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The examination of the relationship between stigma and self-efficacy in women undergoing infertility treatment

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Abstract

This research aimed to explore the connection between stigma and self-efficacy in women undergoing infertility treatment. The research was designed as a descriptive and correlational study. The study's sample included 264 infertile women undergoing treatment for infertility. Data collection was conducted using the 'personal information form', the 'infertility self-efficacy scale', and the 'infertility stigma scale'. Based on the findings, women's mean score on the Infertility Stigma Scale was 55.0 ± 24.4 . The highest mean sub-dimension score was obtained from the public stigma, one of the sub-dimensions of the infertility stigma scale (18.9 ± 4.8). A notable negative correlation was found between the scores of the infertility stigma scale and the infertility self-efficacy scale ($r = -0.28$, $p < 0.01$). The results of the study indicated that increased levels of stigma led to a decline in women's self-efficacy. It is recommended that nurses increase their awareness of stigma and provide necessary interventions to increase women's self-efficacy in order to help women with infertility problems adapt to the treatment process.

Keywords: Infertility, infertility treatment, stigma, self-efficacy

Introduction

Infertility is characterized as the inability to achieve pregnancy despite consistent, unprotected sexual intercourse for a duration of less than one year for those under 35 years old, six months for individuals aged 35 to 40, and under six months for those over 40 [1]. According to the report published by the World Health Organization (WHO), an estimated 17.5% of the adult population in the world, or roughly one in every six people, has an infertility problem [2]. In light of currently data, the frequency of infertility in Türkiye is not known clearly. However, according to the main report of the Türkiye Demographic and Health Survey (TDHS), only 4% of currently married women in the 45-49 age group have

never had a live birth. It has been stated that the specified rate can be used as an indicator of the primary infertility rate [3].

Infertility contributes to the development of psychological issues in women, such as depression, grief, shock, anger, feelings of inadequacy, anxiety, loss of control, denial, hopelessness, and guilt [4,5].

In addition, infertility may result in issues such as decreased self-esteem, social isolation, and deficiencies in role performance in women [6,7]. Infertility can also result in communication issues between couples, reduced marital satisfaction, loneliness, decreased interest in sexual life, and sexual dysfunctions [8].

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Particularly, the medical treatment process has a significant influence on the quality of life of couples facing infertility [9]. Therefore, the psychological and physical challenges caused by infertility can become even more intense during the treatment process. Therefore, it is very important to be able to manage the treatment process in infertility. Because it has been determined that women who receive infertility treatment for a long time experience significantly higher levels of stigma. Stigmatization, also known as labeling, is the exposure of individuals to discourse and behavior that may humiliate them because they do not conform to the norms of the environment they live in [10]. According to Goffman, stigmatization is an ordinary element of daily social life, which makes interpersonal relationships difficult, and individuals may hesitate to establish relationships with those who do not share the same stigma [11]. Exposure to stigma in society for any reason causes a stressful life experience for the stigmatized individual. Therefore, they may feel unimportant and worthless in society [12]. Although stigmatization occurs for many reasons, infertile women are among those most exposed to this situation. In most cultures, having children is considered among the notable factors that provide privilege and respect for individuals. In Turkish culture, for example, being unable to have children is not considered a health problem; it is rather perceived as a deficiency or flaw [13]. The consequences of stigmatization may vary from individual to individual and culture to culture. Not being able to have children is considered a humiliating situation, and the stress caused by direct or indirect pressure from society adversely affects infertile individuals' lives. Infertility stigma places a heavy psychological burden on women and negatively affects their quality of life [14]. Self-efficacy is conceptualized as the belief that an individual has in himself/herself to perform a certain task or behavior [15]. This belief is not directly observable or measurable, but it is rather the internal confidence that an individual feels when answering the question "What can I do?" [16]. Infertility self-efficacy, on the other hand, is the state in which an individual feels confident and competent in coping with infertility and the treatment process [15]. It is thought that having high self-efficacy while struggling with infertility will positively affect the emotional state and motivation to continue treatment [17]. Therefore, when an individual is faced with an infertility problem, it is critical to evaluate the self-efficacy level [16]. When the literature was examined, no study was found that examined the relationship between self-efficacy and stigma. This study aimed to fill this gap in the field. Nurses working in this field have considerable responsibilities in terms of questioning the risk factors related to infertile women's psychological problems, diagnosing them early, and planning appropriate interventions. It is thought that it is critical to assess the connection between stigma and self-efficacy so that the infertility diagnosis and treatment process can be more positive for women. This study aimed to investigate the association between stigma and self-efficacy in women undergoing infertility treatment. For this purpose, the study focused on the following research questions:

- What is the extent of stigma associated with women undergoing infertility treatment?
- What is the extent of self-efficacy among women undergoing infertility treatment?
- Is there an association between stigma and self-efficacy in women undergoing infertility treatment?

