

# The Determinant Factors and the Anxiety Level of Infertile Couples During the Treatment of *In Vitro* Fertilization and Embryo Transfer at Chulalongkorn Hospital

VALAIKORN PHROMYOTHI, MSc\*,  
PRAMUAN VIRUTAMASEN, MD\*\*,

## Abstract

The determinant factors and the anxiety level of infertile couples during the treatment of *in vitro* fertilization and embryo transfer were studied in 60 infertile couples between 1 January to 31 May 2000. The instruments employed in the study were Personal and Health Data Questionnaire, the Cornell Medical Index, and the Determinant Factors of Anxiety. The average age was between 36-40 years old, holding a Bachelor's degree and working in private companies earning a monthly income between 10,000-20,000 Baht. Most infertile couples wanted to have a child in order to fulfill the meaning of being a "family" and were anxious about the treatment. The couples in general did not have any background of emotional disturbance. Women were found to have a slightly higher anxiety than men. The determinant factors of anxiety were found to be the side-effects of the infertility treatment, inadequate time to consult with the physician/nurse, the outcome of the infertility treatment, possibility to possibility of not succeeding/infertility cannot be treated and the process of the diagnostic procedures accordingly.

The results of the study will serve as a guideline for improving better services and understanding between the physician and the patient regarding the expectations of the IVF treatment.

**Key word :** Anxiety, *In Vitro* Fertilization, Embryo Transfer

**PHROMYOTHI V & VIRUTAMASEN P**  
**J Med Assoc Thai 2003; 86: 425-429**

\* Department of Counseling Psychology, Assumption University, Bangkok 10240,

\*\* Reproductive Medicine Unit, Department of Obstetrics and Gynecology, Faculty of Medicine, Chulalongkorn University, Bangkok 10330, Thailand.

The desire to have children and be parents is one of the most fundamental aspects of being human. As Callan<sup>(1)</sup> states, all individuals need children to fulfill the need for love, achievement, companionship and self-fulfillment. Assisted Reproductive Technology (ART), a sophisticated technology that assists infertile couples to bear children, offers hope to many infertile couples, nevertheless, these technologies can create anxiety, tension, and depression. According to Boivin et al<sup>(2)</sup>, the most important psychological determinant reactions during *in vitro* fertilization (IVF) were the uncertainty of the treatment procedures. Local studies by Anantavuthikanon<sup>(3)</sup> showed that some psychological factors in infertile couples were anxiety (46%) and depression (17%). In infertile women, the medical treatment itself is a source of stress while some may experience great anxiety and fear about surgery, anesthesia and even blood tests. Others may also worry about the long-term and unknown effects of hormonal therapy. Past research has confirmed that infertile women were more emotionally disturbed than fertile women<sup>(4)</sup>.

This research is worth studying especially the determinant factors of anxiety experienced by both husband and wife during the treatment of *in vitro* fertilization and embryo transfer. In addition, to be able to determine the importance of infertile couples' psychological well-being, physicians can play a major role in helping the patient make the decision about the treatment and to cope with the emotional impact. If the determinant factors of anxiety are identified, measures such as more attention from physician time could be provided to the infertile patient. The presence of a counselor can be specially provided to help infertile patients relieve anxiety at a certain level.

## PATIENTS AND METHOD

A descriptive research design was employed in this survey study. The population of the study consisted of one group of infertile couples: namely, husband and wife seeking infertility treatment at the Division of Reproductive Medicine (infertile clinic), Chulalongkorn Hospital during the early morning of weekdays and weekends between the months of January and May 2000. The questionnaire was distributed to the infertile couples to complete while waiting for medical treatment and incomplete answers were to be taken home to be completed and returned at the next medical appointment. The personal and health data questionnaire was devised to collect relevant data regarding general background and health

history. The Cornell Medical Index, a self-evaluation questionnaire was aimed at assessing any emotional disturbance in the husband and wife. The determinant factors of anxiety were employed to investigate and identify the major determinant factors or anxiety-provoking situations. Data were statistically analyzed using frequency and percentage to examine general information, analyze the data by using the mean for each item and categorize according to the gender of the sample group in order to arrange the level of anxiety to various determinant factors and test the value of  $\chi^2$  by testing anxiety of the sample group in connection with other demographics. Chi-square was used to find the significant relationship between husband and wife and their anxiety level. The logic method was employed in the Cornell Medical Index section to interpret the scale and test the  $\chi^2$  with the independent variables. *T*-test was applied to test the differences of the overall mean of the sample group whether there was a significant difference between the husband and wife.

