

# What kind of care and support do infertile women undergoing fertility treatment in Greece expect? A questionnaire survey

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## Summary

The aim of this study was to identify infertile women's expectations and perceived importance of professional psychosocial services and to identify the predictors of their expectations. The study included 404 infertile women. Most women sought more medical information and more emotional support than what was offered, mainly by the hospital staff. Less than half the women rated psychosocial services as important. The main predictors of the importance of ratings were high fertility-related stress, low provision of social support, low social class and male infertility factor. A provision for information regarding the medical and psychosocial aspects of infertility should be included in routine care in fertility clinics. Although it seems possible to meet the emotional and psychosocial needs of less distressed women through information and support, it is necessary to offer professional psychosocial services to more distressed women.

**Key words:** Expectations; Infertility; In vitro fertilization; Psychosocial services.

## Introduction

Infertility is the inability to conceive or carry a pregnancy to a live birth. It is estimated that one in six couples seeks help because of problems in conceiving [1]. In addition, 1.3-4.2% of babies born in different European countries were conceived after assisted reproduction treatment [1]. Infertility and its treatment can be a very stressful experience. Since parenthood is perceived in most cultures as having a central role in society, infertile couples seek a solution to their childlessness by using medical interventions. During the past few years in vitro fertilization (IVF) has become one of the standard infertility treatments and provides the hope of pregnancy for infertile women, but does not always turn this hope into reality. Infertility treatment is often experienced as a psychological strain [2]. While dramatic progress has been achieved in relation to the diagnosis and treatment of the organic components of infertility, less attention has been paid to the emotional dimensions of this life crisis. The psychological impact of new reproductive treatments should not be understated. The provision of psychosocial interventions for infertile couples has been recommended since Eck Menning [3] directed research attention to emotional burden as a consequence of infertility rather than, as had been the emphasis until then, a cause of infertility. Some countries have legislation governing the provision of counselling for assisted conception treatments. According to the Human Fertilization and Embryology Authority (HFEA), which regulates assisted reproduction in the UK, psychosocial counsel-

ing must be offered to any patient seeking IVF [4]. As it has been described in the HFEA code of practice, the purpose of psychosocial counselling is to provide patients with emotional support and help with decision-making. Today, all licensed IVF clinics in the UK are required to offer patients counselling [5].

**Background:** The results of previous studies on patient satisfaction with IVF centres, suggest that many patients are dissatisfied with the psychosocial services offered before, during and after treatment [6-9]. Moreover, the HFEA recommendation is consistent with the infertile couple's expectations in receiving more psychosocial help and professional psychological counselling [8]. In a study by Laffont and Edelmann [7] it was found that both men and women feel that a routinely provided information booklet about the practical aspects of IVF would improve knowledge of and passage through an IVF cycle. In the same study it was found that women expressed a desire for some form of counselling or support during IVF treatment. Glover and colleagues [10] investigated the expectations and motivations of infertile men who participated in an IVF program. The majority of men (75%-88%) expected an information provision about their specific problem and possible therapeutic alternatives and help with decision-making processes. Fifty-two percent of them considered it important to discuss their feelings about infertility as well as the way infertility was treated. In a French study [11], results showed the need for psychological counselling after a diagnosis of infertility. Post-treatment counselling seemed to be particularly important. Lack of support at that time influenced the way couples regarded the whole support assistance provided during treatments. Similar conclusions have come

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from other researchers [2, 12]. Dyer *et al.* [13] recognized the importance of health education and counselling as well as the integration of these services into fertility management, especially in the developing world. In a study by Schmidt *et al.* [14], it was shown that the majority of infertile couples considered important the provision of information, regarding test results and potential treatment options. However, fewer patients rated the provision of professional psychosocial services as important. In a previous Greek study [15] it was found that infertile women who were undergoing fertility treatment asked for more emotional support and medical information.

Thus, it seems particularly important to identify the factors that predict women's expectations concerning psychosocial services. Past research has shown that infertile couple's expectations regarding IVF were influenced by their psychological status; particularly those who attended support groups [16] or expressed a wish for counselling services [7] seemed to experience more personal and/or marital stress than those who did not. Additionally, patients who drop out of counselling tend to experience less stress than those who continue [17]. In a study by Boivin [18], it was found that less distressed patients reported that the coping resources available to them were sufficient to manage the strains of infertility. Boivin *et al.* [19] found that the core predictor of a greater need for psychosocial care was high infertility-related stress. A recent study found that the main predictor of perceived importance regarding patient-centred care and psychosocial care was high infertility related stress in the marital, personal and social domain [14].

