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Psychosocial experiences in women facing fertility problems—a comparative survey

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In a survey involving 281 patients awaiting assisted reproduction treatment at five centres in three countries, and 289 population controls, we investigated whether the patients had experienced more negative emotional feelings and negative emotional impact during periods when they were attempting to conceive as compared with the controls, and whether there was any difference in their well-being at the time of consultation. The study was performed in the context of currently divergent views as to the burden of fertility problems. The survey was carried out using questionnaires of the self-administration type. Women with fertility problems did in fact consistently report a higher prevalence of negative emotions than the controls with reference to the periods during which they had been trying to conceive. Patients reported more changes in interpartner relationships (either negative or positive). Sexuality was negatively affected among the patients. At the time of consultation, the patients had less favourable scores than the controls on scales for depressed mood, memory/concentration, anxiety and fears, as well as for self-perceived attractiveness. One in four (24.9%) of the patients had scores indicating depressive disorders as compared with only 6.8% of the controls. Current well-being was even more markedly affected in patients with previous unsuccessful in-vitro fertilization (IVF) experience. The 'infertility' life event was perceived as severe by both patients and controls. Both prior to consultation and during diagnosis and treatment, women with fertility problems had a higher prevalence of reported negative psycho-emotional experiences than women without fertility problems.

Key words: depression/infertility/IVF/psychosocial impact/sexuality

Introduction

Approximately 10% of all couples wishing to have a child experience fertility problems which do not spontaneously resolve (Greenhall and Vessey, 1990). Most of them, at least in Western countries, seek medical help and many of those with persistent problems receive assisted reproduction treatment (van Balen *et al*., 1997). It may be expected that any difficulties couples encounter when attempting to conceive will impose a considerable psychosocial burden on them, and anecdotal evidence indeed supports this view (Menning, 1980; Mahlstedt, 1994). Descriptive reports suggest that couples with fertility problems undergo various forms of severe psycho-emotional distress which may render them susceptible to depression (Dunkel-Schetter and Lobel, 1991). Such stress may further decrease the likelihood of conception, as suggested by recent work of Sanders and Bruce (1997), although evidence in this respect seems conflicting (Harlow *et al*., 1996).

In contrast to this popular view of infertility as a cause of considerable distress, which derives from descriptive anecdotal reports, most controlled studies using standardized, validated instruments have not in fact confirmed that serious psychological reactions are common in individuals with fertility problems (see review by Dunkel-Schetter and Lobel, 1991). Although fertility problems are regarded as an impairment of health (Diczfalusy, 1992), these methodologically stronger studies seem to indicate that the associated psycho-emotional burden is less severe than that experienced with other physical diseases.

However, if the controlled, standardized studies are further scrutinized in the light of findings already published in 1974 by Van Keep and Schmidt-Elmendorff, doubts arise as to whether the idea that psychological distress is not common in infertile individuals really reflects the experiences of those involved. Van Keep and Schmidt-Elmendorff (1974) reported that 'happiness' scores were lower among people who were failing to conceive as compared with those who had successfully done so. However, at around the time when medical investigations of the fertility problems were being conducted, the differences were no longer so pronounced. The happiness scores in the infertility group increased again when investigation, diagnosis and medical assistance had been initiated (despite the fact that treatment options were limited in those days), approaching the scores of people who were fertile.

Further scrutiny of the controlled studies reviewed by Dunkel-Schetter and Lobel (1991) and similar, more recent, studies (e.g. Tarlatzis *et al*., 1993) revealed that the psychosocial or well-being assessments among individuals with fertility problems were carried out at the time they were consulting for diagnosis and treatment. Since new hopes may then be kindled and the problems are being shared with professionals, we would expect, in line with the observations of Van Keep and Schmidt-Elmendorff (1974), but also with the more recent work of Boivin and Takefman (1996), there to be little difference between the scores of those individuals and fertile controls. This has indeed been corroborated by the controlled studies, although the possibility still cannot be excluded that during the periods when these individuals were vainly

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attempting to conceive, and also the phases prior to consultation, they have experienced more distress than fertile people.

In the present study, we explored the hypothesis that when women facing fertility problems are trying to conceive they experience more negative emotional feelings and negative psychosocial impact than women who eventually conceive spontaneously. We also took in the question of whether well-being at the time of consultation differs between the two groups of women. This hypothesis would tend to bridge the gap between current divergent views as to the burden of fertility problems. Furthermore, we investigated whether or not differences in emotional reactions may result in more weight being attached to the seriousness of infertility in relation to other life events.

