

# Gender Differences in Infertility-Related Stress and the Relationship between Stress and Social Support in Thai Infertile Couples

Opas Sreshthaputra MD\*,  
Rung-aroon Sreshthaputra MSc\*, Teraporn Vutyavanich MD\*

\* Department of Obstetrics and Gynecology, Faculty of Medicine, Chiang Mai University, Chiang Mai

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**Objective:** To study infertility-related stress among men and women and to examine its relationship with the level of perceived social support.

**Material and Method:** The Fertility Problem Inventory (FPI) and the Personal Resource Questionnaire (PRQ) were translated into Thai and used to assess the level of infertility-related stress and perceived social support, respectively, in 238 infertile subjects.

**Results:** The global FPI scores for men and women were  $154.2 \pm 18.3$  and  $154.7 \pm 22.6$ , respectively ( $p > 0.05$ ). There was no significant difference in their perceived social support (PRQ scores =  $137.8 \pm 14.0$  and  $134.0 \pm 16.7$ , respectively). A significant negative correlation ( $r = -0.1894$ ;  $p < 0.001$ ) existed between global stress and social support in women, but not in men.

**Conclusion:** Thai infertile couples experienced a high level of stress. Unlike previous studies from Western countries, there was no gender difference in infertility-related stress.

**Keywords:** Gender differences, Infertility stress, Social support

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Infertility is defined as the inability to conceive after 12 months of regular unprotected intercourse<sup>(1)</sup>. It is a major health care problem with physical and psychological impacts on both the infertile couples and society. Around 12% of women aged 15-44 years in the USA have difficulty achieving a pregnancy or carrying a baby to term. A similar proportion of Thai women also face this problem<sup>(2)</sup>. The management of infertility depends on its causes. Treatments range from simple education or counseling, to the use of medications for ovulation induction, and finally to the use of highly complicated medical procedures, such as assisted reproductive technology.

Infertility is often described as a crisis in life that causes both physical and psychological stress to

the couples<sup>(3)</sup>. Stress is defined as any event that a person perceives as threatening or harmful to himself and his family. Infertile couples have higher scores on repeated measures of psychological distress compared to fertile couples<sup>(4)</sup>. Stress from infertility differs from others in duration. Infertile couples experience chronic stress with each passing month without a conception. Stress and infertility have a circular relationship that aggravates each other<sup>(5-7)</sup>. Stress drives many organs in our body to work harder than normal and increases the production of some important chemicals, including hormones. Psychological stress has a negative effect on reproductive function. For example, anxiety or depression is associated with a longer menstrual cycle. In some women, excessive stress can delay or even inhibit ovulation<sup>(8)</sup>. Stress indirectly impairs fertility by decreasing the desire for sexual intercourse, even in couples who are trying to conceive<sup>(9)</sup>.

Women undergoing infertility treatment have similar levels of stress as those who face life-threatening

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Correspondence to: Sreshthaputra O, Division of Reproductive Medicine, Department of Obstetrics and Gynecology, Faculty of Medicine, Chiang Mai University, Chiang Mai 50200, Thailand. Phone: 053-945-552, Fax: 053-946-112, E-mail: [osreshth@mail.med.cmu.ac.th](mailto:osreshth@mail.med.cmu.ac.th)

illnesses, such as cancer and heart disease. Infertile couples, therefore, need special attention and intense psychosocial support from health care personnel<sup>(10,11)</sup>. Social support is defined as any physical or emotional comfort given by the family, friends, co-workers and others. Social support currently receives more attention in medical practice, especially in the field of acute and chronic disease, bereavement, pregnancy, and infertility. Research on social support and the psychological stress of infertility showed that social support serves as a buffer against the negative effects of stress<sup>(12)</sup>. Infertile couples depended primarily on their spouse and family to cope with stress<sup>(13)</sup>. With regard to gender, infertile women were more likely to profit from social support than men<sup>(14)</sup>.