**Study aims:** The aims of the study were: a) to identify infertile women's expectations and perceived importance of professional psychosocial services and b) to identify the factors that predict women's expectations and perceived importance of professional psychosocial services. The considered factors were demographic (age, social class), medical (duration of infertility, number of previous therapies, etiology of infertility) and psychosocial (state and trait anxiety, fertility related stress, family/friend support). Selection of factors was based on the fact that these factors have been found to impact women's expectations and perceived importance of professional psychosocial services in previous studies [7, 18-20]. The study hypotheses were that: a) women would seek more information regarding medical and psychosocial aspects of infertility and more emotional support by the hospital staff b) would perceive the participation in support groups as the most important psychosocial service and c) the selected factors would influence women's expectations and perceived importance of professional psychosocial services.

## Materials and Methods

This study is a descriptive, cross-sectional survey, which involved collecting data from the participants by using two questionnaires.

**Study setting:** The study took place in a public fertility clinic in Athens, Greece. This clinic is one of the largest clinics in Greece and covers many geographical regions (capital city and some rural areas). The staff working in infertility clinics in Greece include obstetricians, midwives, laboratory personnel and secretaries. There are no psychologists, social workers or sex therapists employed at public IVF clinics. Psychological counselling regarding infertility and fertility treatment is not mandatory in Greek public clinics.

**Study procedure and participants:** A random sample of infertile women undergoing fertility treatment in the fertility clinic of the hospital recruited. According to the inclusion criteria, the participants chosen: a) were able to read and write in the Greek language in order to have the ability to complete the questionnaires, b) were married, and c) have unsuccessfully tried to conceive a child with natural methods for more than one year. Eligible participants received an envelope immediately before their fertility treatment. The envelope contained an information letter which explained the aim and expected benefits of the study and two questionnaires. The questionnaires were returned to the researcher who was not an employee of the clinic. Data were collected over an 11-month period, from November 2005 to September 2006. During the recruitment period, 452 women were asked to participate in the study. A total of 410 women (90%) agreed to take part and finally 404 women (89%) returned completed questionnaires.

**Study instruments:** The research instruments were two self-administered questionnaires. The participants completed the COMPI questionnaire which was developed and validated by Schmidt *et al.* [14] and the Greek version of the State-Trait Anxiety Inventory (STAI) questionnaire [21].

The STAI was used to measure anxiety in women undergoing fertility treatment. The STAI assesses both 'state' and 'trait' anxiety. *State anxiety* is defined as an unpleasant emotional condition that emerges in case of threatening demands or dangers. *Trait anxiety*, on the other hand, reflects the stable tendency of an individual to respond with state anxiety in the anticipation of threatening situations. The state scale consists of 20 items that ask people to describe how they feel at a particular moment in time rated on a 4-point scale ranging from *not at all* to *very much so*. The trait scale consists of 20 statements describing how people generally feel (e.g., confident) rated on a 4-point frequency scale ranging from *almost never* to *almost always*. Total scores for state and trait anxiety range from 20 to 80 [22], whereas the published normative score by non-pregnant women for state anxiety it is 35.2 (SD 10.6), for trait anxiety it is 34.8 (SD 9.2) and for people with diagnosed anxiety disorder it ranges between 47 and 61 [22]. The COMPI questionnaire was adapted from a previous Danish study [14, 23]. Details about the development of this measure are available in other studies [14, 24]. However, some information about the COMPI questionnaire is also presented in this article. The COMPI questionnaire booklet contains questions about reproductive history, psychosocial aspects of infertility (including fertility problem stress, ways of coping, communication and social relations), health and well being. Only those questions relevant to the present study are described in this article.