Materials and methods

The study was a questionnaire-based survey involving women with fertility problems and women who were free of such problems. The subjects in the fertility problems group comprised 281 women awaiting or being prepared for assisted reproduction treatment [mainly in-vitro fertilization (IVF)]. The women were recruited from five centres: the University Hospital, Antwerp (Belgium) (n = 48), the Van Helmont Ziekenhuis, Vilvoorde (Belgium) (n = 27), the University Hospital, Nijmegen (The Netherlands) (n = 117), the Diakonessenhuis, Voorburg (The Netherlands) (n = 45) and the Centre d'Etude et de Traitement de la Pathologie de l'Appareil Reproducteur et de la Psychosomatique, Lille (France) (n = 47). We selected these centres because at the time of the survey they were not carrying out any particularly specialized treatments [intracytoplasmic sperm injection (ICSI), microsurgical epididymal sperm aspiration (MESA), or testicular sperm extraction (TESE)] which would attract specific subgroups of patients, the aim being to ensure that the women surveyed reflected the 'average' population of patients with fertility problems. Consecutive patients consulting the fertility units were invited to participate in the survey during their first visit or, if the first visit was only for administrative enlistment, during their second visit to the clinic, prior to any physical intervention for diagnosis or treatment. Women who agreed to participate were given a questionnaire for self-completion and requested to return it during their next clinic visit.

The comparison group consisted of 289 women aged 25–35 years (similar age distribution as the fertility-problems group), who already had at least one child of their own, were not pregnant at the time of the survey and had no history of assisted reproduction treatment. These women were recruited in the Netherlands and the areas surrounding Antwerp (Belgium) and Lille (France) by survey agencies which took part in carrying out the fieldwork. In the Netherlands, household addresses were selected at random from a national database owned by the survey agency. Field workers visiting the households invited women who met the inclusion criteria to participate. After completion, the questionnaires were returned by mail in pre-paid return envelopes. In Antwerp and Lille a semi-random approach was followed, whereby field workers visited starting addresses, drawn at random from a database owned by the survey agency. At the addresses visited women were asked to cooperate in the survey and, if they met the inclusion criteria, the questionnaire was handed over for self-completion and picked up later by appointment. At the first visit each subject was asked to suggest the names of four other women meeting the criteria, who were subsequently visited. In this way, a population-comparison group was established which was expected to be similar to the patient group in terms of age, partner-relationships and education. The sample characteristics of the patients and the fertile controls are given in Table I.

The arrangement whereby patients and controls completed their questionnaires at ease in their own homes, was designed to yield well-considered replies. The respondents were free to discuss the issues raised in the questionnaire with their partners.

The questionnaire addressed sociodemographic characteristics, the fertility problems experienced (patients) or reproductive history (controls), feelings experienced at the time the respondent had tried to conceive without success (patients) or previous to her first pregnancy (controls), the reactions of her partner at the time, the perceived effects on the interpartner relationship, sex life and communication with other people (parents, brothers/sisters, best friends and colleagues), current well-being and perceptions of the severity of various life events (including infertility).

The question relating to feelings experienced at the time the respondent had been trying to conceive was based on the feeling modalities described by Menning (1980) as being experienced by infertile couples. We asked respondents to rate in retrospect whether they had, at the time, experienced these feelings often, sometimes, not really, or never. The various items addressed are listed in Table II. Patients answered these questions in relation to the period when they were trying to conceive and had not succeeded. Control women answered them in relation to the period when they were trying but were not yet pregnant (five women who accidentally or instantly got pregnant skipped these questions). For the purposes of the analyses the responses were grouped into the categories 'experienced' and 'not really/never experienced'.