There is a lack of study on infertility-related stress and social support in Thai infertile couples. In the present study, the authors examined the gender difference in infertility-related stress and the possible relationship between stress and the level of perceived social support.

#### **Material and Method**

The Ethics Committee of the Faculty of Medicine, Chiang Mai University, approved the present study. Two hundred thirty eight consecutive infertile patients, who attended the infertility clinic at Maharaj Nakorn Chiang Mai Hospital between November 2004 and June 2005, were invited to participate in the present study. All approached couples gave their informed consent.

Participants were asked to complete questionnaires that consisted of three parts. The first part collected demographic data about the respondents. The second part was the Fertility Problem Inventory (FPI) questionnaire, which is a valid and reliable instrument for the assessment of infertility-related stress<sup>(15)</sup>. The questionnaire contains 46 items, each with 6-point Likert responses. The items are grouped into five domains, namely social concern (10 items), sexual concern (8 items), relationship concern (10 items), need for parenthood (10 items), and rejection of childless lifestyle (8 items). Global stress is calculated by summing all five subscale scores. The third part was the Personal Resource Questionnaire 85 part II (PRQ 85-II). This is a 25-item questionnaire, each with 7-point Likert responses, that measures the respondent's level of perceived social support<sup>(16)</sup>. The authors obtained written permission for the use and translation into Thai of both the FPI and PRQ 85-II questionnaires for the present study. After translation, the Thai versions of

the questionnaires were back-translated into English by outside experts, who did not see the originals and were not aware of the purpose of the questionnaires. Any discrepancies between the original and the back-translated items were resolved by discussion. The internal consistency of both translated questionnaires was tested by Cronbach alpha coefficient, and found to be good at 0.85 and 0.84 for FPI and PRQ 85-II, respectively. The test-retest reliability of FPI and PRQ 85-II was 0.83 and 0.84, respectively. All questionnaires were immediately checked after completion and participants were asked to fill in any missing data or unanswered items.

Data were entered into Microsoft Office Excel (Microsoft Corporation, USA) and imported into Stata version 8.2 (StataCorp, College Station, Texas) for statistical analysis. Descriptive statistics were used to summarize baseline characteristics as percentages or mean  $\pm$  standard deviation (SD), as appropriate. Chi-square and Fisher exact tests were used to compare frequency data, as appropriate. Independent student t-tests were used to compare continuous variables. Pearson correlation coefficient was calculated to study the relationship between infertility-related stress and perceived social support. A p-value of  $< 0.05$  was considered statistically significant.

#### **Results**

Two hundred thirty eight infertile subjects (111 infertile couples, 3 infertile males and 13 infertile females) completed the questionnaires. Personal data of the respondents are summarized in Table 1. The mean age of the males was significantly higher than that of the females ( $34.1 \pm 5.8$  and  $31.8 \pm 5.1$  years, respectively;  $p = 0.002$ ). Most of them had primary infertility. There was no significant difference in the average duration of infertility and treatment in the male and female subjects ( $50.3 \pm 38.7$  versus  $49.2 \pm 37.8$  months; and  $23.7 \pm 23.6$  versus  $23.4 \pm 22.9$  months, respectively).

The stress levels of both male and female subjects were moderate in the subscale scores of social concern and rejection of childless lifestyle, but high in sexual concern, relationship concern, and the need for parenthood. Their global stress was high, with no significant difference among males and females (Table 2). There was a positive correlation between the global stress scores of infertile females and their partners ( $r = 0.562$ ,  $p = 0.000$ ). There was no significant difference in the mean PRQ scores between the male and female subjects ( $134.0 \pm 16.7$  and  $137.8 \pm 14.0$ ,

