Research Paper

Comparing Happiness Between Infertile Women and Wives of Infertile Men

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ABSTRACT

Background: Infertility and its treatment, as one of the most difficult experiences in life, affects the mental health and happiness of couples, especially women. This study compared the happiness of infertile women and the wives of infertile men.

Methods: This research was a comparative cross-sectional study. The study sample included 142 women (71 infertile women and 71 wives of infertile men) referring to the infertility clinic of Akbarabadi Hospital in Tehran, Iran, selected by consecutive sampling from February to August 2020. Demographic information and the Oxford happiness inventory (OHI) were used to collect the data. The data analysis was performed in SPSS software, version 16 using the Fisher exact-test, Chi-square, Kruskal-Wallis, and independent t-test. A $P<0.05$ was considered significant.

Results: The study showed that infertile women are happier than the wives of infertile men ($P=0.006$). Also, the subscales of life satisfaction ($P=0.016$), efficacy ($P=0.025$), cheerfulness ($P=0.001$), and self-esteem ($P=0.017$) were higher in infertile women than in the other group. However, there was no significant difference between the two groups in the subscales of sociability and wellbeing.

Conclusion: According to the findings, spouses of infertile men may experience lower happiness levels than infertile women. In addition to paying more attention to the psychological condition of infertile men's wives, more detailed studies with a larger sample size are needed to confirm the results. Also, qualitative studies are recommended to clarify all dimensions of happiness of infertile couples.

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Highlights

- Infertility may cause depression and anxiety by affecting women's social, psychological, and physical aspects.
- The happiness of infertile women was significantly higher than that of infertile men's wives.
- Life satisfaction, efficacy, cheerfulness, and self-esteem dimensions of happiness were higher in infertile women than in infertile men's wives.
- There was no significant difference between the groups' sociability and wellbeing dimensions of happiness.

Plain Language Summary

Infertility is a psychological distress for most couples. Regardless of the cause of infertility, happiness can be negatively affected. This study compared the level of happiness of infertile women and the wives of infertile men. The study results showed that infertile women are happier than the wives of infertile men. In addition, most dimensions of happiness, including life satisfaction, efficiency, cheerfulness, and self-esteem, were higher in infertile women than infertile men's wives.

1. Introduction

Reproduction is one of the significant goals of human life, and childlessness influences the life and marriage stability of infertile couples worldwide (Sarac & Koc, 2018). Infertility, defined as the inability to conceive after one year of unprotected sex, not only leads to severe psychological distress but also causes a marital crisis that can threaten individual, family, and social life (Peloquin et al., 2018; Karaca et al., 2018; Yao et al., 2017). Global infertility rates continue to rise; about 12% of couples worldwide have difficulty conceiving (Rooney & Domar, 2018). In Iran, the prevalence of infertility is estimated between 10.3% and 24.9%, and its treatment drop-out is about 28.3% (Morshed-Behbahani et al., 2020), resulting in higher prevalence of infertility in Iran than the world average (Direkvand Moghadam et al., 2015). Infertility is an emotionally disturbing experience for Iranian couples, like couples in other countries (Abavisani, 2019). It affects the social, psychological, and physical dimensions of life. It may cause stigma, shame, and guilt, eventually leading to psychological problems such as depression and anxiety (Tavousi et al., 2022). These experiences are especially distressing for women than men (Amini et al., 2020; Rashid Almasi et al., 2019). In most societies, women are stigmatized regardless of the cause of infertility (Turner et al., 2020). Also, infertility treatments, irrespective of their cause, even in male or unexplained infertility, cause anxiety and depression, and mental problems in couples, especially women (Amini et al., 2018). Infertility and its treatments are strongly associated with decreased life satisfaction, good feelings, self-control, quality of life (Wendołowska et al., 2022), and eventually, couples' happiness.

