment?	Educational Level												P
	Illiterate		Primary school		Secondary school		High school		University		Postgraduate		
	n	%	N	%	n	%	N	%	n	%	n	%	
I have no information	3	50	15	19,2	9	20	10	13,9	21	20,6	3	13,6	0,084
Doctor	2	33,3	23	29,5	15	33,3	17	23,6	22	21,6	2	9,1	
Internet	0	0,0	3	3,8	4	8,9	15	20,8	21	20,6	6	27,3	
Media channel (TV, newspaper, internet)	0	0,0	14	17,9	3	6,7	12	16,7	12	11,8	6	27,3	
Through the person (relatives, friends, etc.)	1	16,7	17	21,8	11	24,4	17	23,5	18	17,6	4	18,2	
Through herbalist	0	0,0	0	0,0	1	2,2	0	0,0	2	2,0	1	4,5	
Through other people who have the same disease	0	0,0	6	7,7	2	4,4	1	1,4	6	5,9	0	0,0	

**Table 3. The relationship between education level and where they get information about the supportive treatment.**

What are your thoughts on the effectiveness of supportive treatment methods?	Educational Level												P
	Illiterate		Primary school		Secondary school		High school		university		Postgraduate		
	n	%	n	%	n	%	N	%	N	%	n	%	
Helpful	1	16,7	27	34,6	16	35,6	27	37,5	36	35,3	6	27,3	0,001*
Unhelpful	0	0,0	8	10,3	0	0,0	2	2,8	2	2,0	2	9,1	
Partly helpful	0	0,0	19	24,4	13	28,9	32	44,4	45	44,1	11	50	
partly unhelpful	1	16,7	2	2,6	0	0,0	2	2,8	1	1,0	1	4,5	
I have no idea	4	66,7	22	28,2	16	35,6	9	12,5	18	17,6	2	9,1	

**Table 4. The relationship between education level and using the supportive treatment methods**

Which supportive treatment method have you used before?		Educational Level												p
		Illiterate		Primary school		Secondary school		High school		University		Postgraduate		
		n	%	N	%	n	%	N	%	N	%	n	%	
onion juice	I used	2	33,3	43	55,1	18	40	28	38,9	30	29,4	3	13,6	0,002*
	Never used	4	66,7	35	44,9	27	60	44	61,1	72	70,6	19	86,4	
Probiotics	I used	0	0,0	2	2,6	1	2,2	4	5,6	8	7,8	6	27,3	0,001*
	Never used	6	100	76	97,4	44	97,8	68	94,4	94	92,2	16	72,7	
Aloe Vera	I used	0	0,0	1	1,3	1	2,2	3	4,2	6	5,9	4	18,2	0,029*
	Never used	6	100	77	98,7	44	97,8	69	95,8	96	94,1	18	81,8	
Karabas grass	I used	1	16,7	10	12,8	1	2,2	3	4,2	2	2,0	2	9,1	0,025*
	Never used	5	83,3	68	87,2	44	97,8	69	95,8	100	98	20	90,9	
Chaste grass	I used	2	33,3	6	7,7	5	11,1	2	2,8	2	2,0	0	0,0	0,003*
	Never used	4	66,7	72	92,3	40	88,9	70	97,2	100	98	22	100	
Ginger	I used	0	0,0	8	10,3	4	8,9	12	16,7	32	31,4	9	40,9	0,001*
	kullanmadım	6	100	70	89,7	41	91,1	60	83,3	70	68,6	13	59,1	
Manipulative and body-based treatments (massage etc.)	I used	0	0,0	0	0,0	0	0,0	0	0,0	2	2,0	4	18,2	0,001*
	Never used	6	100	78	100	45	100	72	100	10	98	18	81,8	
Body-mind therapy (hypnosis relaxation etc.)	I used	0	0,0	0	0,0	0	0,0	0	0,0	2	2,0	3	13,6	0,001*
	Never used	6	100	78	100	45	100	72	100	10	98	19	86,4	

With 0.05 Chi-square value, this relations is statistically significant. The distributional difference in the of onion juice was found significant to the level of education. The distributional difference in probiotic use was found significant to the level of education. According to the education level, the distributional difference in the use of aloe -vera was found significant. The distributional difference in the use of black grass was found significant according to the level of education. According to the education level, the distributional level in the use of herb was found significant.

