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Research Article

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Factor Influencing Psychological Aspect among Women Undergoing in Vitro Fertilization or Intra Cytoplasmic Sperm Injection Cycles

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Abstract

Background: *Physical and psychological stresses that suppress the immune system and damage the endocrine system can have an impact on in vitro fertilization. Any civilization thinks that taking care of one's physical and mental health now will assure the community's health in the future. Infertility is one of the issues that some people face with their mental health. The study aims to identify the psychological aspects that influence the results of women undergoing IVF. The current study used a descriptive (cross-sectional) quantitative approach to achieve the stated objectives. During the period of October 18, 2023 to April 9, 2024 at Al-Najaf City. The study was done on women who underwent vitro fertilization or intracytoplasmic sperm injection cycles at the Fertility Center is located in Al-Sadder Medical City in Al-Najaf. The study sample of (100) women was recruited using a non-probability selection approach (convenience sampling) from the Fertility Center at Al-Sadder Medical. The participants filled out the demographic characteristics questionnaire and the General Health Questionnaire-28 to measure psychological variables influencing IVF results for women. The findings of the present study indicate to the General Health Questionnaire-28 indicated that 38.4% of people had moderate anxiety. There was a significant relationship between psychological traits, age (P=0.001), and type of infertility (P=0.046).*

The study concluded that psychological stresses like as depression and anxiety are critical to the effectiveness of IVF results. The study recommends that educating women about the effects of physical and psychological aspects that might affect treatment from the outset is a good way for nurses and doctors to have an active role in infertility care, but more research is still needed.

Keywords: Psychological aspect, In Vitro fertilization, Intra cytoplasmic Sperm injection cycles

1. Introduction

Infertility is defined as the failure to conceive after a full year of regular, unprotected intercourse; experts estimate that it affects up to 15% of reproductive-aged couples globally and is recognized as a medical problem (WHO, 2015). According to the World Health Organization, one in every four couples in poor countries struggles with infertility [1].

According to the Centers for Disease Control and Prevention, 6% of married women aged 15 to 44 in the United States are infertile, and around 12% of women aged 15 to 44, regardless of marital status, have struggled to conceive or carry a pregnancy to full term. Furthermore, in 2013, 7.4 million women in the US were estimated to have used some type of infertility services [2]. Assisted Reproductive Technology (ART) refers to all reproductive procedures in which eggs and embryos are treated outside of the body. In general, ART methods entail extracting mature eggs from a woman's ovaries using a needle, mixing the eggs with sperm in a laboratory, and returning the embryos to her body. The primary type of ART is in vitro fertilization [3].

In-vitro fertilization (IVF) is an assisted reproductive technology (ART) in which sperm fertilizes the ovum outside of the body. The zygote is grown in growth medium for around 5 days, and the developing embryo or blastocyst is transplanted back into the mother [4]. The phrase in-vitro is derived from the Latin

word meaning "in glass," because early biological experiments involving the cultivation of tissues outside of the live species from which they came were conducted in glass containers such as beakers, test tubes, or Petri dishes. Today, the term in vitro refers to any biological procedure performed outside of the creature in which it would typically occur, as opposed to an in vivo approach, in which the tissue remains within the live organism in which it is normally found [5].

The process of in vitro fertilization (IVF) is emotionally and psychologically taxing. There are several different types of stress before, during, and/or after IVF therapy. One recurrent source of stress is the dread of irreparable infertility and pessimism. Another source of stress is the therapy itself, which requires daily injections, blood draws, ultrasounds, oocyte retrievals, and the possibility of failure at any stage of the procedure. The possibility of a spontaneous abortion is the third cause of stress. The most difficult parts of the IVF cycle turned out to be the oocyte harvesting and pregnancy test phases [6]. According to a study of 291 women undergoing IVF/ICSI, elevated levels of worry regarding infertility were associated. She observed that high levels of anxiety in the instance were greater than the depression measures examined, and concluded that the results were more prominent during the transplant stage [7].