The questions concerning the interpartner relationship, sex life and communication referred to the same periods. It was asked whether the partner was supportive, distressed, sad or indifferent (responses: 'yes' or 'no'), whether the relationship became closer or more satisfying, or was characterized by more mutual understanding or arguments (responses: 'more', 'no change' or 'less'), and whether sex life had been affected (items in Table III, same response categories). It was also asked whether they had discussed with others the fact that they were trying to get pregnant (responses: 'often', 'sometimes' or 'no') and whether they had consequently received support from them (same replies). For analysis purposes, respondents without parents, siblings, friends or colleagues were excluded. The responses were grouped into 'yes' and 'no', 'often' and 'sometimes' being categorized as 'yes'. This is in accordance with Oddens *et al*. (1994). Patients were asked whether it was difficult to talk about children with other people. This question was not posed to the controls, since they had a child of their own.

Current well-being at the time of the survey was investigated by means of the Women's Health Questionnaire (Hunter, 1992) subscales for depressed mood, somatic symptoms, anxiety/fears, sleep problems, memory/concentration and attractiveness. This validated instrument for community samples results in subscale scores between 0 and 1, with 1 reflecting greater symptom experience or more difficulties in a particular area.

Finally, respondents rated the severity of a number of life events 'for a woman in general' as 'very severe', 'severe', 'not very severe' or 'not severe at all', according to the method of Boulet *et al*. (1988). Scores were assigned to their replies from 1 (very severe) to 4 (not severe at all) and for analysis purposes the life events were ranked according to mean severity score.

The questionnaire was pilot tested among 17 patients consulting for assisted reproduction treatment at the University Hospital, Antwerp, and 57 women who were attending antenatal services themselves or accompanying the attendees at the University Hospital Brugmann, Brussels. Where necessary, amendments were made according to these women's comments.

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Table I. Sample characteristics of the patients facing fertility problems (n = 281) and the subjects ('controls') in the comparison group (n = 289)

	Patients	Controls	P value
Mean age (years)	31.8 (SD 4.5)	31.5 (SD 3.0)	NS (t-test)
Mean duration of the interpartner relationship (years)	9.4 (SD 4.5)	10.9 (SD 4.9)	<0.001 (t-test)
Urbanization degree (%)			
>100 000 inhabitants	27.0	29.6	
10 000–100 000	45.3	51.2	
<10 000	27.7	19.2	NS (χ^2 test)
Level of education (%)			
primary	5.3	5.6	
secondary	59.9	67.4	
higher and university	34.9	27.1	NS (χ^2 test)
Job (%)			
full-time	41.5	25.7	
part-time	36.6	34.0	
none	21.8	40.3	<0.001 (χ^2 test)
Living together with partner (%)	99.3	95.1	0.003 (χ^2 test)

NS = not significant.

Table II. The prevalence of feelings experienced by women at the time they were trying and failed to conceive (patients) or had not yet succeeded (controls)

	Patients (%)	Controls (%)	P value (χ^2 test)
Surprise	75.5	23.3	<0.001
Shock	62.7	6.0	<0.001
Shame	37.2	4.6	<0.001
Embarrassment	77.0	19.1	<0.001
Wished it was not true	96.1	21.4	<0.001
Anger	73.3	16.5	<0.001
Why me?	87.2	17.4	<0.001
Isolation	50.5	4.2	<0.001
Guilt	37.4	4.2	<0.001
Felt hurt	84.4	23.7	<0.001
Thought problem would solve itself	43.6	50.2	NS
Thought it was part of life	44.3	29.9	<0.001
Thought it was just normal	12.1	47.7	<0.001
Felt depressed	77.9	11.0	<0.001
Felt inadequate	44.8	4.9	<0.001

NS = not significant.

Data were analysed according to whether respondents belonged to the patient or control group. Analyses were carried out for the total sample for the three countries included and also for each country separately. In addition, women who had had previous IVF attempts (n = 77) were compared with patients without previous IVF experience (n = 192).

Statistical methods

Differences between groups were evaluated by t-test for normally distributed variables, by Mann–Whitney test for variables that were not normally distributed and by χ^2 test for categorical variables.

Results

Questionnaires were returned by a total of 281 women with fertility problems (response rate 49.5%) and 289 population controls (response rate 68.6%). The period of time over which subjects were asked to report varied from several months to 16 years, with 2 years as median.

The sociodemographic characteristics of the patients and the comparison group are given in Table I. The study groups were comparable with respect to age, degree of urbanization and educational level. Women in the patient group had on average a shorter duration of the interpartner relationship. More women in the patient group were gainfully employed (they had no children) (78% as against 58%) and slightly more were living together with their partner (99% as against 95%).