The distributional difference in the use of ginger was found significant according to the level of education. The difference in the distribution of the use of manipulative and body-basements treatments according to the level of education was found statistically significant.

The distributional difference in the use of body mind therapy appcations according to the level of education was found statistically significant.

## DISCUSSION

We found that the use of supportive treatment methods varies according to the level of education. It was found that while the majority of illiterates did not have information about the supportive treatment, they received the most information from doctors about this topic. We found that as the level of education increases, the level of knowledge increases, and the level of learning from doctors as well as the internet, media and communication tools increases. For the effectiveness of supportive treatment methods, it was found that while the majority of the illiterate had no idea, the number of those who thought useful and partially useful increased as education level increased.

The use of onion juice, chaste grass, ginger, karabas grass decreased as the level of education increased, while the use of probiotics and aloe-vera increased as the level of education increased proportionally. Manipulative and body-based treatments (massage, etc.), body-mind therapy (hypnosis, relaxation, etc.) as supportive treatment methods were found to increase as the level of education increased proportionally.

The effect of educational level in accessing information about supportive treatment:

Having knowledge about this issue plays an important role in the application of supportive treatment. In this study, we found that those with low levels of education had low levels of knowledge. They received more information from doctors, but as the level of education increased, the percentage of information gathering from the internet and media sources increased. However, a study conducted in our country found that the use of media sources such as television to access information is more common and could not be shown to be related to the level of education. Another study with infertile women showed that the majority of women who used supportive therapy learned these methods from their families, relatives and friends (51,4%), while very few people used them on the recommendation of a doctor (2.2%), but the relationship with their level of education is not known (11). Another study did not find a relationship between the method of use of supportive therapy and the level of education (12). However, another study found that women with low levels of education often use supportive therapy methods more often (13). When the literature is examined, it is seen that the data between access to information and the level of education is limited, but it suggests that this issue is important. Sociocultural characteristics, geographical region differences are important factors in accessing and using information (14). In this study, the decrease in access to information from a doctor, i.e. from a healthcare organization, in inverse proportion to the level of education, is due to the fact that they can easily access information without contacting the healthcare organization and easily at any time.

Biology-based treatments (plants, pharmacological, biological interventions etc.)

These applications include food, vitamins, minerals, etc.

In which natural substances are present. The use of plants for various purposes dates back as far as human history (15). Since ancient times in Anatolia, plants have been used for various purposes (16), *Mandragora* species known as "mandrake root" in Turkish is known to be one of the oldest plants used in infertility treatment (17).

It is known that the use of herbal therapies in infertility and many other diseases is widespread and has increased in recent years due to the fact that they are easy to reach, low cost and less risk of side effects (10). In the study of infertile women in our country, it was shown that 27,3% of women tried a traditional practice, the majority of them using herbal mixtures (17). Another study showed that the majority of those who preferred herbal therapy were couples with low income and education levels (18). It was shown in the study that women who reported using a vegetable-derived mixture for infertility treatment commonly used onion juice (9). Onion juice cure is one of the most used herbal therapies not only in infertility but also in other gynecologic diseases and it was shown in the study conducted in our country (19). In this study, we found that plants such as onion juice, chaste grass, ginger, karabas grass were used more in those with low educational levels and this study supports these studies and shows that the information we call folk medicine, which is transmitted by word of mouth among the public, which is easy to reach and cheap, which is not based on scientific facts, still remains valid.

Studies have shown that probiotics have positive effects on lipid metabolism due to their cholesterol-lowering effects (20). Hypercholesterolemia can cause male infertility by increasing lipid peroxide levels and causing morphological changes in the sperm cell (21). The positive effects of probiotics on the seminal microbiome have been shown in recent studies where they can be considered among supportive treatment agents especially in male infertility due to their antihyperlipidemic effects (22). Studies on the use of probiotics to support vaginal microbiota in women have gained popularity (23). In our study, the increased use of probiotics by those with a high level of education confirms that they use information based on scientific evidence rather than information transmitted by word of mouth.