Infertile women reported higher rates of depression and anxiety on self-report measures. About 37% of women with infertility exhibited depressive symptoms on the Beck Depression Inventory (BDI), which was twice as prevalent as in the control group. According to the Public Health Questionnaire, depressive symptoms were present in 33% and 43% of females before and after IVF, respectively. Furthermore, signs of anxiety among women with infertility were observed in 26% of women in the pre-IVF and 22% of women six months later utilizing STAI [8].
In a recent study, cortisol levels over the preceding three to six months were assessed using hair samples from 135 women undergoing IVF. Pregnancy rates and hair cortisol levels were substantially correlated (P=0.017). These findings align with the majority of infertile women. The impact of psychological problems on fertility is detrimental [9]. Infertility treatments utilizing assisted reproduction methods are becoming more common. As a result, it is critical to understand all of the factors that influence IVF success rates and pregnancy rates. Special psychological elements, time and money involved in therapy sessions. One key area of study missing data is how lifestyle variables, such as smoking, coffee use, and excellent diet, especially fruits and vegetables, impact IVF outcomes [10].

2. Materials and Methods

2.1 Design of the Study: To achieve the aforementioned objectives, the current study used a descriptive (cross-sectional) quantitative approach. During the period of 18 October 2023 to 9 April 2024 at Al-Najaf City.

2.2 Study Setting: The study was done on women who underwent vitro fertilization or intracytoplasmic sperm injection cycles at the Fertility Center at Al-Sadder Medical City in Al-Najaf City.

2.2.1 Study Sample: A non-probability (convenience sampling) of (100) women, the study sample has been selected from Fertility Center at Al-Sadder Medical.

2.2.2 The Study Instrument: To determine the factors impacting the psychological aspects of intracytoplasmic sperm injection cycles or in vitro fertilization, an assessment tool was adopted and developed by the researchers.

Part I: Socio-Demographic Characteristics: A socio-demographic characteristics sheet consists of four items, which included woman's age, educational level, occupational status, residency area.

Part II: Reproductive Characteristics: The second part of the questionnaire comprises three items, the type of infertility, duration of infertility, causes of infertility.

Part III: The General Health Questionnaire-28: To assess the efficiency of the psychosocial intervention on well-being, the GHQ-28 was selected as the primary outcome based on the findings of a comparable trial and because it was deemed an appropriate measure to capture emotional stress.(Goldberg & Williams, 1991). The GHQ-28 asks participants to rate their overall health over the last several weeks using behavioral questions that have a 4-point rating system for experiencing the following frequencies of experience: "not at all," "no more than usual," "rather more than usual," and "much more than usual." The original score system and the one used in this investigation both used the same methodology, the Likert scale 0, 1, 2, 3 (Likert, 1932). For the 28 version, 0 is the lowest possible score and 84 is the highest.

2.3 Data Collection: The researcher collected data using the designed questionnaire and organized interviews. The researcher employed a semi-structured interview approach with women, as they were questioned individually in each center, and each subject of study sample was interviewed in the same manner, using a comparable questionnaire and Arabic versions of questions. The data gathering period lasted from January 21, 2024 to February 25, 2024. The interview with each person should last no more than 10 to 15 minutes.

3. Results and Findings

Socio-Demographic Data		Frequency	Percent
Age	<= 15	1	1.0
	16-20	7	7.0
	21-25	33	33.0
	26-30	26	26.0
	31-35	19	19.0
	36-40	11	11.0
	41+	3	3.0
Total		100	100.0
Level of Education	Unable to read and write	9	9.0
	Able to read and write	20	20.0
	Primary School	26	26.0
	Secondary School	17	17.0
	Preparatory school	9	9.0
	Institute	4	4.0
	College	15	15.0
Total		100	100.0
Occupation	House wife	80	80.0
	Employee	20	20.0
Total		100	100.0
Residence	Rural	22	22.0
	Urban	78	78.0
Total		100	100.0

Table 1: Socio-Demographic Characteristic of the Studied Women

This table shows that the majority of the studied women subgroups are: those with ages ranging between (21-25) years (33%); concerning education, (26%) graduated from primary school and 80% were housewives. Regarding residence areas, about (78%) of Urban areas.