Of the patients, 34.6% indicated that the cause of the fertility problems lay with their partners, 27.9% that it lay with herself and 20.5% that it involved both. The remaining 17.0% did not know. The actual causes were named by 71.9% of the patients (e.g. poor quality of sperm cells, endometriosis or badly functioning Fallopian tubes). Most patients (68.9%) had not had any previous treatment. Previous IVF (at another clinic) was reported by 27.6% of the patients, while 3.6% had undergone tubal surgery.

The prevalence of the feelings experienced by the patients and controls when attempting to conceive are given in Table II. The prevalence of the negative feelings were higher in the patient group (range 37–96%) than in the control group (range 4–24%). The largest differences were seen for shock, embarrassment, wishing that it was not true, anger, the question 'why me?', feeling hurt and feeling depressed. Somewhat lower rates were seen for shame, isolation, guilt and feeling inadequate, whereas the prevalence of the view that the problem would solve itself was not significantly different between patients and controls. The feeling that it was just normal had a significantly higher prevalence in the control group.

The results relating to the perceived impact on the interpartner relationship and sexuality are presented in Table III. The partner had also been distressed and sad, in particular, in the patient group. Although, compared with the controls, the patients found it less easy to discuss the lack of success with the partner, they also felt more supported. In general patients reported more changes in interpartner relationship, either positive (closer, less arguments) or negative (less close, less

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Table III. Perceived impact on the interpartner relationship and sexuality of the fact that conception had not (yet) occurred

	Patients (%)	Controls (%)	*P* value (χ^2 test)
Easy to talk to partner about lack of success	79.0	92.3	<0.001
Support by partner	92.9	79.1	<0.001
Partner distressed	37.5	5.3	<0.001
Partner sad	67.7	14.5	<0.001
Partner indifferent	9.9	13.6	NS
Relation			
closer	44.0	23.4	
less close[a]	4.5	1.4	<0.001
Satisfaction with relationship			
more	17.4	20.7	
less[a]	8.7	2.3	0.007
Mutual understanding			
more	26.6	23.0	
less[a]	9.7	2.2	<0.001
Arguments with partner			
more	16.1	3.9	
less[a]	9.0	5.9	<0.001
Coital frequency			
higher	15.6	45.1	
lower[a]	22.3	2.7	<0.001
Spontaneity of sex			
more	8.5	24.0	
less[a]	48.1	16.1	<0.001
Sex satisfaction			
more	5.6	16.0	
less[a]	20.6	8.2	<0.001
Sexual interest			
more	5.6	29.0	
less[a]	31.5	8.8	<0.001
Sexual pleasure			
more	5.4	16.5	
less[a]	25.7	8.0	<0.001

[a]Remaining respondents indicated 'no change'; they were included in the statistical analyses.
NS = not significant.

Table IV. The prevalence of communication with other people about the fact that conception had not (yet) succeeded

	Patients (%)	Controls (%)	*P* value (χ^2 test)
Talk with			
mother	74.9	31.8	<0.001
father	48.7	9.1	<0.001
sister/brother	72.3	28.9	<0.001
best friends	84.4	47.0	<0.001
colleagues	63.1	25.3	<0.001
Support from			
mother	68.6	48.6	<0.001
father	51.6	30.4	<0.001
sister/brother	70.3	47.1	<0.001
best friends	82.9	58.7	<0.001
colleagues	61.3	30.7	<0.001

satisfaction, less mutual understanding, more arguments). With respect to sexuality, the frequency, spontaneity, satisfaction, interest and pleasure were all lower among the patients than in the control group.

Table IV shows the prevalence of communication with people other than the partner about trying to become pregnant but not yet having succeeded. Many patients, but fewer controls, had discussed these issues, best friends being the most frequently mentioned discussion partners, followed by siblings and mothers.

When patients were specifically asked whether, at the time of the survey, it was easy to discuss their problems, 46.3% indicated that talking about children was difficult for them and 53.4% mentioned that other people were reluctant to talk about children with them. Furthermore, 83.9% of the patients were envious of people with children.