A total number of 14 items from the COMPI questionnaire were used to assess sociodemographic profiles of participants. Sociodemographic background information included variables concerning age, years of marriage, occupational social position and educational level. Education level is described by three categories: low, medium and high. Low education level includes

primary education, medium education level refers to secondary education and high educational level to university/polytechnic school degree or higher. A measure of occupational social position was used. Based on this measure, social position was recoded into three levels: from social class I (high level) to social class III (low level). High social level includes professionals and executives, medium social level refers to white-collar employees and skilled workers, and low social level to all unskilled workers and participants supported by the Social Benefit Program. Medical background information included information regarding duration of infertility, former children, diagnosis of infertility and past fertility treatment. A total number of 16 items from the COMPI questionnaire were used to measure fertility problem stress. Fertility problem stress was measured by using three subscales referring to personal, social and marital domains. These subscales are described in detail by Schmidt *et al.* [14]. Infertility-related stress in the personal domain (subscale of six items) reflected the stress that infertility had produced on the person's physical and mental health. Infertility-related stress on the social domain (subscale of four items) assessed the extent to which infertility had caused strain on social relations with friends, family and colleagues. Infertility-related stress on the marital domain (subscale of four items) assessed the stress that infertility had produced on the marital and sexual relations. The response categories from the subscales of personal stress, social stress and two items from marital stress was a four-point Likert response scale from (1) none at all to (4) a great deal. The response categories from the remaining two items of marital stress were a five-point Likert response scale from (1) strongly disagree to (5) strongly agree. The range differed according to the subscale: personal stress (range 0-20), social stress (range 0-12) and marital stress (range 0-14). Total scores were calculated by summing the relevant items. Higher scores indicated higher personal, social and marital stress. Four items assessed the importance of medical care, four items assessed the importance of patient-centred care and four items assessed the importance of a provision of professional psychosocial services. The responses for all items about importance ratings were (1) important, (2) less important and (3) not important. Although importance ratings were rated on a 3-point scale, they were finally dichotomized (important versus less important and not important) for statistical analysis purposes. Reliability of the subscales of COMPI questionnaires were assessed by Cronbach's alpha. In this study the alpha coefficient was 0.71 for the personal stress subscale, 0.70 for the social stress subscale and 0.72 for the marital stress subscale. These values were within acceptable limits. The psychometric properties of the STAI questionnaire have been evaluated and it has been demonstrated that the STAI questionnaire is a reliable and valid measure.

*Translation and questionnaire pilot:* The questionnaires in English were translated into Greek by two independent bilingual persons and then translated back to English by two other bilingual persons. After the translation was conducted, the researcher checked the translation in order to minimize misunderstandings concerning especially the terminology. In this study, the questionnaires were piloted using cognitive interviewing methods with the objective of examining the understanding of the questions, in order to eliminate any ambiguities in questions and to predict the timing for completion. The sample of the cognitive testing consisted of 40 women with different demographic characteristics to ensure the representation of the main sample. The returned questionnaires were fully and appropriately completed and the response choices were adequate and understandable.

*Ethical considerations:* Permission to complete this study was obtained from the ethical and scientific committee of the hospital. The researcher approached each participant who wanted to participate in the study. Participants were given the opportunity to ask for clarification and were assured about the anonymity and confidentiality of their responses and about their right to withdraw at any time, even if they decided to take part in the study. Participants were also assured that the collected data would be used only for the purpose of the study. The clinic staff did not know whether or not a woman participated in the study. It was assumed that completing the questionnaires equated with consent.

*Statistical analysis:* Quantitative data were analyzed using SPSS version 13.0. Data analysis involved descriptive statistics to calculate percentages, frequencies, means and standard deviations. Logistic regression analysis was used to determine the predictors of importance ratings (important versus less important and not important) and of intentions to use psychosocial services (yes versus other responses). The predictor variables that were used for each logistic regression analysis were: age, social class, infertility duration, number of previous therapies, infertility etiology, personal stress, social stress, marital stress, marital benefit, state anxiety, trait anxiety, friend and family support. The anxiety- and fertility-related stress scores were entered into the regression analysis as continuous variables. Odds ratios (OR) and 95% confidence intervals (CI) were calculated from the logistic regression analysis for each predictor variable.

## Results

*Characteristics of participants:* During the recruitment period, 452 women were asked to participate in the study and finally 404 (89% response rate) completed the questionnaires. The mean age of participants was 36.9 years (SD 4.1 and range 25-47). Thirty-six percent of women had tertiary education (high educational level), 48% of women had high school education (medium level) and 16% of women had less than a high school education (low level). Most women (72%) were working and 28% were housewives. Forty-nine percent of women had high social class, 27% had medium social class and 13% had low social class. Participants reported a mean duration of infertility of two years (SD 0.9 years) and a mean number of previous treatments of 2.4. The majority of participants (88%) had prior experience with fertility treatment. Diagnosis of infertility was recoded into female infertility, male infertility, mixed infertility (both female and male infertility) and idiopathic infertility (unknown etiology). One hundred and two women had female factor infertility, 150 women had male factor infertility, 90 women had combined infertility and 62 women had unknown factor infertility. Table 1 shows the sociodemographic, medical and treatment characteristics of the participants.