Clinical Data		Frequency	Percent
Type of infertility	Primary	67	67.0
	Secondary	33	33.0
Total		100	100.0
Causes of infertility	Related to the wife	28	28.0
	Related to the husband	30	30.0
	Unexplained	26	26.0
	Related to the wife and husband	16	16.0
Total		100	100.0

Table 2: Descriptive Statistics of Women according to the Reproductive Data.

Table 2: shows the distribution of infertile women regarding to the reproductive data. The results of the study showed that the majority of women suffer from primary infertility (67.0%). In addition, the result shows that the high percentage of infertility causes are related to the husband, with a percentage of (30.0%) from study sample.

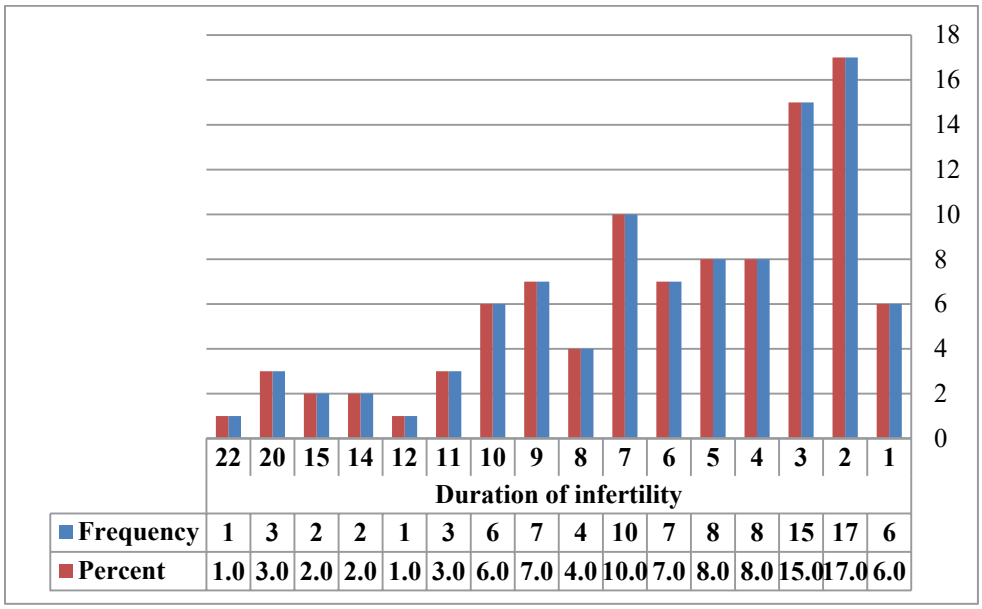

Figure 1: Shows the duration of infertility by years

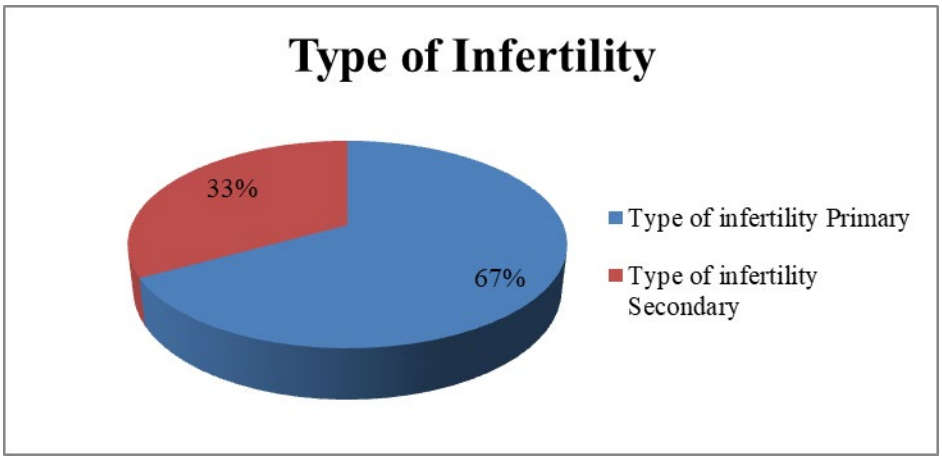

Figure 2: Shows the type of infertility among studied women

Questions No.=20	M.s.	Assessment
Total Score	2.34	More than usual

Table 3: Overall assessment of Women Psychological Aspect

Table (3) shows that the overall assessment of women psychological aspect, the results shows that overall assessment for psychological status is more than usual.

	Sum of Squares	df	Mean Square	F	Sig.
Age	1.098	4	0.275	3.582	0.031 (S)
Level of Education	0.623	5	0.125	1.073	0.416 (NS)
Occupation	0.004	1	0.004	0.031	0.861 (NS)
Residence	0.002	1	0.002	0.014	0.908 (NS)

Table 4: Relationship between Women Psychological aspects and their Socio-demographic data

Table (4) shows a significant association between women's psychological aspects and age (p-value > 0.05), but no significant relationship with the remaining socio-demographic variables.

	Sum of Squares	df	Mean Square	F	Sig.
Type of infertility	0.453	1	0.453	2.839	0.046 (S)
Duration of infertility	1.458	15	0.097	0.558	0.898 (NS)
Causes of infertility	0.222	4	0.056	0.333	0.855 (NS)

Table 5: Relationship between Women Psychological aspects and their reproductive data

Table (5) indicates that, with the remaining reproductive data, there is a non-significant association, but there is a significant relationship between the psychological component of women and the kind of infertility at (p-value > 0.05).

4. Discussion