Happiness is a complex of nice or positive affecting feelings and less negative feelings. Indeed, Happiness is a kind of evaluation of life and self, including life satisfaction, positive affections, self-worth, and lacking anxiety and depression (Etemaad Jowkar & Rahpeima, 2015). It affects mental health (Gharibi et al., 2016) and negatively relates to stress, anxiety, and depression (Shahverdi et al., 2015; Hashemi et al., 2015). Considering the high-stress level and depression in infertile individuals, the importance of happiness becomes clearer. Happiness and other positive affections protect people against stress. Nowadays, it is strongly recommended to focus on happiness instead of dealing with anxiety and depression (Rashid Almasi et al., 2019). Happiness is influenced by factors such as personality, religious beliefs, social status, and especially genetics (Gharibi et al., 2016). Also, cultural and social issues (Sheikholeslami et al., 2011) and the level of education and income are influential factors that affect happiness and life satisfaction (Seyedi et al., 2013; Vanassche Swicegood & Matthjs, 2012). Worries caused by infertility and treatment failures are other important factors that can negatively affect people's happiness (Seyedi et al., 2013). Therefore, paying attention to the psychological needs of infertile couples is an important factor in dealing with infertility stress and even success in infertility treatment (Xia et al., 2017). In recent decades, due to the high preva-

lence of infertility and its psychological consequences in couples, especially in women, less attention has been paid to psychological problems of infertile men's wives and there is little evidence in this regard. This study was conducted to compare the level of happiness of infertile women and the spouses of infertile men who referred to the Infertility Clinic of Akbarabadi Hospital in Tehran City, Iran, in 2020.

3. Materials and Methods

Design, setting, and sample

This research was a comparative cross-sectional study. The research sample was infertile women (n=71) and spouses of infertile men (n=71) referring to the Infertility Clinic of Akbarabadi Hospital in Tehran, Iran, in 2020. They were selected by consecutive sampling. The inclusion criteria were as follows: Iranian nationality, reading and writing literacy, infertility with a known cause that was diagnosed at least one year ago, women of childbearing age, no history of chronic physical or mental illnesses requiring treatment, the first marriage in both couples, non-use of cigarettes, alcohol, and drugs. The sample size was calculated based on Equation 1:

$$1.\ \frac{(z_{1\alpha/2}+z_{1-\beta})^2\times(s_1^2+s_2^2)}{d^2})$$

where confidence level=95%, the power=80%, S_1=11.4, and S_2=13.4.

Study instruments

The data were collected using a personal characteristics form and the Oxford happiness inventory (OHI). OHI with 29 items was first developed by reversing the 21 items of the Beck depression inventory (Beck et al., 1961), and then 11 new items were added to cover subjective wellbeing aspects. Subsequently, 3 items were removed, and the OHI was finalized with a 29-item scale (Hills & Argyle, 2002). Each question is scored on a 4-point Likert scale (from 0=unhappiness to 3=extreme happiness). The total score ranges from 0 to 87 (Shahverdi et al., 2016). Later, Najafi et al. (2013) developed 6 subscales for the Persian version of the scale according to the questions and using factor analysis. These subscales are life satisfaction (2, 7, 9, 10, 12), efficiency (8, 18, 20, 21, 25, 26), cheerfulness (5, 6, 19, 24, 27, 28, 29), self-esteem (11, 15, 17, 22), sociability (1, 13, 14, 23), and wellbeing (3, 4, 16). Therefore, the range of scores for each subscale will be 0-15 for satisfaction, 0-18 for efficacy, 0-21 for cheerfulness, 0-12 for sociability, and 0-9 for wellbeing (Najafi et al., 2013). The validity and reliability of the Persian version of OHI have been confirmed in several studies, and its Cronbach α coefficient has been reported between 0.84 and 0.91 (Alipour & Agah, 2007; Mirzaee et al., 2021). In the present study, the Cronbach α coefficient was calculated as 0.95.

Data analysis

The data were analyzed using SPSS software, version 16 by the independent t-test to compare quantitative data with a normal distribution (confirmed by the Kolmogorov-Smirnov) and Chi-squared and Fisher exact-test to compare qualitative variables between two groups. The Kruskal-Wallis test was also used to compare ordinary variables. The significance level was set at P<0.05.

4. Results

As Table 1 presents, the two groups were not significantly different in terms of demographic variables except for the average age of the wives of infertile men (P=0.011).