**Table 1.** Baseline characteristics of infertile subjects

		Female (n = 124)	Male (n = 114)	p-value
Occupation	Employee	44 (35.5 %)	37 (32.5 %)	NS
	Civil servant	35 (28.2 %)	35 (30.7 %)	
	Merchant	26 (21.0 %)	21 (18.4 %)	
	Farmer	15 (12.1 %)	21 (18.4 %)	
	Housewife	4 (3.2 %)	-	
Education	Primary school	17 (13.7%)	17 (14.9 %)	0.039
	Secondary school	33 (26.6%)	30 (26.3 %)	
	College	11 (8.9%)	24 (21.1 %)	
	University	63 (50.8%)	43 (37.7 %)	
Infertility status	Primary	94 (75.8 %)	90 (78.9 %)	NS
	Secondary	30 (24.2 %)	24 (21.1 %)	
Causes of infertility	Female factors	46 (37.1 %)	39 (34.2 %)	NS
	Male factors	15 (12.1 %)	15 (13.2 %)	
	Combined factors	8 (6.5 %)	7 (6.1 %)	
	Under investigation	55 (44.4 %)	53 (46.5 %)	

NS = not significant

**Table 2.** Subscale and global FPI scores and stress level of infertile couples

	FPI score (mean ± SD)		Stress level		p-value
	Female (n = 124)	Male (n = 114)	Female (n = 124)	Male (n = 114)	
Social concern	30.1 ± 7.1	29.6 ± 5.9	Average	Average	NS
Sexual concern	22.3 ± 5.6	23.2 ± 5.2	High	High	NS
Relationship concern	32.3 ± 6.0	32.2 ± 5.3	High	High	NS
Rejection of a childless lifestyle	28.1 ± 5.7	28.5 ± 5.0	Average	Average	NS
Need for parenthood	42.0 ± 7.0	40.7 ± 6.8	High	High	NS
global stress	154.7 ± 22.6	154.2 ± 18.3	High	High	NS

NS = not significant

**Table 3.** Correlation between subscale and global infertility scores with the level of perceived social support of infertile men and women

	Correlation coefficients	
	Women	Men
Social concern	-0.1089	-0.1108
Sexual concern	-0.1636	-0.1492
Relationship concern	-0.3033*	-0.2675**
Rejection of a childless lifestyle	-0.0428	0.0753
Need for parenthood	-0.0632	0.0567
Global stress	-0.1894**	-0.1159

\* p &lt; 0.001

\*\* p &lt; 0.05

respectively). There was a significant negative correlation between the global stress scores and the scores of perceived social support in infertile women ( $p < 0.001$ ), but not in men (Table 3).

### Discussion

The authors confirmed that Thai infertile couples experienced a high level of infertility-related stress. However, the authors found no significant difference in global stress or in any of the five subscale scores of FPI among infertile males and females. This is in contrast with prior studies from western countries, which suggested that infertile women had a more stressful life experience and greater psychological distress than men<sup>(17,18)</sup>.

This difference could be due to many factors. For example, there was a lag time of nearly 10 years between previous studies and the present study. Therefore, the different results could reflect changes in the attitudes and perceptions of society with time. In the past, the weight of responsibility for conception and childbearing was put more on women than men. A woman felt more responsible for a failure to conceive, even when the cause of infertility resided in her male partner. With the availability of the Internet and other mass media, there has been a trend towards equality between male and female.

Cultural differences could also explain the different results in the present study. In Thai society, relatives tend to live together in an extended family, which fosters greater contact with close kin. Infertile couples often had very close ties with their nieces or nephews, who lived in the same household. More often than not, the children were treated as if they were their own offspring. This was reflected in the authors' finding that the subscale scores in the domains of social concern and rejection of childless lifestyle were compatible with moderate stress, compared with a high level of stress in other domains. In contrast, western infertile couples live in a nuclear family, with less support from relatives and less chance for close contact with their nieces or nephews.

In the present study, global infertility stress was inversely related to social support in women, but not in men. The data support a recent study showing that social support was significantly related to a decrease in perceived infertility stress only in infertile women<sup>(19)</sup>. It is possible that men and women use different mechanisms to cope with infertility. Women use proportionately greater amounts of confrontative coping, accepting responsibility, seeking social support and escape/avoidance than men. In contrast, men use proportionately greater amounts of distancing, self-control, and painful problem-solving, without seeking social support<sup>(20)</sup>. They do not often share their anxieties with anyone except their wives<sup>(21)</sup>.

