GYNECOLOGY

Prevalence of Anxiety and Depression in Infertile Women in Siriraj Hospital by using Thai Hospital Anxiety and Depression Scale

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ABSTRACT

Objectives: To identify the prevalence of anxiety and depression in infertile women at Siriraj Hospital using Thai Hospital Anxiety and Depression Scale (Thai HADS) and to identify the risk factors of anxiety and depression.

Materials and Methods: All the patients who attended at infertile clinic during July 2016 to February 2017 received the questionnaires that consisted of demographic information and Thai HADS questionnaire. The consent occurred when the participant gave the questionnaires back after completing. Potential risks were compared by Chi square and analysis of variance test.

Results: From 500 questionnaires, 421 were returned. The mean age was 36.5 years old and 61.3% had income ≥ 50,000 baht. Previous treatment failure was 71.3% (300/421) which 59% (177/300) had treatment failure ≥ 3 times. The prevalence of anxiety and depression were 13% and 3%, respectively. Factors that significantly lead to anxiety were duration of infertility 5 years or more, previous infertility treatment failure, previously failed in vitro fertilization (IVF) and the number of treatment failure ≥ 3 times. The relative risks of anxiety were 1.88, 2.37, 1.72 and 2.61, respectively

Conclusion: Prevalence of anxiety and depression in infertile women at Siriraj Hospital by using Thai HADS was 13% and 3%. Duration of infertility ≥ 5 years, previous treatment failure, previously failed IVF and the number of treatment failure ≥ 3 times increased anxiety significantly.

Keywords: infertility, anxiety, depression, HADS, Thai HADs

ความชุกของภาวะวิตกกังวลและซึมเศร้าของผู้ป่วยหญิงที่มีบุตรยากในโรงพยาบาลศิริราช โดยใช้แบบสอบถาม Hospital Anxiety and Depression Scale ฉบับภาษาไทย

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บทคัดย่อ

วัตถุประสงค์: เพื่อทราบถึงอัตราความชุกของภาวะวิตกกังวลและซึมเศร้าในผู้ป่วยหญิงที่มีบุตรยากของ รพ.ศิริราช โดยใช้แบบสอบถาม Hospital Anxiety and Depression Scale ฉบับภาษาไทย และปัจจัยเสี่ยงที่ทำให้เกิดภาวะวิตกกังวลและซึมเศร้าในผู้ป่วยที่มีบุตรยาก

วัสดุและวิธีการ: ผู้ป่วยหญิงที่เข้ารับการรักษาในคลินิกผู้มีบุตรยาก ในช่วงเดือนกรกฎาคม 2559 ถึงกุมภาพันธ์ 2560 จะได้รับแบบสอบถามซึ่งประกอบด้วย ส่วนที่เป็นข้อมูลพื้นฐาน และแบบสอบถาม Hospital Anxiety and Depression Scale ฉบับภาษาไทย ซึ่งให้ผู้ป่วยกรอกแบบสอบถามด้วยตนเอง หากผู้ป่วยส่งแบบสอบถามคืนจะถือว่าเป็นการให้ความยินยอมเข้าร่วมในงานวิจัยนี้ ในส่วนของการประเมินปัจจัยเสี่ยง ได้ใช้วิธีการทางสถิติ คือ Chi square และ ANOVA test