Material and Methods

Study Design and Participants

A descriptive and correlational research design was utilized in this study. The research was conducted at the In Vitro Fertilization (IVF) Clinic and Gynecology Polyclinic of a University hospital situated in eastern Türkiye. The sample comprised 264 women diagnosed with infertility who attended the IVF Clinic and Gynecology Polyclinic between June and November 2022. As a result of the power analysis performed using the original data of the study on the G*Power 3.1 software, the power of the study was found as 0.99, based on a sample of 264, a medium effect size (0.3), and a margin of error of 5%. These participants voluntarily consented to take part in the study and were selected through a non-probability sampling method. Inclusion criteria consisted of a diagnosis of primary infertility, current engagement in infertility treatment, and willingness to participate in the study. Exclusion criteria included being illiterate and having a prior diagnosis of a clinical mental illness. Data collection was performed by the researchers through in-person interviews.

Data Collection

Personal Information Form

The form was prepared in line with the literature. The form featured 10 questions addressing the socio-demographic characteristics of women with primary infertility, which included age, education level, employment status, income, residence, and infertility history (4,15,16).

Infertility Stigma Scale (ISS)

This scale, developed by Fu et al. [18] in 2015, evaluates the stigma perceptions experienced by women undergoing infertility treatment. It was subsequently translated into Turkish, followed by a validity and reliability assessment conducted by Çapık et al. [19]. The ISS consists of 27 items rated on a five-point Likert scale. It comprises four sub-dimensions: self-devaluation, which includes seven items focused on the unique values and beliefs held by women experiencing infertility; social withdrawal, consisting of five items that address the apprehension about forming social interactions; public stigma, which encompasses nine items related to the stigma women with infertility encounter from their social environment; and family stigma, containing six items that reflect the stigma perceived from family members. The total score on the scale ranges from 27 to 135, with higher scores indicating greater levels of stigma felt by women. According to the reliability analysis performed by Çapık et al., the Cronbach's alpha coefficient was

found to be 0.93 [19]. In this study, this coefficient was determined to be 0.95, indicating high reliability as per the literature [20].

The Infertility Self-Efficacy Scale-Short Form (ISES-SF)

This scale was created by Cousineau et al. [17] in 2006 to assess the self-efficacy perceptions of individuals dealing with infertility in terms of their cognitive, emotional, and behavioral capabilities. It utilizes a nine-point Likert scale ranging from 1 (not at all important) to 9 (extremely important) and consists of 16 items. Cousineau et al. also developed a shortened version of the scale containing 10 items in 2006. This brief version was later adapted into Turkish by Arslan et al. in 2013. It employs a four-point Likert scale and includes a total of eight items. Scores on this scale range from 8 to 32, with higher scores indicating a greater perceived level of self-efficacy. In the reliability study conducted by Arslan et al. [21] the Cronbach's alpha coefficient was found to be 0.78. In the present study, the alpha value for women was determined to be 0.84. According to the literature, this reliability coefficient reflects a high level of reliability [20].

Data Analysis

Data analysis was conducted using SPSS software, version 24.0. The descriptive characteristics of women with primary infertility were assessed through the use of frequencies, percentage distributions, means, and standard deviation values. The data of the study showed normal distribution. Pearson Correlation analysis from parametric tests was used to scale the relationship between stigma and self-efficacy variables. To evaluate the relationship between stigma and infertility self-efficacy, Pearson correlation analysis was performed, with a statistical significance level established at $P<0.05$.

Ethical Consideration

Written approvals were obtained on June 9, 2022, from the Non-Interventional Clinical Research Ethics Committee at the Faculty of Medicine of Dicle University (Decision Number: 157). Institutional permission was obtained from the hospital where the research was conducted (August 9 2024; E-68508712-100-333845). The women involved in the study were informed about its objectives, and any questions they had were addressed. They were assured that their data would remain confidential and would not be used for any other purposes. Additionally, it was clarified that they had the right to withdraw from the study at any time. The study ensured the voluntary participation of all women involved. This study was conducted in accordance with the Declaration of Helsinki.

Results

The descriptive characteristics and distributions of the women with infertility included in the study are given in Table 1.

The mean age of the women included in the study was 30.9 ± 5.6 years and 32.2% were university graduates. Of the women with infertility, 72.57% were not employed, 43.9% had less income than their expenses, 79.2% had social security, and 61% lived in a city.