## RESULTS

A total of 120 subjects participated in the study. The majority of the infertile couples in this study revealed that 46.7 per cent of infertile couples were anxious while 25 per cent were very anxious about the treatment. The most dominant problem found was the inconvenience of getting through to the service in the hospital, which accounted for 35.83 per cent followed next by the inconvenient time of 16.67 per cent. The results revealed that if the treatment failed, 43.33 per cent would accept the fact and live their life to the fullest, while 37.50 per cent would feel sad. However, a high percentage of 75 per cent would attempt to get further treatment if it was unsuccessful. By applying the Cornell Medical Index section on anxiety and depression, 70 per cent did not reveal to have any emotional disturbance background. Only 30 per cent were considered to be anxious. (Table 1)

The determinant factors of anxiety in the husband and wife shown in Table 2 demonstrated that of the total sample group of 120 subjects, the primary factor that caused infertile patients to worry was the side effects of infertility treatment which had a mean of 3.29 and a standard deviation of 1.16. In the analysis given below (Table 2), it can be assume that the patients feel assured about the quality of the physician. However, the major factors which caused anxiety were the side-effects of the infertility treatment, inadequate time to consult with the physician/nurse, the outcome

**Table 1. Anxiety and problems encountered (husband and wife).**

| Distribution   | Percentage |
|--|------------|
| Anxiety towards the infertility treatment                            |            |
| Very anxious   | 25         |
| Anxious  | 46.70      |
| A little anxious   | 21.70      |
| None   | 6.70       |
| Problems encountered when getting the treatment                      |            |
| Inconvenient time  | 16.67      |
| Did not know the treatment procedure                                 | 9.17       |
| Long waiting period to meet the physician                            | 7.50       |
| Did not get to meet the specified physician                          | 3.33       |
| Did not receive a clear counsel from the physician                   | 0.83       |
| Parking space  | 35.83      |
| Inadequate time with the physician                                   | 10         |
| Doctor's availability for the patient                                | 0.83       |
| No problem   | 12.50      |
| Others   | 3.33       |
| Feelings if treatment fails  |            |
| Accept the fact and live life to the fullest                         | 43.33      |
| Understand that the possibility of success is low                    | 16.67      |
| Sad  | 37.50      |
| Extremely disappointed   | 2.50       |
| Any attempt to get further treatment if this present treatment fails |            |
| Yes  | 75         |
| No   | 23.30      |
| No answer  | 1.70       |
| Emotional disturbance present  |            |
| Present  | 30         |
| Not Present  | 70         |

of the infertility treatment and success which ranked accordingly.

Table 3 shows the hypothesis that there were no significant differences in the determinant factors in the husband and wife. By testing the hypothesis using the *t*-test and the level of significance set at 0.05, the determinant factors of both husband and wife did not differ because of the value of  $p > 0.05$  and it was not statistically different. Another supporting reason to accept the null hypothesis was that the anxiety of both husband and wife may appear closely related because both may share similar responsibilities in undergoing for the infertility treatment which resulted in the mean value not being statistically significant.