Current subjective well-being results as measured by means of the Women's Health Questionnaire subscales are presented in Table V. Highly significant differences were seen for the subscales 'depressed mood', 'memory/concentration', 'anxiety/fears' and 'attractiveness', the patients having higher scores. Although the mean score for depressed mood among patients (0.31) was below the cut-off point of 0.43 for depressive disorders (Hunter, 1992), 24.9% of the patient group had a score indicating such disorders (20.3% of the Belgian patients, 26.1% of the Dutch patients and 27.7% of the French patients) as compared with 6.8% of the controls (6.9, 4.0 and 11.8% respectively). All group comparisons were statistically significant ($P < 0.001$ for total, $P = 0.013$ for Belgium, $P < 0.001$

Table Va. Current subjective well-being scores at the time of the survey as measured by subscales of the Women's Health Questionnaire (means and SD) (all three countries)

	Patients	(SD)	Controls	(SD)	*P* value[a]
Depressed mood	0.31	(0.27)	0.16	(0.20)	<0.001
Somatic symptoms	0.33	(0.27)	0.30	(0.28)	NS
Memory/concentration	0.31	(0.34)	0.20	(0.30)	<0.001
Anxiety/fears	0.30	(0.28)	0.19	(0.25)	<0.001
Sleep problems	0.36	(0.34)	0.33	(0.33)	NS
Attractiveness	0.35	(0.39)	0.23	(0.32)	<0.001

NS = not significant.

Table Vb. Current subjective well-being scores (Belgium and The Netherlands)

	Patients	(SD)	Controls	(SD)	*P* value[a]
Depressed mood	0.30	(0.27)	0.14	(0.19)	<0.001
Somatic symptoms	0.32	(0.27)	0.28	(0.26)	NS
Memory/concentration	0.28	(0.33)	0.20	(0.30)	0.001
Anxiety/fears	0.28	(0.28)	0.16	(0.23)	<0.001
Sleep problems	0.33	(0.33)	0.28	(0.31)	NS
Attractiveness	0.32	(0.39)	0.23	(0.32)	0.024

NS = not significant.

Table Vc. Current subjective well-being scores (France)

	Patients	(SD)	Controls	(SD)	*P* value[a]
Depressed mood	0.38	(0.25)	0.22	(0.21)	0.001
Somatic symptoms	0.42	(0.25)	0.39	(0.31)	NS
Memory/concentration	0.42	(0.38)	0.22	(0.30)	0.003
Anxiety/fears	0.40	(0.29)	0.29	(0.30)	0.041
Sleep problems	0.47	(0.38)	0.49	(0.36)	NS
Attractiveness	0.50	(0.38)	0.23	(0.32)	<0.001

NS = not significant.
Scores between 0 and 1, with 1 reflecting greater symptom experience or more difficulties.
[a]Mann–Whitney test.

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Table VI. Weight attached to various life events studied (mean scores), ranked according to perceived severity

Patients		Controls	
Death of mother	1.22	Death of mother	1.15
Death of father	1.23	Death of father	1.19
Unfaithfulness of partner	1.29	Unfaithfulness of partner	1.23
Infertility	1.39	Infertility	1.47
Hysterectomy	1.67	Depression	1.57
Depression	1.70	Rheumatism	1.66
Rheumatism	1.78	Loss of job	1.81
Loss of job	1.96	Hysterectomy	1.87
Separation from friend	2.06	Separation from friend	1.87
Health problem of partner	2.52	Health problem of partner	2.45
Menopause	2.89	Menopause	2.76

Scores: 1 = very severe, 2 = severe, 3 = not very severe, 4 = not severe at all.

Table VII. Current subjective well-being scores at the time of the survey as measured by subscales of the Women's Health Questionnaire (means and SD) for women with and without previous unsuccessful in-vitro fertilization (IVF) treatment

	Previous IVF	(SD)	No IVF	(SD)	*P* value[a]
Depressed mood	0.37	(0.27)	0.29	(0.26)	0.028
Somatic symptoms	0.39	(0.27)	0.31	(0.26)	0.037
Memory/concentration	0.39	(0.38)	0.28	(0.32)	0.028
Anxiety/fears	0.34	(0.26)	0.29	(0.29)	NS
Sleep problems	0.41	(0.36)	0.34	(0.34)	NS
Attractiveness	0.38	(0.40)	0.35	(0.39)	NS

NS = not significant.
Scores between 0 and 1, with 1 reflecting greater symptom experience or more difficulties.
[a]Mann–Whitney test.

for the Netherlands, $P = 0.03$ for France) using χ^2 test. The percentages of patients and controls with anxiety disorders (score higher than 0.75) were 3.3 and 1.8% respectively (not significant).