## Descriptive results

*Expectations about medical and patient-centred care:* Almost all women rated receiving medical information (test results and potential treatment options) from medical staff as important and only 35% of women rated receive-



Table 1. — *Sociodemographic, medical, and treatment characteristics of the participants.*

Participant characteristics	Participants (n = 404)
<b>Sociodemographic characteristics</b>	%
Age (years)	
≤ 30	6.0
31-35	27.0
≥ 35	67.0
Occupational social class	
High	49.0
Medium	27.0
Low	13.0
Outside classification	11.0
<b>Medical characteristics</b>	
Diagnosed female infertility	25.0
Diagnosed male infertility	37.0
Diagnosed mixed infertility	22.0
Unknown infertility factor	16.0
	Mean (SD)
No. of previous treatments, mean (SD)	2.4 (2.0)
Duration of infertility, mean (SD)	2.1 (0.9)

ing information about adoption as important. The majority of women found it important to receive written information. The vast majority of women found the provision of patient-centred care important and specifically women sought the offer of emotional support (concern and understanding) by the hospital staff and a provision of written information about psychosocial aspects of infertility as important. Although 76% of women stated that a provision of information about psychosocial aspects of infertility would be important, only 30% of women stated that a provision of information about associations which support infertile couples was important for them. Table 2 shows the expectations about medical and patient-centred care that was rated as important (versus less important and not important) by women.

Table 2. — *Reasons for seeking treatment and expectations about medical and patient-centred care rated as important by women (n = 404).*

Variable	Women (%)
<b>Reasons for seeking treatment</b>	
To find a cause	31
To get pregnant	99
To have a child	86
For having tried everything	50
For my self	41
For my partner	37
<b>Expectations about medical care</b>	
Offer information for test results	87
Offer information for treatment options	95
Offer written information (leaflets)	81
Offer information about adoption	18
<b>Expectations about patient-centred care</b>	
Show more concern	83
Show understanding	90
Offer written information about psychosocial aspects of infertility	76
Offer contact information for infertility associations	30

*The importance of a provision of professional psychosocial services:* Women were asked to rate the importance of specific professional psychosocial services that were not offered at the fertility clinic at the time of data collection. The proposed psychosocial services were: participation in seminars about infertility, participation in support groups, and attendance in sessions with psychologists and with sex therapists. Table 2 shows the proportion of women who rated the provision of professional psychosocial services as important and the proportion of women who stated that they would participate if these services were available at the fertility clinic. From our results it was demonstrated that less than half the women rated a provision for psychosocial services as important.

*Anxiety- and fertility-related stress:* It was found that the mean level of participants' state anxiety was 44.5 (SD 9.5) and the mean level of trait anxiety was 41.8 (SD 7.1). These were higher in comparison to published normative scores of state and trait anxiety (mean 35.2 and 34.8, respectively) [22]. Evaluating the results of this study within the ranges for low and high levels for each subscale of fertility problem stress as suggested by Schmidt *et al.* [14, 20], the levels of personal (range 0-20, mean 7.95), social (range 0-12, mean 1.9) and marital stress (range 0-14, mean 3.1) were low.

*Predictors of women's expectations for medical care, patient centred care and psychosocial services:* Logistic regression analysis was computed in order to examine whether demographic (age, social class), medical (duration and etiology of infertility, number of previous therapies and duration of therapy) and psychosocial (state and trait anxiety, personal, social and marital stress and marital benefit, social support) variables were associated with women's expectations for medical care, patient-centred care and psychosocial services.

Table 3. — *Expectations and intentions to use professional psychosocial services by women (n = 404).*

Variable	Women (%)
<b>Consideration of professional psychosocial services as important</b>	
Participation in seminars about infertility	37
Participation in support groups	44
Consultation with psychologist	41
Consultation with sex therapist	19
<b>Intention to use professional psychosocial services</b>	
Seminars about infertility	34
Support groups	42
Psychologist	36
Sex therapist	17

Table 3 illustrates the women's expectations about medical and patient-centred care that are provided in the fertility clinic. The major findings that have emerged concerned the provision of medical and psychosocial information, staff's supportive attitude and the provision of information concerning adoption. In most cases, higher levels of stress and anxiety and lower social support were

Table 4. — Odds ratios for demographic, medical, and psychosocial predictors of importance ratings for medical and patient-centred care.