ผลการศึกษา: จากแบบสอบถาม 500 ฉบับ ได้รับการส่งคืน 421 ฉบับ โดยอายุเฉลี่ยของผู้เข้าร่วมวิจัยคือ 36.5 ปี และร้อยละ 61.3 มีรายรับมากกว่าหรือเท่ากับ 50,000 บาทต่อเดือน ร้อยละ 71.3 (300/421) ของผู้เข้าร่วมวิจัยเคยประสบความล้มเหลวในการเข้ารับการรักษาผู้มีบุตรยาก ซึ่งในจำนวนนี้พบว่า ร้อยละ 59 (177/300) เคยล้มเหลวในการรักษามาแล้วมากกว่าหรือเท่ากับ 3 ครั้ง โดยความชุกของภาวะวิตกกังวลและซึมเศร้า คือ ร้อยละ 13 และ 3 ตามลำดับ โดยปัจจัยเสี่ยงที่สัมพันธ์กับการเกิดภาวะวิตกกังวลอย่างมีนัยสำคัญทางสถิติคือ การอยู่ในภาวะการมีบุตรยากตั้งแต่ 5 ปีขึ้นไป, ประวัติการเคยประสบความล้มเหลวในการรักษาเรื่องมีบุตรยาก, ประวัติการเคยประสบความล้มเหลวในการรักษาโดยวิธี IVF และการประสบความล้มเหลวในการเข้ารับการรักษาเรื่องมีบุตรยากตั้งแต่ 3 ครั้งขึ้นไป

สรุป: ความชุกของภาวะวิตกกังวลและซึมเศร้าของผู้ป่วยหญิงที่มีบุตรยากใน รพ.ศิริราช โดยใช้แบบสอบถาม Hospital Anxiety and Depression Scale ฉบับภาษาไทย คือ ร้อยละ 13 และ 3 ตามลำดับ การอยู่ในภาวะการมีบุตรยากตั้งแต่ 5 ปี ขึ้นไป, ประวัติการเคยประสบความล้มเหลวในการรักษาเรื่องมีบุตรยาก, ประวัติการเคยประสบความล้มเหลวในการรักษาโดยวิธี IVF และการประสบความล้มเหลวในการเข้ารับการรักษาเรื่องมีบุตรยากตั้งแต่ 3 ครั้งขึ้นไป เป็นปัจจัยเสี่ยงที่มีนัยสำคัญทางสถิติที่นำไปสู่ภาวะวิตกกังวล

คำสำคัญ: *การมีบุตรยาก, วิตกกังวล, ซึมเศร้า, HADS, Thai HADS*

Introduction

Infertility defined as failure to conceive after 12 months of unprotected intercourse. Many ways to treat infertility include conventional methods such as providing advice about timing of intercourse, preventing miscarriages, ovulatory stimulation and/or to repair reproductive organ and more advanced method using assisted reproductive technology (ART). During treatment, patient could face with many steps of the treatment process, medication side effects, the high costs of treatments and undesirable outcomes. These may lead them to develop psychiatric problems[1]. According to the study in ART clinic in Taiwan, 40.2% of patients had a psychiatric disorder, which were generalized anxiety disorder (23.2%), major depressive disorder (17.0%), and dysthymic disorder (9.8%)[2].

Anxiety is one of the psychological stresses. Study in Iran showed that anxiety levels in those who failed to conceive were slightly higher than those who got pregnant[3]. In the study, the infertile participants had relatively elevated stress levels which prolactin and cortisol levels were higher than in the fertile group. The rising level of cortisol can delay the LH surge[4] and associated with significantly lower progesterone levels[5]. According to the study in Guatemala, elevated gonadotrophins and decreased midluteal progesterone levels could impaired the ovulation and luteinization, which result in lower chances of successful implantation[5]. In addition, psychological stress has been reported to affect the outcome of infertility treatment[3].

There are several ways to detect anxiety and depression such as self-rating depression scale (SDS), Zung depression scale (ZDS), Zung anxiety scale (ZAS), state trait anxiety inventory (STAI), Beck depression inventory (BDI), mini-international neuropsychiatric interview (MINI) and also hospital anxiety and depression scale (HADS). All of these, HADS has been shown to have satisfactory psychometric properties. HADs was originally developed in 1983 by Zigmond et al(6) and has been used worldwide. HADS was translated in to Thai version and was used in cancer patients to study the validity of the questionnaire by comparing to the diagnosis of the psychiatrist. The sensitivity and specificity to detect anxiety were 100% and 86%, respectively. For the sensitivity and specificity of depression were 85.7% and 91.3%, respectively. Hence, the Thai version of HADS[7] was chosen to use in the present study.