Table 2 compares happiness and its subscales between the groups. This Table shows that the mean score of happiness (P=0.006) and its subscales, including life satisfaction (P=0.016), efficacy (P=0.025), cheerfulness (P=0.001), and self-esteem (P=0.017) in infertile women are significantly higher than that of wives of infertile men. However, the groups did not show significant differences in sociability and wellbeing subscales.

According to Table 3, none of the individual characteristics had a significant relationship with the total score of happiness in infertile women. However, there was a significant relationship between the total happiness score, infertility duration (P=0.016), and economic status (P=0.048) in the wives of infertile men. So the happiness of infertile men's spouses in the more than 15 years infertility period group was significantly lower than the group of fewer than 5 years (P=0.036) or 5-10 years (P=0.013) infertility period. Likewise, the happiness of infertile men's wives with unfavorable economic status was significantly lower than those with desirable economic status (P=0.036) and fairly desirable economic status (P=0.028).

Table 1. Evaluating and comparing personal and background characteristics of infertile women and wives of infertile men (n=142)

Characteristics		No. (%)		Test Results
		The Wives of Infertile Men	Infertile Women	
Age (y)	<30	19(26.8)	27(38)	t=2.57
	30–39	44(62)	40(56.4)	df=139
	≥40	8(11.2)	4(5.6)	P=0.011
	Mean±SD	33.44±5.57	31.17±4.91	
	Min–max	20 –46	20– 45	
Education	Elementary or Secondary school	10(14.1)	7(9.9)	χ^2=2.37
	High school	26(36.6)	31(43.7)	df=3
	College or bachelor's degree	27(38)	29(40.8)	P=0.499
	Master or higher	8(11.3)	4(5.6)	
Occupation	Housewife	48(67.6)	56(78.9)	P=0.498*
	Employed	23(32.4)	15(21.1)	
Economic status	Undesirable	12(16.9)	14(19.7)	χ^2=3.568
	Fairly desirable	53(74.6)	44(62)	df=2
	Desirable	6(8.5)	13(18.5)	P=0.168
Infertility type	Primary	54(76.1)	49(69)	χ^2=0.884
	Secondary	17(23.9)	22(31)	df=1
		P=0.347		
Infertility duration (y)	<5	35(49.3)	41(57.7)	t=1.369
	5-10	20(28.2)	21(29.6)	df=139
	10–15	11(15.5)	6(8.5)	P=0.173
	>15	5(7)	3(4.2)	
	Mean±SD	6.2±4.77	5.21±3.76	
	Min–max	1–23	1–17	
Infertility treatment history (y)	None	18(25.3)	17(23.9)	
	<5	33(46.5)	40(56.4)	t=1.782
	5-10	10(14.1)	11(15.5)	df=105
	>10	10(14.1)	3(4.2)	P=0.078
	Mean±SD	5.02±4.36	3.71±3.17	
	Min–max	3 months–19 years	2 months–17 years	

*The Fisher exact-test.

Client- Centered Nursing Care

Table 2. Comparing happiness in infertile women and wives of infertile men (n=142, df=140)

OHI and its Subscales	Mean±SD		Independent t-test Result	
	The Wives of Infertile Men	Infertile Women	t	P
Life satisfaction (0-15)	7.01±2.5	7.98±2.25	t=2.428	0.016
Efficacy (0–18)	8.09±3.1	9.33±3.38	t=2.273	0.025
Cheerfulness (0–21)	8.66±2.77	10.42±3.62	t=3.251	0.001
Self-esteem (0–12)	5.38±2.1	6.35±2.66	t=2.415	0.017
Sociability (0–12)	5.43±1.84	6.07±2.31	t=1. 8	0.074
Wellbeing (0–9)	3.92±1.65	4.32±1.82	t=1.35	0.179
Happiness (0–87)	38.52±11.54	44.49±13.66	t=2.813	0.006

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4. Discussion

The results of the present study showed that the average scores of happiness and most of its subscales in infertile women, including life satisfaction, efficacy, cheerfulness, and self-esteem, were significantly higher than the wives of infertile men. Still, the two groups did not show significant differences in sociability and well-being subscales.