Predictors	Medical care				Patient-centred care		
	Information for results	Written information	Adoption information	Staff concern	Staff understanding	Psychosocial information	Infertility associations
<i>Demographic</i>							
Age	1.08 (0.98-1.20)	1.02 (0.94-1.10)	<b>1.08 (1.01-1.15)</b>	1.04 (0.95-1.14)	1.11 (0.99-1.25)	0.93 (0.86-1.00)	0.97 (0.91-1.03)
Social class I	0.64 (0.16-2.51)	1.25 (0.76-1.78)	0.78 (0.32-1.85)	1.78 (0.48-6.58)	1.05 (0.92-1.08)	2.35 (0.71-7.82)	1.65 (0.70-3.84)
Social class II	1.40 (0.23-8.63)	0.95 (0.88-1.04)	2.12 (0.80-5.60)	1.85 (0.45-7.56)	0.78 (0.54-1.34)	2.02 (0.56-7.25)	<b>3.13 (1.23-7.99)</b>
Social class III	2.53 (0.38-16.7)	1.43 (0.95-2.34)	<b>10.35 (1.88-56.7)</b>	<b>7.84 (1.79-34.2)</b>	0.89 (0.76-1.55)	<b>4.24 (1.07-16.6)</b>	1.01 (0.35-2.91)
<i>Medical</i>							
Infertility duration	<b>0.73 (0.60-0.89)</b>	1.04 (0.96-1.14)	0.96 (0.90-1.03)	<b>0.85 (0.74-0.99)</b>	0.93 (0.80-1.07)	0.96 (0.87-1.06)	1.05 (0.97-1.13)
No of therapies	1.00 (0.79-1.27)	0.85 (0.71-1.02)	<b>0.87 (0.76-0.99)</b>	<b>0.74 (0.58-0.94)</b>	0.80 (0.61-1.04)	<b>0.82 (0.68-0.99)</b>	<b>0.75 (0.65-0.87)</b>
Duration of therapy	0.99 (0.59-1.66)	<b>0.56 (0.34-0.91)</b>	1.25 (0.92-1.70)	0.84 (0.48-1.47)	0.87 (0.52-1.47)	0.95 (0.68-1.33)	<b>2.00 (1.34-2.99)</b>
Female infertility	0.73 (0.29-1.85)	1.72 (0.35-1.67)	0.49 (0.18-1.32)	1.78 (0.34-9.13)	0.49 (0.18-1.38)	<b>6.31 (1.20-32.9)</b>	0.62 (0.22-1.75)
Male infertility	1.02 (0.61-1.08)	0.99 (0.72-1.36)	0.59 (0.21-1.59)	0.99 (0.18-5.31)	1.02 (0.92-1.10)	4.88 (0.93-25.3)	1.06 (0.37-3.03)
Mixed infertility	1.02 (0.99-1.06)	0.89 (0.73-1.08)	1.12 (0.34-3.72)	<b>8.85 (1.43-54.5)</b>	0.73 (0.59-1.85)	5.51 (0.88-34.6)	1.97 (0.60-6.44)
Idiopathic infertility	0.95 (0.33-2.75)	0.18 (0.22-1.58)	0.67 (0.45-1.34)	0.95 (0.24-1.67)	1.25 (0.95-1.76)	1.12 (0.76-1.87)	1.17 (0.67-1.35)
<i>Psychosocial</i>							
State anxiety	<b>1.12 (1.07-1.28)</b>	0.98 (0.93-1.02)	1.01 (0.98-1.05)	0.96 (0.91-1.05)	1.02 (0.97-1.10)	<b>1.08 (1.02-1.16)</b>	<b>1.06 (1.03-1.11)</b>
Trait anxiety	0.92 (0.83-1.01)	1.05 (0.95-1.07)	1.05 (0.95-1.05)	0.97 (0.91-1.04)	<b>1.19 (1.02-1.27)</b>	0.99 (0.93-1.05)	0.97 (0.92-1.02)
Personal stress	1.09 (0.96-1.25)	0.94 (0.85-1.05)	<b>1.11 (1.07-1.22)</b>	0.96 (0.85-1.08)	<b>1.15 (1.01-1.32)</b>	1.02 (0.93-1.13)	0.98 (0.89-1.07)
Social stress	<b>1.15 (1.08-1.20)</b>	<b>1.05 (1.02-1.11)</b>	0.90 (0.78-1.04)	1.02 (0.83-1.08)	<b>1.29 (1.12-1.43)</b>	<b>1.17 (1.06-1.29)</b>	0.96 (0.83-1.11)
Marital stress	<b>1.49 (1.20-1.86)</b>	0.95 (0.79-1.14)	0.89 (0.77-1.03)	0.98 (0.81-1.19)	0.92 (0.71-1.19)	0.84 (0.70-1.01)	<b>1.17 (1.05-1.23)</b>
Marital benefit	<b>1.85 (1.36-2.53)</b>	1.01 (0.84-1.22)	<b>0.80 (0.66-0.96)</b>	<b>0.73 (0.59-0.90)</b>	1.01 (0.84-1.22)	1.04 (0.86-1.25)	0.91 (0.77-1.08)
Family support	1.00 (0.65-1.55)	0.58 (0.38-1.23)	1.09 (0.80-1.46)	0.76 (0.50-1.15)	0.97 (0.63-1.47)	0.67 (0.46-0.98)	1.00 (0.75-1.31)
Friend support	<b>0.34 (1.19-0.61)</b>	<b>1.58 (1.06-2.36)</b>	<b>0.62 (0.45-0.85)</b>	<b>0.61 (0.41-0.91)</b>	<b>0.71 (0.45-0.88)</b>	<b>1.48 (1.03-2.12)</b>	<b>0.68 (0.50-0.92)</b>