Discussion of the Women Socio-Demographic Characteristics: Throughout the course of the data analysis of the current research, the majority of women undergoing vitro fertilization or intra cytoplasmic sperm injection cycles (33%) are within (21-25) years old Table (1). This result agrees with ¶Abdullah and Al-Ogaili (2016) who have reported that the majority of the women (80%) were more than (21) years old.

In relation to the women' levels of education, the findings show that the majority of the caregivers (26%) is a graduate of primary school Table (1). This result agrees with Mohamed et al. (2018) who revealed that (37%) of the infertile women are at primary school graduates. Regarding women' occupation status, this study indicates that the majority of the participants (80%) are housewives Table (1). This result comes along with the results of the study conducted by¶Abdullah and Al-Ogaili (2016), who have found that (92%) of infertile women are housewives. Also, this result agrees with Mohamed et al. (2018), who have found that almost all infertile women (84%) are housewives.

Concerning residency area, the majority of the sample (78%) live in urban residential areas and the minority of them (22%) live in rural area Table (1). This result comes along with¶ Abdullah and Al-Ogaili (2016) whose findings have indicated that the majority of the infertility women are living in an urban area (72%) and the remaining are living in the countryside (28%)

4.1 Discussion of the Women Reproductive Characteristics

Regarding the type of infertility, the current work indicates that the majority of the participants (67%) having primary infertility and the minority of them (33%) having secondary infertility Table (2). This result is harmonizing and supported by¶Abdullah and Al-Ogaili (2016) who are found that (60%) of infertile women, and (40%) of them having secondary infertility. Further, this finding complies with Mohamed et al. (2018) who have concluded that (93%) of infertile women have primary infertility.

Table (2) Manifests that the majority of the cause of infertility (30%) is related to husband and the minority of the cause of infertility (16%) is related to wife and husband. This result comes along with Mohamed et al. (2018) who are found that the cause of (37%) of infertility is related to husband, and that the cause of (17%) of them is related to wife and husband.