Herbal therapies are also widely used in cancer patients and a study has shown that cancer cases with high educational levels, prone to mental problems, prefer herbal therapy more (24). Another study showed that women between the ages of 18-39 are more likely to prefer herbal therapy because of obesity problems (10). Obesity as well as in infertile persons is a chronic disease that may also have negative effect on a person's entire life, that leads to mental, and social problems, obese individuals also shows to use trend of alternative treatment methods (25). In obesity with lifestyle changes is a long-term and difficult process to achieve results, such treatments are preferred with the idea of getting results in a shorter time (26). In cases that require chronic, long-term treatment such as infertility, obesity, cancer, people are also trying



alternative treatment methods and trying to find a source of hope. It is observed that herbal therapies continue to be used as the most easily accessible therapies.

Manipulative and body-based treatments (massage, exercise, hydrotherapy, reflexology) use;

We found that those using this type of alternative treatment increased as their level of education increased proportionally. Yoga is one type of exercise based on Indian philosophy and depended upon regulating brain and body chemistry with flexibility movements (27). Six weeks of yoga therapy has been shown to have a positive effect on fertility by reducing the level of anxiety and depression in individuals receiving infertility treatment (28). Another study found that 3 months of yoga therapy reduced stress scores in infertile women applying for in vitro fertilization (IVF) therapy (29). Stress is known to have a detrimental effect on fertility and it has been concluded that reducing stress has a beneficial effect on IVF patients (30).

Hydrotherapy is supportive and rehabilitative applications made with fresh water at 20 °C level and is also included in the scope of health tourism (31). Hydrotherapy performed for 1 hour a day in addition to physical therapy in patients with juvenile rheumatoid arthritis has been shown to achieve successful results (32). In a study conducted in pregnant women with obesity, it has been shown that hydrotherapy can be used as a method of coping with stress (33). It was also shown that hydrotherapy method was used to reduce birth pain by increasing relaxation in pregnant women, to improve the process during birth pain and to minimize the need for drug anesthesia (34). Although the literature on the use of hydrotherapy in infertility treatment is limited, it can be considered that it can be used to reduce stress factor in infertile people. The use of hydrotherapy is increasing in those who apply to us with high levels of education.

Reflexology is defined as an alternative medicine approach that direct local pressure applied to the special points or areas called as 'reflex area' which are associated with somatic areas on the hands, feet and ears. Reflexology is believed to reduce stress, regulate blood circulation, regulate the body's physiological balance (35). The foot reflexology in primiparas reduce birth pain (36) there are studies that proved the hand reflexology reduce stress in coronary angiography patients (37) a recent study found that most of the infertile women use herbal therapies, and also it was determined that the reflexology was used in a little portion as 6% in UK (38). Similarly, in our study, it is observed that the rate of reflexology use is low and that individuals with higher education levels use it. Although it is thought that the use of manipulative and body-based treatments is lower due to their high costs, they are not easily accessible, literature information on this subject appears to be limited.

The power of our study is a survey conducted by same physician asking questions in the form of questions and answers. The limitation of our study is that it is a questionna-

ire study in which complementary therapies used by patients in the pasta re questionnes. Most of studies on this subject are retrospective or case-control. There is a need for randomized controlled studies with case series.

As a conclusion, Since infertility treatment is a long-term and stressful process, we have concluded that regardless of the level of education, individuals feel to need support treatments as well as medical treatment. When deciding the treatment method, the near environment, relatives are effective in those with low education level, while the level of education increases the internet, mass media is used more and thus it shows information access is not limited to the near environment. Since the frequency of receiving information from the doctor is inversely proportional to the level of education, it shows that they can easily obtain information from the internet and the media without reaching a healthcare organization. It is seen that methods that are easy to reach and use, such as herbal therapies, do not require costs, are more widely used. In this article, we think that it will be light for treatment of infertility. They need informaton about infertility and supportive treatment.

#### Conflicts of interest

The authors declare that they have no conflict of interest.

#### Research Contribution Rate Statement Summary:

The authors declare that, they have contributed equally to the manuscript.

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