Odds ratios with p value &lt; 0.05 in bold.

associated with greater expectations regarding the provision of information and staff support. Higher importance ratings for medical information were observed among women with fewer years of infertility, higher state anxiety, higher social and marital stress, and lower support from friends. Moreover, higher importance ratings for psychosocial information were observed among women with female infertility, lower social class, smaller number of therapies, higher state anxiety and social stress and lower family support. It has also been found that lower social class, fewer years of infertility, higher levels of trait anxiety, personal and social stress, lower marital benefit and lower support from friends were the predictors of higher importance ratings for staff support. Older women of lower social class with fewer number of therapies, having higher levels of state anxiety, personal and marital stress, and lower levels of social support were more likely to attach importance to information regarding adoption and infertility associations. Table 4 illustrates the OR for women's perceived importance of psychosocial services in relation to the demographic, medical and psychosocial predictors. The major findings that have emerged concerned the perceived importance of sex therapist and psychologist consultations. In most cases, higher stress and lower social support were associated with higher importance ratings of psychosocial services. Higher importance ratings concerning infertility seminars were observed among women with higher personal stress and lower family support. Higher importance ratings of psychologist consultations were observed among women with higher state and trait anxiety, lower family or/and friend support and longer duration of infertility. The predictors of higher importance ratings of sex therapist consultation were

low social class, male infertility factor, the higher state anxiety and higher marital stress. It was unexpectedly found that women with fewer therapies rated sex therapist counselling as important.

## Discussion

The study has three limitations. Firstly, although the great efforts to be comprehensive and to appraise all predictors of women's expectations, it is possible that related domains were omitted. The second limitation of the current study is that it involves only one public hospital in Athens. A further limitation of the study is that the sample consisted of only patients who did not have to pay for their treatment. It is possible that patients who attend private clinics have different expectations of services. Our findings need to be replicated in samples from private clinics. The study has several strengths: the questionnaires that were used in this study were evaluated and it was demonstrated that they are reliable and valid measures, the response rate was high (97%) ensuring a large sample size (n = 404), all items in the questionnaires were answered by almost all participants and all questionnaires were validated through pilot studies. These strengths ensure the reliability of study findings.

The cardinal findings of our study showed that most women sought more medical information (both written and verbal) and desired more emotional support which is offered mainly by the hospital staff and not by external sources (associations). From our results it was also demonstrated that less than half of the women rated the provision of psychosocial services as important. Similarly, in a recent study [5], in patients who did not

receive counselling, the main reasons cited were: 'felt I can cope on my own' (37%), and 'did not think it would be beneficial' (15%).