Table 1. Descriptive characteristics of women (n=264)

	Number	%	X±SD
Age			
19-25	44	16.7	30.9±5.6
26-35	159	60.2	
36<	61	23.1	
Educational status			
Literate	21	8.0	
Primary school	37	14.0	
Middle school	55	20.8	
High school	66	25.0	
University and above	85	32.2	
Employment status			
Employed	72	27.3	
Unemployed	192	72.7	
Income status			
Income less than expenses	116	43.9	
Income equal to expenses	109	41.3	
Income higher than expenses	39	14.8	
Health Insurance			
Available	209	79.2	
Not available	55	20.8	
Place of residence			
Village	29	11.0	
District	74	28.0	
City	161	61.0	
X: mean, SD: standard deviation			

Data and distributions about the infertility processes of women with infertility included in the study are given in Table 2.

As seen in the table, 43.9% of the women had been diagnosed with infertility for less than three years and 56.1% had been receiving infertility treatment for less than three years. Also, 38.6% of them had undergone insemination treatment.

Table 2. Findings related to women’s infertility processes (n=264)

	Number	%
Duration of infertility diagnosis (years)		
<3	116	43.9
3-6	89	33.7
6<	59	22.3
Duration of infertility treatment (years)		
<3	148	56.1
3-6	74	28.0
6<	42	15.9
Treatment method		
Intrauterine insemination (IUI)	102	38.6
In vitro fertilization (IVF)	68	25.8
Pharmacological treatment	11	4.2
IUI and IVF	83	31.4

Findings about the infertility self-efficacy and infertility stigma status of the women with infertility included in the study are given in Table 3.

The women’s mean score on the total Infertility Self-Efficacy Scale was 18.9±4.8. Their mean score on the Infertility Stigma Scale was 55.0±24.4 on the total scale, 12.9±7.3 on the loss of self-worth sub-dimension, 12.3±5.6 on the social withdrawal sub-dimension, 18.4±9.2 on the public stigma sub-dimension, and 11.2±6.2 on the familial stigma sub-dimension.

Table 3. Distribution of scores from the infertility self-efficacy scale and the infertility stigma scale among women (n=264)

	X±SD	Possible range of scores	Obtained range of scores
Infertility Self Efficacy Scale total	18.9±4.8	8-32	8-28
Infertility Stigma Scale total	55.0±24.4	27-135	27-135
Self- devaluation	12.9±7.3	7-35	7-35
Social withdrawal	12.3±5.6	5-25	5-25
Public stigma	18.4±9.2	9-45	9-45
Family stigma	11.2±6.2	6-30	6-30

X: mean, SD: standard deviation

Table 4 presents the findings regarding the relationship between infertility stigma and self-efficacy among the women with infertility included in the study. A significant negative, weak relationship was identified between the self-efficacy of women regarding infertility and their experiences of stigmatization (r=0.28, p<0.01) (Table 4). A significant negative, weak relationship was observed between the sub-dimensions of the infertility stigma scale, namely the loss of self-worth, social withdrawal, public stigma, and familial stigma and self-efficacy (respectively, r=0.29, p<0.01; r=0.25, p<0.01; r=0.22, p<0.01; r=0.21, p<0.01).

Table 4. The relationship between infertility self-efficacy and stigma among women (n=264)

Scales	X±SD	Scales				
		ISES	ISS	SDD	SWD	FSD
ISES	18.9±4.8	-	-	-	-	-
ISS	55.0±24.46	-0.28**	-	-	-	-
SDD	12.9±7.3	-0.29**	0.865**	-	-	-
SWD	12.3±5.6	-0.25**	0.794**	0.620**	-	-
PSD	18.4±9.2	-0.22**	0.921**	0.696**	0.661**	-
FSD	11.2±6.2	-0.21**	0.827**	0.626**	0.499**	0.717**

**Pearson correlation: P<0.01 (two-tailed test); X: mean, SD: standard deviation ISES: Infertility Self Efficacy Scale, ISS: Infertility Stigma Scale, SDD: self-devaluation dimension, SWD: social withdrawal dimension, PSD: public stigma dimension, FSD: family stigma dimension

Discussion

The objective of this study was to explore the relationship between stigma and self-efficacy in women receiving infertility treatment. Some studies have shown that many women around the world are stigmatized due to infertility [22-25]. In this study, the mean score for participants on the total ISS was found to be 55.0±24.46, indicating that women with infertility experienced a moderate level of stigma. In the research conducted by Küçükkaya and Kılıç [26] it was determined that women experienced stigma levels close to the average. In addition, as the stigma caused by infertility increased, its psychological impact on women with infertility also increased. Aksu and Şayan [23] claimed that women experienced moderate levels of stigma, and as stigma increased, their infertility-related depression and stress levels increased, as well. Küçük and Koruk [27] found that women experienced high levels of stigma. The study by Küçük and Koruk [27], like this study, was conducted in a province in

eastern Türkiye. In this region, where the fertility rate was the highest, it was emphasized that the higher the level of infertility-related stigma that the women were exposed to was, the more the adversities experienced due to infertility were and the more challenging to cope with them was [27]. According to literature and research findings, the socioeconomic level was lower, and a more traditional structure dominated in the region where the study was conducted, which showed that women in this region experienced stigma in different ways.