There were substantial amount of researches that studied about the stress, anxiety and depression in the infertile couple. Most studies performed in the western but few studies in the Asia[8-10]. The objectives of this study were 1) to identify the prevalence of anxiety and depression in infertile women at Siriraj hospital by using a Thai version of Hospital Anxiety and Depression Scale (Thai HADS) and 2) to identify the risk factors that lead the patients to have anxiety and depression.

Materials and Methods

This cross-sectional study enrolled infertile women attending the infertile clinic at Siriraj Hospital, from July 2016 to February 2017. Eligible females were aged 18 years or older, had a history of infertility, and were able to read and write in Thai. All participants had never been diagnosed with any psychiatric problems. Prior to conducting the study, the study proposal and protocol had been approved by the Ethics Committee of Siriraj Institutional Review Board (Protocal No.745/2558 (EC1)).

The sample size (n = 385) was calculated from pilot study which has been done in the infertile clinic at Siriraj Hospital. It was done in 40 cases, 3 of them were founded to have anxiety and one of them had depression. Because of higher risk for losing data, thirty percent was added to sample size. Thus, the overall sample size would be 500.

The patients who received the questionnaires were informed about the objectives of the study, the confidentiality of the data, and that acceptance or refusal to participate in the study would not affect their treatment procedures. Consents to participate in the study were inferred from the action of the participant submitting the questionnaires to provided box at the

clinic.

Participants completed two questionnaires, the first parts containing the demographic and the fertility information. These questionnaires included age, sex, height, weight, educational levels, duration of infertility, a history of spontaneous abortion, type of infertility, the number of previous infertility treatment failures, and the number of previous treatment of infertility before visiting Siriraj Hospital.

The second parts of questionnaires contained Thai HADS for evaluating the psychological status. Thai HADS consists of two subscales, 1) anxiety (HADS-A) and 2) depression (HADS-D). Each subscale composes of seven items which ranging from 0 to 3 scores. The total score of HADS-A and HADS-D each ranges from 0 to 21, with a score of 8 to 10 on either HADS subscale is suggestive of higher risk for psychiatric condition (doubtful diagnosis) but the cut point do make the diagnosis of anxiety or depression is 11 or greater. The affected case would be sent to the psychiatrist.

Statistical analysis

This study used numbers and percentages to describe categorical variables and mean to describe continuous variables. Potential risks were compared by Chi square and analysis of variance (ANOVA) test.

Results

Among 500 questionnaires distributed to the participants, 18 questionnaires were lost and 61 questionnaires were incomplete filled. A total of 421 female infertile patients returned the complete questionnaires and there were considered as the participants in the study. The baseline characteristics of the 421 participants are shown in Table 1. Mean age was 36.5 years old and most of them had normal body mass index (BMI) (75.8%). About 90% of participants had obtained Bachelor's degree or higher education degree. Almost all of participants were employed and more than half had family income of greater than 50,000 Baht (61.3%).

Table 1. Baseline characteristics of participants (N = 421).

Characteristics	N (%)
Age (years) *	36.5 ± 4.6
BMI (kg/m^2) *	22.2 ± 3.8
BMI category	
Underweight (< 18.5 kg/m^2)	24 (5.7)
Normal (18.5-24.9 kg/m^2)	319 (75.8)
Overweight (≥ 25 kg/m^2)	78 (18.5)
Education	
Less than bachelor degree	38 (9)
Bachelor degree	252 (59.9)
Higher than Bachelor degree	131 (31.1)
Employment status	
Unemployed	33 (7.8)
Employed	388 (92.2)
Family income	
< 50,000 Baht	163 (38.7)
≥ 50,000 Baht	258 (61.3)

BMI: body mass index, *reported as mean ± standard deviation

History about infertility in participants is presented in Table 2. Most participants (67.7%) had duration of infertility less than 5 years and 80.2% of the participants had primary infertility. For the treatment failure, 71.3% have ever failed infertility treatment and 59% of previously failed cases had treatment failures at least 3 times. Most of the previously failed cases were failed in vitro fertilization (IVF) (74.7%).