Today, infertility is considered not only a physical illness but also a biopsychosocial health and spiritual problem (Ahmadi Forooshany et al., 2014). Although there are many psychological studies in the field of infertility, the happiness of infertile individuals, especially their partners, has been neglected. In contrast, happiness is an essential concept of life. Happiness is introduced with positive affect or joy, satisfaction, and absence of negative feelings (Stewart et al., 2010) and is strongly related to social, interpersonal, and marital satisfaction. Since infertility is a crisis for both partners, it can destroy their health and happiness (Ahmadi Forooshany et al., 2014). Although infertility affects the mental health of both infertile men and women, psychological problems appear to be significantly more common in women than men (Alosaimi et al., 2017). Regardless of the cause of infertility (male or female origin), women experience infertility stress anyway. It means infertile men's wives are as noted as infertile women (Amini et al., 2020). This can be caused by the pressure and suffering that infertility and its treatment process causes in couples. When a couple is infertile, they face marital and social problems, regardless of which one is infertile. As a result, women are often stigmatized in societies regardless of the cause of infertility (Turner et al., 2020). Thus, happiness correlated with marital and social health will be damaged (Ahmadi Forooshany et al., 2014). It seems that due to the better prognosis of most causes of female infertility (mostly associated with ovulation problems) compared with the causes of male infertility, the second case has resulted in a longer period of infertility and its treatments. These factors can influence the happiness of infertile male wives. Women are believed to be the patients when male infertility is the disease (Turner et al., 2020). It seems that when male infertility occurs, and a woman can conceive, there may be a feeling that if she marries another person, she can have children and experience motherhood. These feelings can make her feel stuck in a miserable married life. Clearly, happiness can be influenced by these emotions. Although it has been previously discussed that infertility is responsible for psychosocial problems in infertile men and women, as far as we know, the present study is the first to compare happiness between infertile women and the wives of infertile men. Our findings provide preliminary information for healthcare providers and physicians in this field.

Despite the advantages of the study, the results should be interpreted in light of some limitations. One of the limitations of the current study was the insufficiency of studies on the wives of infertile men. Since the sampling period overlapped with the COVID-19 pandemic, infertile attendance at infertility clinics was low, and as a result, the sample size was relatively small. Finally, the cross-sectional study design does not speak about causal effects. Therefore, the generalization of the results should be done with caution.

Table 3. Happiness in two studied groups (infertile women and wives of infertile men) according to individual characteristics (n=142)

Groups / Variables		Happiness Scores of Infertile Men's Wives		Happiness Scores of Infertile Women	
		Mean±SD	Test result	Mean±SD	Test result
Age (y)	<30	40.42±10.66	P=0.355*	45.62±14.58	P=0.494*
	30–39	38.36±11.61		43.3±13.43	
	≥40	34.87±13.67		48.75±10.56	
Education	Elementary or Secondary school	31.6±13.51	P=0.192*	47.57±10.21	P=0.458*
	High school	38.84±10.41		42.12±15.15	
	College or bachelor's degree	39.59±11.88		46.1±13.06	
	Master or higher	42.5±9.69		45.75±12.25	
Occupation	Housewife	38.47±12.03	t=0. 044** df=69 P=0.965	44.39±14.27	t=0.118** d_f =69 P=0.906
	Employed	38.61±10.71		44.86±11.5	
Economic Status	Undesirable	31.41±8.42	P=0.048*	42.92±14.5	P=0.669*
	Fairly desirable	39.47±11.33		43.95±12.77	
	Desirable	44.33±14.26		48±16.08	
Infertility type	Primary	38.14±10.4	t=0.483** df=69 P=0.631	45.89±14.81	t=1.488** df=56.78 P=0.142
	Secondary	39.7±14.91		41.36±10.28	
Infertility duration (y)	<5	41.74±11.56	P=0.016*	44.61±12.37	P=0.647*
	5-10	39.4±10.12		46.28±16.1	
	10–15	31.72±9.44		38.33±13.15	
	>15	27.4±10.41		42.66±17.03	
Duration of Infertility treatment (y)	None	42.44±10.22	P=0.071*	45.23±14.49	P=0.942*
	<5	40.03±11.87		44.1±13.66	
	5-10	32.8±10.53		44.54±14.48	
	>10	32.2±10.32		45.33±17.95	

*The Kruskal-Wallis test.