The analysis in this study revealed that the public stigma sub-dimension of the ISS had the highest mean score of 18.4±9.2. Public stigma refers to the stigma that is perceived from people in the environment [28]. When the literature was examined in this respect, the results of the studies conducted were found similar to those of this study [26-29]. In contrast to this study, the results of the research conducted by Zhang et al. [30] showed that women with infertility generally had a sense of stigma, as

shown especially by the social withdrawal sub-dimension. It was thought that this difference was due to the different sociocultural characteristics of the places where the studies were conducted. As a result of the public stigma associated with infertility, women tend to hide their infertility from society and may face many emotional problems in this process [29,31,32]. In response to this situation, women use defense mechanisms, such as hiding, gaining acceptance, and escaping to avoid stigma. This situation usually causes women to lose self-confidence and be exposed to social isolation [33]. The results of this study corroborate the existing literature, showing that the societal perspective on infertility largely results in social stigma for women experiencing infertility.

According to the results of this study, the total ISES-SF score was 18.9 ± 4.8 and the women's self-efficacy was at a moderate level. These results were relatively similar to those in the literature. In the study by Durgun Ozan and Duman [34], the mean score on the total ISES-SF was found to be 19.45. According to Jafari et al. [35] the self-efficacy among women experiencing infertility was found to be moderate, and they indicated that higher self-efficacy levels could alleviate stress associated with infertility. In the research conducted by Goral Turkcu et al. [36] the self-efficacy of women experiencing infertility was assessed as moderate, and it was asserted that a decrease in women's self-efficacy perception was associated with an increase in their levels of anxiety and depression. Contrary to the findings of this study, Ersen et al. [37] reported that the mean score of participants on the total ISES-SF was 22.55. In the study by Al Karaeem et al. [38], the self-efficacy levels of women with infertility were evaluated as low. It was thought that the difference between the studies stemmed from the sample groups.

The findings of this study indicated a significant negative correlation between self-efficacy and the infertility stigma scale, as well as its sub-dimensions, including loss of self-worth, social withdrawal, public stigma, and familial stigma. As the level of stigmatization experienced by the women participating in the study increased, their self-efficacy correspondingly decreased. In the study conducted by Aslan and Aluş Tokat [39], in which the western and eastern provinces of Türkiye were compared, the connection between self-efficacy and stigma in both provinces was similar to the result of this study, and the level of stigma experienced in the province representing the eastern part of the study was found to be higher and the level of self-efficacy lower. Conducted in the eastern region of Türkiye, this study further demonstrated the significant role that cultural factors play in influencing the stigma and self-efficacy levels experienced by women with infertility.

A study comparing the quality of life, self-efficacy, and resilience between women with infertility and those who are fertile found that women with infertility reported significantly lower levels in these areas compared to their fertile counterparts [16]. Another study examined the impact of infertility type on women's self-efficacy and coping strategies, revealing that women experiencing secondary infertility exhibited higher levels of self-efficacy compared to those with primary infertility. Moreover,

it was reported that women with infertility who exhibited high self-efficacy employed more adaptive coping strategies than those with low self-efficacy [40]. The results of this study indicated that women with infertility were psychologically more affected by their condition than their fertile counterparts, with a comparable impact observed between those with primary and secondary infertility; however, women with secondary infertility experienced a greater effect. Furthermore, those who reported a higher level of psychological impact demonstrated lower levels of self-efficacy. The sample in this study included women with primary infertility, highlighting the necessity to enhance self-efficacy levels in women experiencing infertility.

Limitation

A limitation of this study is its exclusive focus on women diagnosed with primary infertility who are undergoing treatment. Consequently, the findings are only applicable to this specific population at the university hospital where the research was conducted.

Implications for Practice

It is recommended that the self-efficacy and stigma levels of women receiving treatment in IVF clinics be evaluated. Furthermore, nursing interventions should be implemented to enhance their self-efficacy and mitigate the adverse effects of stigmatization during the infertility diagnosis and treatment process.

Conclusion

As stigma increased, women's infertility self-efficacy levels decreased. Assessing the levels of stigma and self-efficacy among women seeking infertility treatment at hospitals is essential for facilitating a positive treatment experience. It is recommended that women's coping mechanisms should be determined, and counseling and guidance services should be provided throughout the diagnosis and treatment processes.

Conflict of Interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

The authors declare that they have received no financial support for the study.

Ethical Approval

Approval for this research was granted by the Non-Interventional Clinical Research Ethics Committee of Dicle University (Decision Number: 157).

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