



## **RELATIONSHIP BETWEEN DEPRESSION, ANXIETY, AND QUALITY OF LIFE AMONG WOMEN WITH INFERTILITY PROBLEM**

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### **ABSTRACT**

Cases of infertility tend to increase every year. Prevalence of infertility in the world is 16%. The prevalence of depression and anxiety disorders in infertile women is 57% and 67.2% respectively. Depression affects 350 million people worldwide. Women are twice as likely to be depressed as men. Data from 44 countries showed an anxiety prevalence of 0.9% - 28.3%. The prevalence of infertility in married couples of reproductive ages in Indonesia is 12-15%. Women with infertility more often get stigma than men. Emotional impacts emerge in marriages that result in depression and anxiety that allegedly decreases quality of life. To analyze the relation of depression and anxiety to the quality of life of women with infertility. A cross sectional study of 213 respondents at a private clinic in Kota Semarang, Indonesia. The questionnaire used consisted of socio-demographic components, HADS Scale (to determine the degree of anxiety and depression) and FertiQoL (to assess the quality of life of an individual with infertility) in Indonesian version. From 213 respondents, the average age was 31.8 years (min-max 21-47 years). mean duration of infertility is 4.9 years (min-max 1-17 years). Significant relations were found in total HADS with total FertiQoL ( $p = 0.001$ ,  $cc = -428$ ). HADS-D with total FertiQoL ( $p = 0.001$ ,  $cc = -326$ ). HADS-A with total FertiQoL ( $p = 0.001$ ,  $cc = -434$ ). There was a significant relation between total HADS, HADS-D and HADS-A with emotional, mind / body, relational, social, environment, tolerability, total scaled core, total scaled treatment domain of FertiQoL. The higher the depression and/or the anxiety, the more it will decrease the quality of life of women with infertility.

Keywords: depression, anxiety, quality of life, infertile women.

### **INTRODUCTION**

One of the natural needs of and individual is the need for reproduction. Reproduction is one thing that affects the quality of one's life. Any state of constraints in the reproductive system may have an emotional impact on marriage. Impacts that arise include depression and anxiety that allegedly lead to a decrease in the quality of life of the married couple. In the case of infertility, the stigma from the society might be stronger appointed to women compared their partners.<sup>1</sup>

Infertility is one of the global health problems and the trend of the case continues to increase every year. Prevalence is close to 10-20% of each pair, 40% infertility is associated with men, 40% infertility is associated with women and 20% in both sides of the couple. Prevalence of infertility in Indonesia in married couples of reproductive age is of 12-15%. Prevalence of infertility in the world is 16% and prevalence of depression and anxiety disorders in infertile women are 57% and 67.2% respectively. Depression is more common in women, with a ratio of men : women = 1 : 2. Depression affects 350 million worldwide. Data from 44 countries showed an anxiety prevalence of 0.9% to 28.3%. <sup>2-4</sup>

Depression and anxiety can affect the quality of life, especially of women and couples with infertility. Severe anxiety and depression require proper interventions in order to improve quality of life. <sup>2,5</sup> Thus, we hypothesized that level of anxiety and depression would be associated negatively with the quality of life of women with infertility.

## METHOD

This study is a cross sectional study of 213 respondents from a private clinic in Semarang City, Central Java, Indonesia in 2017. The survey package consisted of socio-demographic questions, HADS Scale (an instrument to determine one's degree of anxiety and depression), and FertiQoL (an instrument used to assess an infertile individual's quality of life). HADS Scale and FertiQoL have been adjusted to Indonesian version.

Ethical approval was obtained from the authors' university ethics committee. The survey was administered by the chief researchers and assistants.

## RESULT

From a total of 213 respondents, with an average age of 31.8 years (ranged from 21-47 years), and a mean duration of infertility of 4.9 years (ranged from 1-17 years). We used Spearman-Rho Test to examine the hypothesis. The relationships between of total HADS, HADS-D and HADS-A and an individual's quality of life are displayed in Table 1. Total HADS, HADS-D, and HADS-A were associated significantly with the total FertiQoL and each domain of FertiQoL.

**Table 1.** The relation of HADS total, HADS-D, HADS-A with FertiQoL.

FertiQoL	HADS Total		HADS-D		HADS-A	
	P	cc	P	cc	P	cc
<b>Core</b>	0.001	-.440**	0.001	-.329**	0.001	-.447**
<b>Emotional</b>	0.001	-.429**	0.001	-.302**	0.001	-.441**
<b>Mind/Body</b>	0.001	-.357**	0.001	-.247**	0.001	-.393**
<b>Relational</b>	0.001	-.240**	0.001	-.240**	0.003	-.199**
<b>Sosial</b>	0.001	-.398**	0.001	-.293**	0.001	-.403**
<b>Treatment</b>	0.001	-.251**	0.002	-.213**	0.001	-.245**
<b>Environment</b>	0.016	-.165*	0.014	-.168*	0.038	-.142*
<b>Tolerability</b>	0.001	-.279**	0.003	-.202**	0.001	-.285**
<b>Total</b>	0.001	-.428**	0.001	-.326**	0.001	-.434**

Spearman Rho Test, \*) Significant with  $p < 0.05$

\*\*) Significant with  $p < 0.01$

As shown in Table 1, it was found that infertility had the highest significant negative impact on HADS-A ( $p = 0.001$ ,  $cc = -.434$ ), followed by total HADS ( $p = 0.001$ ,  $cc = -.428$ ) and HADS-D ( $p = 0.001$ ,  $cc = -.326$ ).