Discussion of the Psychological Aspect among Women Undergoing Vitro Fertilization or Intra Cytoplasmic Sperm Injection Cycles: Table (3) shows that the overall assessment of women psychological aspect, the results shows that overall assessment for psychological status is more than usual. The researcher argues that women Undergoing Vitro Fertilization or Intra Cytoplasmic Sperm Injection Cycles appear to be at depression, anxiety, stress. The analysis of data regarding the distribution of means women to the three emotional burden (anxiety, stress, and depression).

From our point of view, infertility women are highly burdened and more likely to report poor or fair mental health than fertile women. These findings are consistent with¶ Eugster and Vingerhoets (1999) who have found that the different stages of the in-vitro fertilization (IVF) -procedure can influence the psychosocial functioning of the woman negatively.

Further, this result comes along with Karlidere et al. (2008) whose found there were significant differences regarding the severity of depressive symptoms and levels of stress and trait anxiety between the women who became pregnant and those who did not. Further, the non-pregnant women had significantly more severe depressive symptoms than the pregnant group.

Moreover, Karlidere et al. (2008) reported that the infertile women group had significantly higher trait-anxiety levels than the pregnant group.

Discussion of the Associations between Psychological Aspects of Women and their Socio- Demographic Characteristics: Table (5) indicates a non-significant link with the remaining socio-demographic variables, but a significant relationship between the psychological characteristics of women and age at (p-value > 0.05). This result is in union with Bashtian et al. (2018) who suggested that there is a strong correlation between the psychological characteristics of women and their age. These results could indicate that women get more dejected about having children as they get older, which raises their anxiety levels.

Further, this result comes along with Bashtian et al. (2018) They discovered that the psychological characteristics of women and their degree of education, employment, and place of residence did

not significantly correlate.

In contrast to Abedinia et al.'s findings, this study revealed no statistically significant relationship between women's employment and anxiety levels.These findings are similar with Ramazanzadeh's study. The results of Abedinia's research showed that housewives worried more than working people. This study demonstrated no significant relationship between educational level and psychological characteristics, which is similar with the findings of Abedinia and Beutel.

Discussion of the Associations between Psychological Aspects of Women and their Reproductive Characteristics: Table (6) reveals that there is a significant relationship between women psychological aspect and type of infertility at (p-value>0.05), while there is a non- significant relationship with remaining reproductive data. This finding is in consent with what Bashtian et al. (2018) have reported: that there is a significant relationship between women psychological aspect and type of infertility.

Additionally, the finding of the present study is in accord with Bashtian et al. (2018) who indicated that there was a non- significant relationship between women psychological aspect and cause of infertility, duration of infertility. The results showed that there is no significant relationship between infertility duration and anxiety level. This result contradicts Ramezanzadeh et al. According to Ramadanzadeh's study, the amount of worry increases with the number of years of infertility. In her study, she discovered that anxiety levels were lower during the first three years of infertility, but increased between the fourth and sixth years. The Hashemieh study also found that the maximum level of anxiety occurs after 10 to 12 years of infertility. These findings may indicate that as the number of years of infertility grows, couples feel dissatisfied with having a child, leading to increasing levels of anxiety.

With Ramadanzadeh's study in which infertile women showed higher rates of psychological symptoms compared to their partners, especially in females and unexplained factors. Women are necessarily more deeply involved in the treatment procedures and are naturally more affected. One of the characteristics of infertile couples is that women are usually more affected by infertility than men.

5. Conclusion

Low success rates among women having IVF are significantly predicted by psychological problems such as depression and anxiety. There is no proof that the null hypothesis has been accepted. Nursing counseling plays a significant role, particularly in IVF clinics, where it aims to lessen anxiety and sadness in women and encourages them to continue IVF treatment even after a failed attempt and go on to another trial. If not, the alternative theory is acknowledged.