In our study, the main predictors of importance ratings of psychosocial services were the high fertility-related stress and the low provision of social support. Other factors, such as women's social class, etiology of infertility and infertility duration were also associated with women's expectations.

The hypothesis that women would seek more information regarding medical and psychosocial aspects of infertility was supported by this study. Many women expressed their need for an information provision. Almost all women asked for more medical information (test results and alternative therapies) and 76% of them expressed their need to receive more information about psychosocial impact of infertility. Therefore, it can be hypothesized that women's expectations regarding an information provision were not fulfilled. This could influence the degree of their satisfaction concerning fertility treatment. Previous studies have also reported low levels of satisfaction about information given to infertile couples [6, 8, 12, 13, 25]. Laffont and Edelmann [7] in their study reported that the use of information booklets about the practical and psychological aspects of IVF, improved acceptability of infertility treatment and care as well as patient knowledge. Results of this study are in keeping with the above findings, as respondents stated their need for a provision of written information and pamphlets about the medical and emotional consequences of childlessness. A provision of information was particularly important to women with higher levels of anxiety and fertility-related stress, lower social support, lower social class and infertility due to female factors. This finding was expected since women who experienced extensive infertility stress, did not get enough social support, and had lower social class seem to need more information in order to cope with infertility stress.

The hypothesis that women would seek more emotional support by the hospital staff was supported by the findings of the study. The results demonstrate that almost all participants, expected the medical and nursing staff of the fertility clinic to have a supportive attitude towards them. They wished that the hospital staff would ask about their feelings and show understanding as has been previously found [9, 15, 26, 27]. It has also been found that the supportive attitude of staff was important for those women who were of lower social class, had fewer years of infertility, and experienced higher levels of anxiety and fertility-related stress and lower marital benefit and social support. This finding was expected since women who did not get enough social and marital support and experienced extensive infertility burden seem to need more staff support in order to cope with infertility strains. One key predictor of adjustment to fertility treatment is the strength of the marital relationship, probably because of the need of support among spouses. It has been suggested that medical and nursing staff may be called upon to provide this support when there is marital strife [28]. Hirsch and

Hirsch [29] found that people experience more support as their period of childlessness increases. Possibly, in the longer term involuntary childlessness people have learned how to deal with their infertility and how best to involve their social environment in that situation. Therefore, infertile women with shorter duration of infertility may ask for more staff emotional support because they have not learned how to involve their social environment into their fertility problem. Social support seems to have a protective effect, resulting in less clinical distress [30, 31]. In a recent study, it was shown that infertile couples seeking psychological help are characterized by high levels of psychological distress, primarily in women and that the women's distress seems to be more important for attending infertility counselling than that of the men [32].

It is noteworthy that although the vast majority of women felt that it was important to have a patient-centred approach in the fertility clinic, less than half the women rated the provision of psychosocial services as important. When participants were asked about the perceived importance of psychosocial services, 44% of them rated participation in support groups as important, 41% consultation with psychologists, 37% participation in infertility seminars and 19% consultation with a sex therapist. While findings with respect to women's importance ratings were consistent with those of previous infertility studies [8, 9, 12, 14, 33], they were unexpected since great emphasis is given by the clinic staff on the provision of professional psychosocial services. This finding seems to suggest that it is possible to meet women's emotional and psychosocial needs without professional psychosocial services but through a supportive staff attitude. However, it has been found that even if women do not seek psychosocial support and counselling they are reassured to know that these services are available to them [7, 12, 34].

One possible explanation for the low importance ratings about a provision of professional psychosocial services could be that women may not consider themselves sufficiently distressed or they probably received enough social support from informal sources (family and friends) in order to cope with their fertility problem. Although infertility can be very distressing for women, external support from informal sources (family and friends) could mitigate emotional and psychological burdens such that only a few women will need professional psychosocial care [33]. The predictors of importance ratings for professional psychosocial services were similar to those of patient-centred care and as expected were linked to high levels of anxiety and fertility-related stress, low grade of family and social support and low social class. These data suggest that anxiety, stress and social support mainly determine who will ask for professional psychosocial support. Therefore, it could be concluded that women may not consult with psychologists/counsellors when the support that they receive from their own network of family and friends is sufficient for the level of stress they experience. As Boivin [18] suggested, patients consult psychologists because they cannot manage their distress and not because they experience it. This finding is in

accordance with findings of comparative research [7, 14, 16, 19] in which it has been found that women attending support groups or/and counselling experience more fertility-related stress and less social support.