**The Independent t-test.

5. Conclusion

The results showed that the happiness of the wives of infertile men is lower than infertile women. Future research in which these results are examined longitudinally with a larger sample size is warranted. Also, conducting qualitative studies is recommended to clarify all the challenges of happiness of infertile couples.

Ethical Considerations

Compliance with ethical guidelines

This study was approved by the Research Ethics Committee of the Iran University of Medical Sciences (Code: IR.IUMS.FMD.REC1398.1015). Informed consent was obtained from all participants

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Authors' contributions

Conceptualization and methodology: Leila Amini, Farinush Irani and Robabeh Mohammad Beigi; Data collection, and compiling the initial draft and final approval: Leila Amini and Farinush Irani; Statistical analysis: Hamid Haghani.

Conflict of interest

The authors declared no conflict of interest.

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References

Abavisani, M. & Manavipoor, D., 2019. [Effect of mindfulness training to promote hope and happiness in infertile women (Persian)]. *Journal of Analitical-Cognitive Psycholoy,* 10(36), pp. 9-22. [Link]

Ahmadi Forooshany, S. H., et al., 2014. Infertile individuals' marital relationship status, happiness, and mental health: A causal model. *International Journal of Fertility & Sterility,* 8(3), pp. 315–24. [PMID]

Alipour, A. & Agah , M., 2007. [Reliability and validity of the Oxford happiness inventory among Iranian (Persian)]. *Jornal of Iranian Psychologists,* 3(12), pp. 287-98. [Link]

Alosaimi, F. D., et al., 2017. Gender differences in perception of psychosocial distress and coping mechanisms among infertile men and women in Saudi Arabia. *Human Fertility,* 20(1), pp. 55-63. [DOI:10.1080/14647273.2016.1245448] [PMID]

Amini, L., Ghorbani, B. & Afshar, B., 2020. [The comparison of infertility stress and perceived social support in infertile women and spouses of infertile men (Persian)]. *Iran Journal of Nursing,* 32(122), pp. 74-85. [DOI:10.29252/ijn.32.122.80]

Amini, L., et al., 2018. [The relationship between percieved social support and infertility stress in wives of infertile men (Persian)]. Iran Journal of Nursing, 31(111), pp. 31-9. [DOI:10.29252/ijn.31.111.31]

Beck A. T., et al., 1961. An inventory for measuring depression. *Archives of General Psychiatry,* 4, pp. 561–71. [DOI:10.1001/archpsyc.1961.01710120031004] [PMID]

Direkvand Moghadam, A., Delpisheh, A. & Sayehmiri K., 2015. The trend of infertility in Iran, an original review and meta-analysis. *Nursing Practice Today,* 1(1), pp. 46-52. [Link]

Etemaad, J., Jowkar, B. & Rahpeima, S., 2015. [Prediction happiness depend on shame and guilt: Verification the moderator role of sex (Persian)]. *Quarterly Journal of Psychological Studies,* 11(2), pp. 67-86. [Link]

Gharibi, J., Gharibi, H. & Mohammadian, K., 2016. [A comparison of happiness, meaning of life and psychological hardiness in fertile and infertile women in Sanandaj (Persian)]. *Jornal of Woman and Family Studies,* 9(31), pp. 103-16. [Link]

Hashemi, F., Fili, A. R. & Safarinya, M., 2015. [The effectiveness of stress management (cognitive behavior) stress management training on infertile women's mental health (Persian)]. *Quarterly Journal of Health Psychology,* 3(12), pp. 58-69. [Link]

Hills, P. & Argyle, M., 2002. The Oxford happiness questionnaire: A compact scale for the measurement of psychological wellbeing. *Personality and Individual Differences,* 33(7), pp. 1073-82. [DOI:10.1016/S0191-8869(01)00213-6]

Karaca, A., et al., 2018. Development and assessment of a coping scale for infertile women in Turkey. *African Journal of Reproductive Health*, 22(3), pp. 13–23. [PMID]

Mirzaee, A., et al., 2021. Psychometric properties of the Persian version of the Oxford Happiness Questionnaire in a sample of the Iranian military. *Journal of Military Medicine,* 22(3), pp. 246-54. [Link]