Although the FPI and PRQ are valid and reliable instruments for the assessment of infertility-related stress and perceived social support in Western countries, the instruments have never been tested in the Thai population. It was reassuring that the Cronbach alpha coefficients of the translated instruments showed good internal consistency. Nevertheless, this does not imply that the original and the Thai versions of the instruments were equivalent. Some items in the instruments might have different meanings

and importance in different populations. It is, therefore, possible that cross-cultural differences will have distorted the results of the present study.

In conclusion, the authors could not confirm previous studies from western countries that show a gender difference in global stress in infertile Thai couples. It remains an unresolved issue whether the difference is due to cultural and other factors, or it just reflects subtle variations in the instruments used to measure infertility-related stress. The authors suggest that more research should be done to assess cross-cultural differences and to ascertain whether the norms and cut-points used in the original scale are appropriate for the Thai translated version.

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**ความแตกต่างในระดับความเครียดของชายและหญิงเนื่องจากภาวะมีบุตรยาก และความสัมพันธ์ระหว่างความเครียดกับการได้รับการสนับสนุนด้านจิตใจจากสังคม ในคู่สมรสมีบุตรยากชาวไทย**

โอภาส เศรษฐบุตร์, รุ่งอรุณ เศรษฐบุตร์, อธิระพร วุฒยวนิช

**วัตถุประสงค์:** เพื่อศึกษาความเครียดเนื่องจากภาวะมีบุตรยากในฝ่ายชายและหญิง และดูความสัมพันธ์ระหว่างความเครียดกับการได้รับแรงใจสนับสนุนจากสังคม

**วัสดุและวิธีการ:** ผู้รายงานได้แปลเครื่องมือวัด 2 ชิ้น คือแบบประเมินความเครียด ของผู้ที่มีภาวะมีบุตรยาก (Fertility Problem Inventory; FPI) และแบบประเมิน การได้รับการสนับสนุนส่วนบุคคล (Personal Resource Questionnaire; PRQ) เป็นภาษาไทย เพื่อให้ประเมินความเครียดจากภาวะมีบุตรยาก และประเมินความมากน้อย ที่คู่สมรสมีบุตรยาก รู้สึกว่าตนได้รับการสนับสนุนด้านจิตใจจากคนใกล้ชิดและสังคม โดยทำการศึกษาคู่สมรส มีบุตรยากจำนวน 238 ราย

**ผลการศึกษา:** คะแนนความเครียดจากภาวะมีบุตรยากของฝ่ายชายและหญิงเป็น  $154.2 \pm 18.3$  คะแนน และ  $154.7 \pm 22.6$  คะแนน ตามลำดับ ( $p > 0.05$ ) ไม่พบความแตกต่างในความรู้สึกเกี่ยวกับการได้รับการ สนับสนุนจากสังคม (คะแนนของ PRQ ในฝ่ายชายและหญิง =  $154.2 \pm 18.3$  คะแนน และ  $154.7 \pm 22.6$  คะแนน ตามลำดับ;  $p > 0.05$ ) มีความสัมพันธ์เชิงผกผันอย่างมีนัยสำคัญทางสถิติ ( $r = -0.1894$ ) ระหว่างความเครียด กับการได้รับการสนับสนุน จากสังคมในฝ่ายหญิง แต่ไม่พบความสัมพันธ์ ดังกล่าวในฝ่ายชาย

**สรุป:** คู่สมรสมีบุตรยากชาวไทยมีความเครียดสูง อย่างไรก็ตามการศึกษานี้ไม่พบว่าระดับความเครียดแตกต่างกัน ในฝ่ายชายและหญิง ซึ่งไม่เหมือนกับการศึกษาที่ผ่านมาๆ มาจากประเทศทางตะวันตก