Table 2. History of infertility (N = 421).

Characteristics	N (%)
Duration of infertility (years)*	3.9 ± 2.8
Duration of infertility	
< 5 years	285 (67.7)
≥ 5 years	136 (32.3)
Infertility type	
Primary	340 (80.2)
Secondary	81 (19.8)
Previous abortion	87 (20.7)
Previous infertility treatment failure	300 (71.3)
Number of previous treatment failure (N=300)	
< 3 times	123 (41)
3-5 times	106 (35)
> 5 times	71 (24)
Number of previous treatment failure (N=300)	
Failed IUI	76 (25.3%)
Failed IVF	224 (74.7%)

* reported as mean ± standard deviation

Table 3. Diagnosis of anxiety and depression (N=421).

Diagnosis of anxiety and depression	N (%)
Anxiety score*	7 (4-9)
Depression score*	3 (1-5)
Diagnosis of anxiety	
No anxiety (score 0-7)	255 (61)
Doubtful (score 8-10)	111 (26)
Anxiety (score ≥ 11)	55 (13)
Diagnosis of depression	
No depression (score 0-7)	378 (90)
Doubtful (score 8-10)	31 (7)
Depression (score ≥ 11)	12 (3)

* reported as median (Interquartile range)

Table 3 demonstrates the diagnosis of anxiety and depression according to Thai-HADS questionnaires. Median anxiety and depression scores were 7 and 3, respectively. The prevalence of anxiety and depression was 13% and 3%, respectively. Doubtful diagnosis of anxiety and depression were found 26% and 7%, respectively.

Comparison of various characteristics between diagnosis of anxiety is shown in Table 4. Four risk factors significantly associated with anxiety were 1) duration of infertility 5 years or more, 2) previous infertility treatment failure, 3) previously failed IVF and 4) the number of treatment failure ≥3 times. The relative risks of anxiety were 1.88, 2.37, 1.72 and 2.61, respectively. No significant differences observed between groups in terms of age, income and previous abortion.

However, comparing risk factor associated with depression as shown in Table 5, there was no significant differences observed between groups in terms of age, income, duration of infertility, previous abortion, and failure of infertility treatment.

Table 4. Risk factor associated with anxiety disorder (N=421).

Characteristics	Anxiety (N)	No anxiety (N)	Relative risk (95%CI)
Age			
≥ 35 years	36	242	0.97 (0.58-1.64)
< 35 years	19	124	
Income			
≥ 50,000 Baht	36	222	1.2 (0.71-2.01)
< 50,000 Baht	19	144	
Duration of infertility			
≥ 5 yrs	26	110	1.88 (1.15-3.06)
< 5 yrs	29	256	
History of abortion			
Yes	13	74	1.19 (0.67-2.11)
No	42	292	
Previously failed infertility treatment			
Yes	47	253	2.37 (1.15-4.86)
No	8	113	
Previously failed IVF			
Yes	23	101	1.72 (1.05-2.82)
No	32	265	
Number of treatment failure			
≥ 3 times	36	141	2.61 (1.55-4.40)
< 3 times	19	225	

IVF: in vitro fertilization

Table 5. Risk factor associated with depression (N = 421).