In the Core-Scale FertiQoL, women with infertility receiving the highest significant negative impact sequentially were HADS-A ( $p = 0.001$ ,  $cc = -.447$ ) followed by total HADS ( $p = 0.001$ ,  $cc = -.440$ ) and HADS-D ( $p = 0.001$ ,  $cc = -.329$ ). The emotional subscale of FertiQoL has the highest correlation, especially in HADS-A ( $p = 0.001$ ,  $cc = -.441$ ) followed by total HADS ( $p = 0.001$ ,  $cc = -.429$ ) and HADS-D ( $p = 0.001$ ,  $cc = -.302$ ). The higher negative impact was then followed by the social subscale, with the highest correlation on HADS-A ( $p = 0.001$ ,  $cc = -.403$ ) followed by total HADS ( $p = 0.001$ ,  $cc = -.398$ ) and HADS-D ( $p = 0.001$ ,  $cc = -.293$ ). The domains affected are then followed by the mind / body subscale, with the highest correlation on HADS-A ( $p = 0.001$ ,  $cc = -.393$ ) followed by total HADS ( $p = 0.001$ ,  $cc = -.357$ ) and HADS-D ( $p = 0.001$ ,  $cc = -.247$ ). The lowest negative impact is the relational subscale, with higher correlation on HADS-D ( $p = 0.001$ ,  $cc = -.240$ ) and total HADS ( $p = 0.001$ ,  $cc = -.240$ ) and HADS-D ( $p = 0.001$ ,  $cc = -.293$ ).

On Treatment scale, women with infertility who experienced highest to lowest consecutive negative impacts were total HADS ( $p = 0.001$ ,  $cc = -.251$ ) followed by HADS-A ( $p = 0.001$ ,  $cc = -.245$ ) and HADS-D ( $p = 0.001$ ,  $cc = -.213$ ). Environment subscale has the highest correlation, especially on HADS-D ( $p = 0.014$ ,  $cc = -.168$ ) followed by total HADS ( $p = 0.016$ ,  $cc = -.165$ ) and HADS-A ( $p = 0.038$ ,  $cc = -.142$ ). Meanwhile tolerability subscale has a higher correlation in HADS-A ( $p = 0.001$ ,  $cc = -.285$ ) followed by total HADS ( $p = 0.001$ ,  $cc = -.279$ ) and HADS-D ( $p = 0.003$ ,  $cc = -.202$ ).

## DISCUSSION

Infertility in women is a traumatic process which may result in negative impacts on their quality of life.<sup>6</sup> In this study, we aim to assess the quality of life of women with infertility using the FertiQoL and HADS Scales. We identify which factors may affect one's quality of life. We also hypothesize that the quality of life of patients with infertility will decrease as the level of anxiety and depression increase. Infertility can negatively affect a woman's emotional status and decrease their quality of life. A decline in quality of life occurs in patients with more severe anxiety or depression.

In this study, as shown in Table 1, negative correlation was found between the FertiQoL subscale and the HADS-D and / or HADS-A subscales. This indicates that the decrease in FertiQoL score is associated with an increase in HADS-D and / or HADS-A scores. Decreased FertiQoL score indicates a worse quality of life.

Through the results of the study, it was found that infertility mainly had the highest negative impact significantly the quality of life of women with anxiety, followed by women with anxiety disorders and depression, then women with depression. This suggests that overall, female patients with anxiety had the worst quality of life.

In terms of each domain on the FertiQoL Scale, overall female patients have the poorest quality of life in terms of emotional, social, mind / body, and tolerability domains, with the emotional domain being the most disturbed aspect. In the same domain, poor qualities are then followed by women with anxiety-depression, and depressed women. In relational terms, both anxiety and anxiety-depression women experienced a worse decline than women with depression. Women with depression experienced the worst quality

degradation in terms of the domain environment, followed by women with anxiety and anxiety-depression.

The use of the FertiQoL and HADS Scales in this study has several advantages. With the use of HADS, we are able to conduct case assessments of patients with anxiety, depression, or depression-anxiety. Meanwhile the use of the FertiQoL scale enables us to detect the effects of infertility in certain aspects of quality of life, which cannot be achieved by the use of generic QOL instruments. For this reason, this is a key advantage of using FertiQoL in clinical medical practice. The FertiQoL is an instrument that is able to help healthcare professionals in assessing the quality of life in women with infertility. With the use of HADS and FertiQoL, professionals may integrate a holistic management practice including the quality of life and the patient's psychic status into clinical practice for the treatment of women with infertility.<sup>6-8</sup>

## CONCLUSION

This study demonstrated that depression and anxiety were correlated negatively with the quality of life of women with infertility. Depression and anxiety are inversely related to all FertiQoL domains. This study supports previous studies that suggest an association between depression and anxiety in women with infertility. Furthermore, this study shows that the higher the depression and / or anxiety indicates lower quality of life in women with infertility.

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