The hypothesis that women would perceive participation in support groups as the most important psychosocial service was supported by this study. The most preferred professional psychosocial service was participation in a support group. The group format seems to be beneficial for a number of reasons. People who experience the same problems understand each other better than anyone else. The main advantages of support groups, the common experience, and the exchange or sharing with other people with fertility problems have been reported through other studies as well [35]. No one can better understand your experiences than people having similar problems. In this type of intervention people make themselves feel better by seeing their problem as not being as bad as the problem of other infertile people [19].

Participants of advanced age and not adequately supported by their family and friends were more likely to rate participation in seminars, support groups and psychologist consultations as important. These findings were expected and suggest that the level of stress and anxiety partly determines who will participate in seminars, support groups and psychologist consultations. If childless people are not getting any social support or if they are dissatisfied with the support given, this may result in even more distress [36] and consequently may lead them to participate in support groups and psychologist consultations.

Low social class, male fertility factor, higher state anxiety and higher marital stress were predictors of higher importance ratings of sex therapist consultation. It seems that male factor infertility is more stressful for couples compared with the diagnosis of female infertility [37] and consequently increases participants' need to participate in consultations with a sex therapist. This finding was expected since the Greek society that places great emphasis on male fertility and manhood. However, in couples undergoing assisted reproductive treatment, men only reported marginally elevated depression scores compared to their controls [38].

It can be hypothesized that couples of high social class are usually well educated and can have more frequent and deeper discussions between partners about the intimate aspects of their relationship as a couple.

## Conclusions

Several recommendations can be made on the basis of the findings from this study. Clinics could offer information regarding medical and psychosocial aspects of infertility and could increase women's desire to 'take home' information by providing patients with pamphlets, booklets and other formats with information [33]. A provision of clear and sufficient information on the medical and psychosocial aspects of fertility treatment is fundamental for women to be able to make informed decisions about

fertility treatment. It is also recommended that information be provided repeatedly through the course of fertility treatment and not only at the beginning as it has been found that the ability to retain information varies significantly, and that information processing may be restrained by anxiety [39]. Health care professionals should dedicate more time to informing women who experience high infertility stress, and provide appropriate and understandable information tailored to the educational level of women. Such information has to be delivered in a sensitive way. Complicated medical terms unfamiliar to patients may confuse them and contribute to their stress. Based on the results of the present study, it can be recommended that the staff of a fertility unit must approach their patients in a supportive way. The team should be prepared to provide psychosocial care at each step of the fertility therapy. During treatment infertile people may feel the need of support towards continuing treatment (keeping hope of success, not giving up). Patient-centred care is the psychosocial care that must be provided by all members of medical and nursing staffs, as a part of their routine services at a fertility clinic. Conversely, psychological interventions based on definite theoretical frameworks (counselling) should be used, and trained mental health professionals should be the providers. Both types of care are essential and should be equally offered to all patients. Clinics could adopt a two-tier approach to psychosocial services aiming to provide written information to less distressed patients and counselling to more distressed patients [18]. Written psychosocial documentation and emotional support by hospital staff may meet the needs of most less distressed patients but may not be sufficient for the more distressed patients [33]. In such cases the assistance of professionals trained in infertility counselling and psychology should be enlisted. On the other hand, developing and evaluating different options such as education of fertility clinic staff in the psychosocial field can partly meet the psychosocial needs of less distressed patients. However, fertility clinic staff must recognize their limitations and try to avoid discussing subjects outside their competence. Another issue seems to be related to the question of who would perceive the use of professional psychosocial services as important. High levels of fertility-related stress may not be the best predictor of professional psychosocial needs, as stress is expected in response to infertility and fertility treatment [40]. It would seem that women with poor coping resources (internal and external) are not able to cope with the distress they experience. Such patients would be more likely to use professional psychosocial services. Fertility clinics must be proactive in identifying patient needs and fulfill them in the most appropriate way. However, clinics should be aware that patients might hesitate to use professional psychosocial services, even if they recognize the need for them. Concerns about privacy, fears that they may be perceived as emotionally and/or mentally unstable, impotent or abnormal in some way if they consult a counsellor/therapist may prevent infertile people from using professional psychosocial services. Therefore,



counsellors need to make every effort to contact such patients individually [33].

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