## DISCUSSION

In a study by Nadaoka T, et al(5), women undergoing *in vitro* fertilization and embryo transfer with higher levels of anxiety remain in the introverted stage of the grief process. They have a more positive attitude toward the treatment, a more pessimistic

outlook on the possibility of successful pregnancy and feel more agitation. In the *in vitro* fertilization and embryo transfer, women play a major role and bear much distress in the various stages of the treatment such as during the time of oocytes retrieval and pregnancy test; also the uncertainty of the treatment procedures, which was waiting to find out whether each stage of IVF had succeeded or failed. The findings of this study were similar to Boivin et al (2) which stated that the most important psychological determinant of reactions during IVF was the uncertainty of the treatment procedures. The observed mean scores of the outcome of infertility treatment for women was higher than men probably because women share more pain and more side effects of infertility than men. This was in accord with the findings of Leiblum et al that the disappointment associated with unsuccessful cycles can be considerable especially for women(6-10).

The results from the present study revealed that the major determinant factors among the husband

**Table 2. Determinant factors of anxiety in the husband and wife.**

| Factors that cause anxiety to the husband and wife                               | Mean | SD   |
|--|------|------|
| Inadequate time to consult with the physician/nurse                              | 3.25 | 1.17 |
| Process of diagnostic procedures   | 2.94 | 1.18 |
| Waiting time to meet with the physician  | 2.90 | 1.10 |
| Information on infertility treatment and diagnostic procedures                   | 2.78 | 1.08 |
| Information regarding general health examination                                 | 2.47 | 1.04 |
| Availability of physicians to answer the patient's inquiries and concerns        | 2.52 | 1.05 |
| Side-effects of infertility treatment  | 3.29 | 1.16 |
| Assurance by physicians or medical practitioners regarding infertility treatment | 2.16 | 0.96 |
| Appropriateness of diagnostic procedures   | 2.30 | 0.88 |
| Outcome of infertility treatment   | 3.25 | 1.16 |
| Equipment used for infertility treatment   | 2.05 | 0.89 |
| Expenses for infertility treatment   | 2.64 | 1.20 |
| Complication in treatment procedures   | 2.67 | 1.09 |
| Possibility of not succeeding  | 3.06 | 1.24 |
| Further appointment with physician   | 2.29 | 0.98 |

**Table 3. Hypothesis testing of determinant factors.**

| Status  | N  | Mean  | SD    | SD <sup>2</sup> | T-value | Sig.T |
|---------|----|-------|-------|-----------------|---------|-------|
| Wife    | 60 | 2.742 | 0.665 | 0.442           | 0.580   | 0.563 |
| Husband | 60 | 2.666 | 0.758 | 0.574           |         |       |

and wife did not reveal any great difference. The wife tended to have a higher mean than the husband, which was found to be the outcome of the infertility. This is probably because women bear most of the physical and psychological pain and it would be stressful to restart the whole IVF program again as well as the high costs of the treatment. Therefore, each step is crucial to the success so women would look forward to a positive result. For the husband, the major factors, which equally ranked were inadequate time to consult with the physician/nurse, side-effects of the

infertility treatment, the possibility that the procedure may not succeed and the infertility cannot be treated the possibilities to succeed/infertility cannot be treated. The reason why the husband scored high anxiety was because the husband is the breadwinner of the family and it would be essential to know the progress as well as being able to consult with the physician regarding his wife's health. Moreover, to have an idea of the rate of success or failure would be crucial for the husband to give psychological support to his wife and also to prepare for the forthcoming expense.