Recommendations

1. The Ministry of Health should use the study's findings to promote the psychological health of infertile women through various means, including public media.
2. The Ministry of Health should develop programs to raise awareness among women about psychological issues that contribute to infertility and how to avoid them.
3. Encoursge the faculty staff and post graduate students to benefit from the results of the present study.
4. Another studies should be conducted about how to improve the the psychological health status among infertility women.
5. Further research, particularly with regard to young girls, is necessary to raise women's understanding of the psychological aspects that influence infertility.
6. More research is needed to determine the national incidence of psychological variables that contribute to infertility in Iraqi women.

References

1. World Health Organization. (2015). Infertility definitions and terminology.
2. Centers for Disease Control and Prevention, American Society for Reproductive Medicine, Society for Assisted ReproductiveTechnology. 2009 Assisted reproductive technology success rates: national summary and fertility clinic reports. Atlanta, GA: US
3. Centers for Disease Control and Prevention. (2015). Infertility.
4. Broekmans, F. J., Kwee, J., Hendriks, D, J., Mol B,W., Lambalk, C,B. (2006). A systematic review of tests predicting ovarian reserve and IVF outcome. Hum Reprod Update, 12(6), 685–718.
5. Badger-emeka, L. (2016) In-vitro Fertilisation In-vitro Fertilisation. In book: Fundamentals, Industrial and Medical Biotechnology. (pp.180 - 195).
6. An, Y., Sun, Z. and Li, L. (2013). Relationship between psychological stress and reproductive outcome in women undergoing in vitro fertilization treatment. J Assist Reprod Genet, 30(1), 35-41.
7. Smeenk, J.M.J. Verhaak, C.M. A. Eugster, A. van Minnen, G. A. Z. (2001). The effect of anxiety and depression on the outcome of invitro fertilization. Hum Reprod, 16(7), 1420-1423.
8. Volgsten, H. (2009). Mood disorders personality and grief in women and man undergoing in vitro fertilization treatment. p. 17.
9. Ilacqua, A. (2018). Lifestyle and fertility: The influence of stress and quality of life on male fertility‘, Reproductive Biology and Endocrinology. Reprod Biol Endocrinol, 16(1), 115.
10. Firns, S., Cruzat, V. F., Keane1, K. N., Karen, A., Joesbury, Andy H. Lee2, Philip Newsholme1 and John L. Yovich1,3 et al. (2015). Theeffect of cigarette smoking , alcohol consumption and fruit and vegetable consumption on IVF outcomes : a review and presentation of original data‘, Reproductive Biology and Endocrinology. Reproductive Biology and Endocrinology, 13, 134.
11. Bashtian, M. H., Khadivzadeh, T., Aval, S. B., Esmaily, H., & Amirian, M. (2018). Factors Influencing Anxiety in Infertile Women Undergoing IVF/ICSI Treatment. J Midwifery Reprod

Health, 6(2), 1282-1288.
12. Mohamed, H. M., Ibrahim, W. H., Abdelhafez, A. A., El-Fatah, A., Ola, A., & Abdel-salam, T. A. (2018). Physical and Psychological Factors and the Reproductive Outcomes of Women Undergoing In-Vitro Fertilization Treatment. Assiut Scientific Nursing J, 6(14), 49-62.
13. Abdullah, A. M., & Al-Ogaili, S. S. C. (2016). Risk factors of infertility among young women at AL-Najaf city. Int J Scientific and Research Publications, 6(12), 21-30.
14. Eugster, A., & Vingerhoets, A. J. (1999). Psychological aspects of in vitro fertilization: a review. Social Science & Medicine (1982), 48(5), 575–589.
15. Karlidere, T., Bozkurt, A., Ozmenler, K. N., Ozsahin, A., Kucuk, T., & Yetkin, S. (2008). The influence of emotional distress on the outcome of in-vitro fertilization (IVF) and/or intracytoplasmic sperm injection (ICSI) treatment among infertile Turkish women. Isr J Psychiatry Relat Sci, 45(1), 55–64.