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DONNEES DE L'ENQUÊTE **CARACTERISTIQUES DES COUPLES DEMANDANT UNE FECONDATION IN VITRO EN FRANCE**

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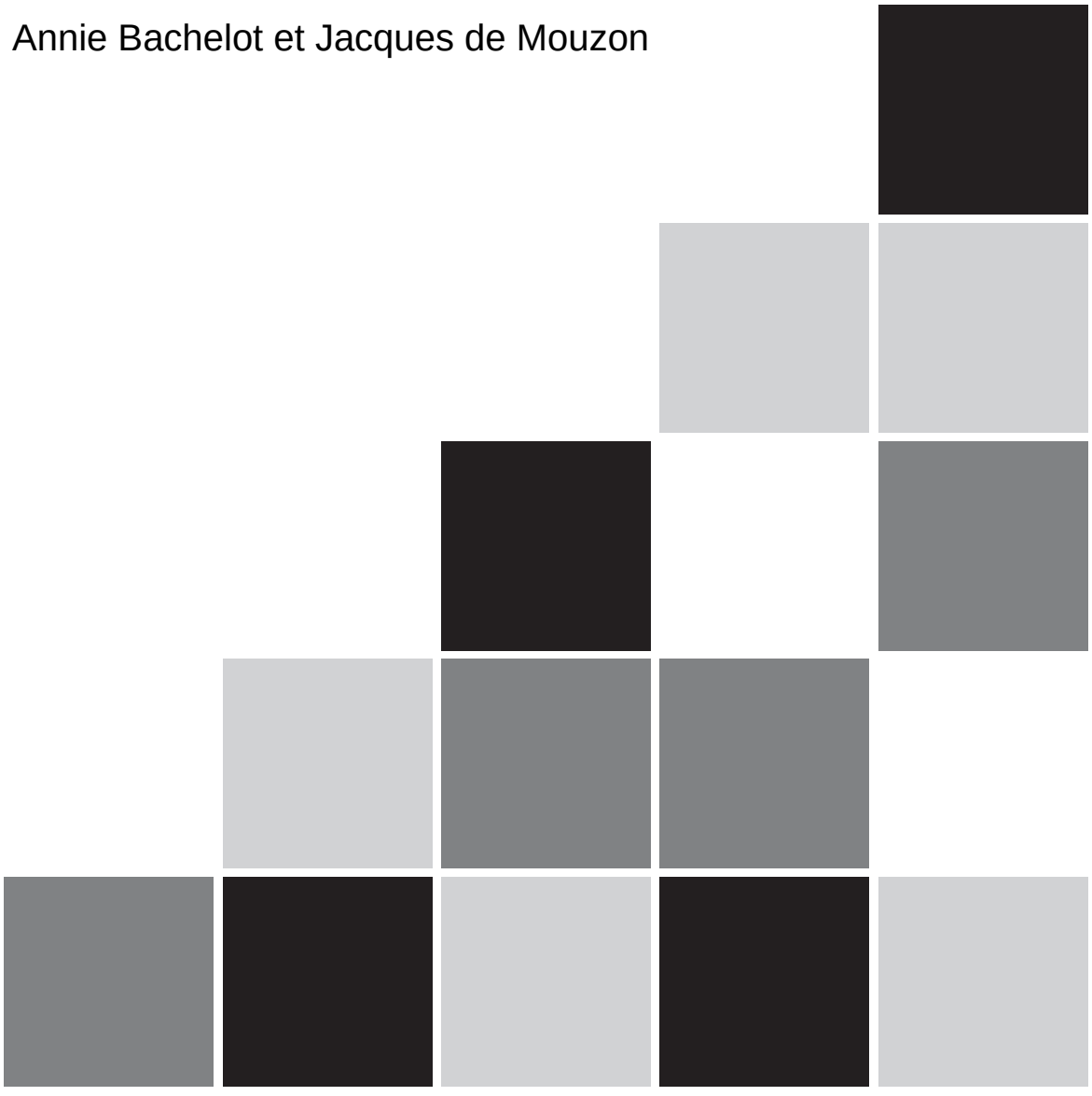

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DONNEES DE L'ENQUETE

"CARACTERISTIQUES DES COUPLES DEMANDANT UNE FECONDATION IN VITRO EN FRANCE"

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NOTE AUX LECTEURS

Ce document présente les résultats d'une enquête multicentrique menée en 1995 dans 52 centres de fécondation in vitro (FIV) en France, auprès de 4 902 couples volontaires dont une partie consultait pour un bilan d'infécondité tandis que d'autres étaient déjà inclus dans un programme de FIV. Pour cette analyse, seuls les couples participant à un programme de fécondation *in vitro* (2 104) ont été retenus.