Morshed-Behbahani, B., et al., 2020. Analysis and exploration of infertility policies in Iran: A study protocol. *Health Research Policy and Systems,* 18(5), pp. 5. [PMID] [PMCID]

Najafi, M., et al., 2013. [Psychometric properties of Farsi version of the Oxford Happiness Questionnaire among college students (Persian)]. *Educational Measurement,* 3(10), pp. 55-74. [Link]

Péloquin, K., et al., 2018. Whose fault is it? Blame predicting psychological adjustment and couple satisfaction in couples seeking fertility treatment. *Journal of Psychosomatic Obstetrics and Gynaecology,* 39(1), pp. 64–72. [DOI:10.1080/0167482X.2017.1289369] [PMID]

Rashid Almasi, B., Alipour, A. & Character, N. S., 2019. [The effect of positive psychotherapy intervention on depression, stress and happiness infertile women (Persian)]. *Family Pathology, Counseling and Enrichment Journal,* 4(2), pp. 75-88. [Link]

Rooney K. L. & Domar, A. D., 2018. The relationship between stress and infertility. *Dialogues in Clinical Neuroscience,* 20(1), pp. 41–7. [DOI:10.31887/DCNS.2018.20.1/klrooney] [PMID] [PMCID]

Sarac, M. & Koc, I., 2018. Prevalence and risk factors of infertility in Turkey: Evidence from demographic and health surveys, 1993-2013. *Journal of Biosocial Science,* 50(4), pp. 472–90. [DOI:10.1017/S0021932017000244] [PMID]

Seyedi, S. T., et al., 2012. Happiness and related factors in infertile women. *International Journal of Advanced Studies in Humanities and Social Science,* 1(3), pp. 177-85. [Link]

Shahverdi, J., et al. 2015. [A comparative study of the level of mental health, happiness, inferiority feelings, marital satisfaction and marital conflict in fertile and infertile women in Kermanshah (Persian)]. *Journal of Clinical Research in Paramedical Science,* 4(3), pp. e82062. [Link]

Shahverdi, J., et al., 2016. [Relationship between general health with happiness, inferiority feeling and marital conflict in Borujerd city infertile women (Persian)]. *Advances in Nursing & Midwifery*, 25(90), pp. 47-54. [Link]

Sheikholeslami, R., Nejati, E. & Ahmadi, S., 2011. [Prediction of components of happiness by self-esteem and marital relationship in married women (Persian)]. *Jornal of Women in Culture and Arts,* 3(3), pp. 39-54. [Link]

Stewart, M. E., et al., 2010. A hierarchy of happiness? Mokken scaling analysis of the Oxford happiness inventory. *Personality and Individual Differences,* 48(7), pp. 845-8. [DOI:10.1016/j.paid.2010.02.011]

Tavousi S. A., et al., 2022. Psychological assessment in infertility: A systematic review and meta-analysis. *Frontiers in Psychology,* 13, pp. 961722. [DOI:10.3389/fpsyg.2022.961722] [PMID] [PMCID]

Turner, K. A., et al., 2020. Male infertility is a women's health issue-research and clinical evaluation of male infertility is needed. *Cells,* 9(4), pp. 990. [DOI:10.3390/cells9040990] [PMID] [PMCID]

Vanassche, S., Swicegood, G. & Matthijs, K., 2012. Marriage and children as a key to happiness? Cross-national differences in the effects of marital status and children on wellbeing. *Journal of Happiness Studies,* 14(2), pp. 501-24. [Link]

Wendołowska, A., et al., 2022. Perceived partner's ˙ self-control and social support effects on relationship satisfaction in couples experiencing infertility or miscarriage: Dyadic analyses. *International Journal of Environmental Research and Public Health,* 19(4), pp. 1970. [PMID] [PMCID]

Xia, J. F., et al., 2017. Chinese medicine as complementary therapy for female infertility. *Chinese Journal of Integrative Medicine*, 23(4), pp. 245–52.[DOI:10.1007/s11655-016-2510-5] [PMID]

Yao, H., Chan, C. H. Y. & Chan, C. L. W., 2017. Childbearing importance: A qualitative study of women with infertility in China. *Research in Nursing & Health,* 41(1), pp. 69-77. [PMID]