Patients and controls ranked 'infertility' as a life event similarly according to perceived severity, i.e. lower than death of parents and unfaithfulness of partner, but higher than the remaining life events listed (Table VI).

In order to investigate similarities and differences across countries the prevalence and scores presented in Tables II–VI were also investigated by country, i.e. among patients and controls separately for Belgium, the Netherlands and France. It emerged that the prevalence of the variables presented in Tables II–IV were broadly similar in the three countries. The total percentages for these countries as presented in the tables accurately reflected those observed in each country individually. The Women's Health Questionnaire scores for somatic symptoms, anxiety/fears, sleep problems, attractiveness and memory/concentration were higher among French women (both patients and controls) than among Belgian or Dutch women (Table V). However, in all three countries the same differences between patients and controls were detected. The life event ranking was broadly similar in each country.

With respect to the reported emotional experiences of women with and without previous unsuccessful IVF, the prevalence was similar among the two patient groups, but with a few exceptions – previous IVF patients reported less frequently that they had thought the problem would solve itself (33.8% as against 47.6%, $P = 0.04$, χ^2 test), and more frequently that they had felt depressed (88.3% as against 73.7%, $P = 0.009$, χ^2 test).

The comparative data with regard to current well-being are given in Table VII. Women who had undergone previous IVF attempts had significantly increased scores for depressed mood, as well as for somatic symptoms and memory/concentration problems. Of the previous IVF patients 33.3% had depressive disorders (score >0.43) as compared with 21.1% of women with no previous IVF history ($P < 0.04$, χ^2 test). The two groups had similar scores on the other subscales of the Women's Health Questionnaire.

Discussion

We investigated the hypothesis that during the time they attempt to conceive, women with fertility problems experience more negative emotional feelings and psychosocial impact than women who eventually conceive spontaneously, but that well-being at the time of consultation does not differ from that in fertile population controls. The study focused on women, although those concerned were free to involve their partners in the completion of the questionnaires.

The patient sample was not recruited from centres carrying out super-specialized treatments, but from 'normal' fertility treatment units in order to obtain a typical cross-section of the majority of infertility patients within the population. An effort was made to ensure that the population comparison sample was similar to the patient group in terms of age distribution, partner-relationships and education, so as to achieve a sound basis for comparison between cases and population controls, except of course as regards the experience of fertility problems. In general, the results in the three different countries studied were homogeneous, at least with respect to the most essential points, allowing the data to be pooled. However, the relatively low response rate in women with fertility problems and the difference in response rate between patients and controls may have introduced some bias. It might be assumed that, particularly among women with fertility problems, women with very bad psycho-emotional experiences would be more reluctant to respond, thus leading to an underestimation of the effect of fertility problems on psychosocial well-being. The period of time over which subjects were asked to report varied considerably. However, inspection of the data revealed very similar psychological experiences, irrespective of the length of the period between 'trying to conceive' and the interview.

With reference to the time they were trying to conceive, women in the patient group reported a higher prevalence of most of the negative emotions investigated. They also less frequently reported feeling that what they had experienced was normal. The prevalence of some of these emotions (feelings of depression, why me?, wishing it was not true) was very high (near to 80%, or over). These results were well in accordance with the descriptive reports of people's experiences regarding infertility, many of which describe not only surprise,

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shock, denial, anger, isolation, guilt, grief and depression, but also acceptance and resolution (e.g. Menning, 1980; Dunkel-Schetter and Lobel, 1991).

At first sight, the results accorded less well with those of quantitative, controlled, standardized studies, some of which did not find that infertility had much effect on emotional life, at least not in comparison with control populations (Guttmann *et al*., 1986, and for other studies Dunkel-Schetter and Lobel, 1991). In those studies, however, infertile individuals were mostly interviewed just prior to treatment and not during the time prior to their seeking medical help. Consequently, these studies possibly provided information more on the success of adjustment to the problems than on what the couples had gone through and they do not rule out the possibility that the emotional life of couples with fertility problems is disturbed mainly during the early phases of experiencing those problems. This reasoning is in line with the findings of Van Keep and Schmidt-Elmendorff (1974), which indicated that emotional differences between patients and unaffected controls were seen principally during the period when couples suspected they might have fertility problems, but subsequently largely disappeared as a result of adjustment, sharing of the problem with professionals and hoping for a successful resolution. Boivin and Takefman (1996) observed that specific phases of IVF treatment were associated with minor increases in stress scores largely outweighed by substantial increases in feelings of optimism.