Characteristics	Depression (N)	No depression (N)	Relative risk (95%CI)
Age			
≥ 35 years	9	269	1.54 (0.42-5.61)
< 35 years	3	140	
Income			
≥ 50,000 Baht	5	253	0.45 (0.15-1.40)
< 50,000 Baht	7	156	
Duration of infertility			
≥ 5 yrs	7	129	2.93 (0.95-9.08)
< 5 yrs	5	280	
History of abortion			
Yes	2	85	0.77 (0.17-3.44)
No	10	324	
Previously failed infertility treatment			
Yes	9	291	1.21 (0.33-4.39)
No	3	118	
Previously failed IVF			
Yes	6	118	2.40 (0.79-7.28)
No	6	291	
Number of treatment failure			
≥ 3 times	6	171	1.38 (0.45-4.20)
< 3 times	6	238	

IVF: in vitro fertilization

Discussion

The study aimed to identify the prevalence of anxiety and depression of infertile women at Siriraj Hospital using Thai Hospital Anxiety and Depression Scale (Thai HADS) and to identify the risk factors of anxiety and depression. Using the Thai HADs Questionnaires, this study revealed that the prevalence of anxiety and depression of infertile patients at Siriraj Hospital was 13% and 3%, respectively.

Similar findings were reported by the studies in Poland[11] and in Italy[12] where the prevalence of anxiety among infertile women was 15.53% and 14.7%, respectively. The study in Taiwan found that the prevalence of anxiety was 23.2%[2], relatively higher than what we found in this study. It may be from using different tools to diagnose anxiety. In the study from Taiwan, researcher used the MINI that conducted the interview by a board-certified psychiatrist, so that study in Taiwan had more chance to detect anxiety than self-questionnaires as in our study.

The Prevalence of depression in our study was 3%, lower than what reported by previous studies in other countries; for example 17% in Taiwan[2], 17.9% in Italy[12], 35.44% in Poland[11], 68.9% in Iraq[13]. The lower prevalence might be due to the different methods in detecting the psychiatric problems, and the baseline characteristics of the patients. In many studies, the participants were indicated for IVF or ICSI. Generally accept that patients undergoing IVF or ICSI typically tend to be under stress. This may explain the higher prevalence of depression reported in Poland and in Iraq[11,13].

The significant factors that lead to anxiety were duration of infertility ≥ 5 years, previously failed treatment, previously failed IVF and the failure of treatment ≥ 3 times. In other studies, the factor that associated with anxiety and depression were age and male infertility (Japan)[14], younger and longer history of infertility (Italy)[12], age, social concern, sexual concern (Hungary)[15], primary type of infertility, duration of infertility and treatment, and threat of husband's remarriage (Iraq)[13]. Therefore, inconclusive data to confirm what are the significant factors that affected anxiety in infertile couples.

Due to the low prevalence of the depression in this study, we could not detect the risk factors that lead to the depression.

The strengths of the study were 1) we used Thai version of questionnaires, which is simple and reliable, and 2) we compared the risk factors for anxiety and depression.

This study had some limitations. First, it was a cross sectional study. Thereby, the result could not evaluate the incidence of the anxiety and depression, because some cases may develop anxiety or depression after repeated treatment cycle. Also the method of the study, we had collected the data at one point of time and no further study after the participants underwent the treatment. So from time to time, the incidence might be increased. Second, the subjects were only females that may have higher stress. But in some cases, data from males may reveal some helpful hints to improve these psychiatric problems.

For the application of this research, due to the high prevalence of anxiety, infertile patients should be provided the psychological assessment and the affected cases need the intervention such as psychological support or psychiatric consultation to reduce the stress. Relieving stress in these patients might increase the success rate of infertility treatment. In this study, the affected cases were sent to the psychiatrist.

Further studies are required to evaluate the psychiatric problems in men or in couples to clarify the prevalence of anxiety and depression, the associated risk factors and the effect of anxiety and depression to the outcome of infertility treatment.

Conclusion

Prevalence of anxiety and depression in infertile women at Siriraj Hospital by using Thai HADS was 13% and 3% respectively. Duration of infertility ≥ 5 years, previous treatment failure, previously failed IVF and the number of treatment failure ≥ 3 times increased anxiety.

Potential conflicts of interest

The authors declare no conflict of interest.

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