## REFERENCES

1. Callan VJ. The personal and marital adjustment of mothers and voluntarily and involuntarily childless wives. *J of Marriage and the Family* 1987; 49: 847-56.
2. Boivin J, Andersson L, Skoog-Svanberg A, et al. Psychological reactions during *in vitro* fertilization similar response pattern in husbands and wives. *Hum Reprod* 1998; 13: 3262-7.
3. Anantavuthikanon S. Psychological factors in infertile female at infertility clinic. Published master's thesis, Chulalongkorn University, Bangkok, Thailand 1992: 119.
4. Platt JJ, Ficher I, Silver MJ. Infertile couples: Personality traits and self-ideal concept discrepancies. *Fertil Steril* 1973; 24: 972.
5. Nadaoka T, Mori E, Morioka Y, Saito H. Anxiety of infertile women undergoing IVF-ET: Relation to the grief process (Medscape Medline Abstract). Abstract from: *Gynecol Obstet Invest*, ISSN: 1997; 378-7346; 44: 157-62.
6. Leiblum S, Kemmann E, Colburn D, et al. Unsuccessful *in vitro* fertilization: A follow-up study. *J In Vitro Fertil Embryo Transfer* 1987; 4: 46-50.
7. Leiblum S, Kemmann E, Lane MK. The psychological concomitants of *in vitro* fertilization. *J Psychomo. Obstet Gynecol* 1987; 6: 165-78.
8. Abbey A, Andrews FM, Halman LJ. Gender's role in response to infertility. *Psychol Women Q* 1991; 15: 295-316.
9. Beaurepaire J, Jones M, Thiering P, et al. Psychosocial adjustment to infertility and its treatment: Male and female responses at different stages of IVF/ET treatment. *J Psychosom Res* 1994; 38: 229-40.
10. Daniluk J. Gender and Infertility. *Infertility: Psychological issues and counseling strategies*. New York: Wiley; 1997: 103-28.

## ปัจจัยกำหนดถึงระดับความกังวลของคู่สมรสที่มีบุตรยากได้รับการรักษาด้วยการปฏิสนธิ นอกร่างกายและย้ายฝากตัวอ่อนที่โรงพยาบาลจุฬาลงกรณ์

วไลกร พรหมโยธี, วทม\*, ประมวล วีรุตมเสน, พบ\*\*

ในช่วงเวลาวันที่ 1 มกราคม 2543 ถึง 31 พฤษภาคม 2543 ผู้วิจัยได้ศึกษาถึงระดับปัจจัยของการตัดสินใจและความกังวลของคู่สมรสที่มีบุตรยาก 60 คู่มีมาขอรับการรักษาเพื่อการมีบุตรโดยวิธีการปฏิสนธินอกร่างกาย (เด็กหลอดแก้ว) โดยตั้งคำถามตามการศึกษามาก่อนของ Personal and Health Data, Cornell Medical Index และ Determinant factors of Anxiety ผู้เข้าร่วมการศึกษามีอายุระหว่าง 36-40 ปี จบปริญญาตรีและมีรายได้ 10,000-20,000 บาทต่อเดือน ส่วนมากทำงานของบริษัทเอกชน คู่สมรสส่วนมากต้องการมีบุตรเนื่องจากต้องการเพื่อให้เป็นครอบครัวที่สมบูรณ์พร้อมกับมีความกังวลต่อการรักษา คู่สมรสส่วนมากมีพื้นฐานทางอารมณ์ที่ดี จากการศึกษาพบว่าหญิงมีความกังวลมากกว่าชาย ข้อกำหนดปัจจัยความวิตกกังวลใจ มาจากอาการข้างเคียงของการรักษาพยาบาล แพทย์/พยาบาล ใช้เวลาไม่เพียงพอต่อการให้คำปรึกษา ผลสำเร็จของการรักษาลดลงจนกระบวนการวินิจฉัย

ผลของการศึกษาจะช่วยเป็นแนวทางในการปรับปรุงให้การบริการที่ดีขึ้นและก่อให้เกิดความเข้าใจซึ่งกันและกันระหว่างแพทย์กับคู่สมรสต่อการคาดหวังของการรักษาโดยกระบวนการปฏิสนธินอกร่างกาย

**คำสำคัญ :** ความกังวล, เด็กหลอดแก้ว

วไลกร พรหมโยธี, ประมวล วีรุตมเสน

จดหมายเหตุทางแพทย์ ๔ 2546; 86: 425-429

\* ภาควิชาจิตวิทยา การให้คำปรึกษา, มหาวิทยาลัยอัสสัมชัญ, กรุงเทพฯ ๔ 10240

\*\* หน่วยชีววิทยาการเจริญพันธุ์, ภาควิชาสถิติศาสตร์-นรีเวชวิทยา, คณะแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย, กรุงเทพฯ ๔ 10330