It should be noted that our study results relating to the early phases of infertility were obtained retrospectively, as were those of Van Keep and Schmidt-Elmendorff (1974). Women with fertility problems may have reported a higher frequency of negative emotions to 'justify' their having sought medical help, whereas fertile women possibly under-reported negative emotions because they ultimately became pregnant spontaneously. Although the latter possibility cannot be excluded, support for the validity of retrospectively reported emotions and thoughts is found in the relatively small number of retrospectively reported negative emotions and thoughts that are different between women with and without previous IVF, whereas current subjective well-being scores are different for three or four out of six items (Table VII). A prospective approach to study these problems might be favoured. However, owing to practical problems (follow-up for a long time of very large numbers of women trying to conceive is necessary, with the risk of including insufficient women with fertility problems in the ultimate sample) a retrospective approach as followed here is the only possible way to study these problems. Moreover, in a prospective study, women would be interviewed at the time they are trying to conceive in vain; such interviews in themselves could have a therapeutic effect.

Our results relating to the perceived reactions of the women's partners give an overall picture of support, participation in the grief and sharing of the emotions. Although it has been suggested that fertility problems may negatively affect the interpartner relationship [e.g. Mahlstedt (1994)], the present results are somewhat controversial: the relationship was reported to be closer but less satisfactory in patients as compared to controls. Frequency of sexual activity, spontaneity and satisfaction, however, were lower in comparison with the control group, which was consistent with previous reports (Dunkel-Schetter and Lobel, 1991; Tarlatzis *et al*., 1993). This may reflect how the pleasure of sexuality becomes subordinate to its reproductive function. Communication with others, in particular with best friends and mothers, was found to be intensive, although not easy. It should be noted that this finding was based on North West Europe. Tarlatzis *et al*. (1993) found that communication with others, as well as with the partner, could be a serious problem in other cultures and countries, as in the case of their own country: Greece.

Our hypothesis also postulated that there would be no differences in current well-being between the patient and the control group, based on the findings of the controlled standardized studies reviewed by Dunkel-Schetter and Lobel (1991). However, this part of the hypothesis must be rejected: the scores for feelings of depression and anxiety/fears were higher in the patients than in the women without fertility problems, although only a few of the patients really had an anxiety disorder. Moreover, the patients had more memory and/or concentration problems and felt themselves to be less attractive. However, the most marked results were seen when the scores for feelings of depression were applied to detect depressive disorders, according to the methodology described by Hunter (1992). One in four patients was classified as having such a disorder. This was in line with the findings of Hynes *et al*. (1992), but not with all studies on the psychological effects of fertility problems (see review by Dunkel-Schetter and Lobel, 1991).

It was noteworthy that women who had undergone earlier unsuccessful IVF treatment did not report higher frequencies of negative emotions before treatment than the other patients, but were more often depressed. The longer period during which they were attempting to get pregnant and the frustration of their failed attempts might have played a role in this respect. McMahon *et al*. (1997) reported that women who had undergone more than one IVF cycle, even after successful conception, still had higher anxiety levels than women who conceived after one IVF cycle, which highlights the potential long-term consequences of such frustration.

Although patients might have been expected to attach more weight to the seriousness of infertility than fecund women, precisely because of their fertility problems, this appeared not to be the case. Infertility was fundamentally seen by both patients and controls as a severe life event. This is an important observation and can be considered as a confirmation of the concept that infertility is an impairment of health (Diczfalusy, 1992).

In conclusion, it emerged from the present study that women facing fertility problems may experience a turmoil of negative feelings, in particular at the time when they are attempting to conceive but realize they are not succeeding. The scores of one in four women indicated that they were having psychological problems at the time they sought medical help, notably depression. For professionals involved in the counselling of infertility patients this implies that they should not only focus on the feelings and experiences of the women concerned at the time of consultation but should also look back with the

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couple over what they have had to cope with in the recent past. The need for such an approach is clear, combined with awareness of the fact that psychological well-being may deteriorate subsequent to unsuccessful treatment cycles.

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