Ce travail a été mené distinctement du recueil annuel des données de l'enquête nationale FIVNAT, coordonné par la même équipe de recherche de l'INSERM.

Il devait permettre de mieux connaître à la fois les principales caractéristiques socio-démographiques des couples concernés et leurs attitudes vis-à-vis des traitements proposés, ainsi que des risques qui y sont associés, comme les naissances multiples. Alors que l'enquête FIVNAT collecte pour chaque tentative de FIV des données médicales, cette enquête s'appuie sur les déclarations d'un large échantillon de femmes afin d'explorer leurs attentes et les démarches qu'elles entreprennent pour mener à bien leur projet d'enfant.

SOCIO-DEMOGRAPHIC CHARACTERISTICS AND EXPECTATIONS OF COUPLES DEMANDING *IN VITRO* FERTILISATION

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ABSTRACT

The aim of the study was to analyze the socio-demographic status and the attitudes of couples demanding in vitro fertilisation (IVF) in France.

This tranversal study was conducted in 52 IVF centres during two months. A self-administered questionnaire was filled in by all women volunteers participating in an IVF programme. In total 2104 women were included.

The couples in IVF had a better educational level and socio-economic level than the general population in France. Women reported negative effects of infertility and infertility treatment on their social, affective and sex lives. The relationship between the main socio-demographic variables and attitudes towards desire for a pregnancy, adoption, and freezing embryos was analyzed.

Our results show that although the socio-economic level of the population attending IVF centres is higher than that of the general population, patients of lower-economic status nonetheless have access to IVF in France. However a better knowledge of the infertile couples' characteristics and attitudes towards IVF could help to facilitate the access.

INTRODUCTION

In Vitro Fertilization treatment has greatly increased from 6000 in 1986 to over 20,000 in 2001, with more than 45,000 egg collection procedures carried out in 2001 (FIVNAT, 2003). We still know little about the socio-demographic status of the French couples concerned and their expectations. How do they represent their desire to have a child? How do they come to the decision to commit themselves to this approach? How do they estimate the risks of IVF? Nothing has been established in France with a large sample and data collection by a large number of centres, concerning the characteristics of couples who actually undergo the procedure. However, such data seem to be indispensable, in terms of Public Health, to determine who benefits from these treatments and to evaluate changes in couples' demands.

Few studies have tended to determine the psychological and psychosocial characteristics of infertile couples (Christie, 1998; Oddens *et al*., 1999). More recently Wischmann *et al*. (2001) considered the motives for wanting a child, life satisfaction and couples relationships, physical and psychic complains : no typical profile for infertile couples seems exist, except depression and anxiety for infertile women. The ability of the couples to adapt to infertility and their need for psychological support have been studied also (Edelmann and Connolly, 1989; van Balen, 1994). Fertile and infertile couples have been compared. For example, Bromham *et al*. (1989) conducted a psychometric evaluation of four couples' groups : fertile delivered, infertile pregnant, undelivered and infertile not conceived. Fassino *et al*. (2002) showed differences regarding to anxiety, depression and anger suppression between "organic" and "functional" infertile subjects and fertile controls. Stoleru *et al* (1993) studied

couples before a pregnancy to determine the psychological factors as predictors of the couples' fertility in men and in women.

Regarding to the IVF procedure, Visser (1994) has described anxiety and psychosocial state before and after IVF among 150 women with a specific IVF questionnaire and existing tests : the treatment outcome had no influence on attitude towards IVF. Boivin *et al*. (1998) studied the emotional, physical and social reactions of couples undergoing IVF or ICSI, mainly determined by the uncertainty of treatment procedures. Whereas other studies have tried to show the effects of psychological factors on the outcome of attempts, as the level of stress (Klonoff-Cohen *et al*.,2001), the levels of anxiety, of depression and the project to conceive a child (Stoleru *et al*., 1997), the coping style and the depression level (Demyttenaere *et al*, 1988). Such factors could also help to predict possible reactions in case of failure, to improve the couples' well-being (Newton *et al*., 1990; Hammarberg *et al*., 2001).

The influence of socio-demographic data themselves has less often been taken in account. Bostoffe *et al*. (1985) compared the results of a semen analysis of 691 couples examined for infertility during 1950-52 with their socio-economic class. The authors concluded that the better fertility prognosis of couples of higher socio-economic classes could not be explained by a difference in semen quality of the men, but may indicate that women of lower classes could suffer from more severe gynaecological diseases. Tain (2001) studied two cohorts of 86 infertile French women included in 1987 and 254 infertile women included in 1991 in one hospital. She described the couples' planning and showed effects of the socio-demographic variables such the women's occupation on going again or stopping the IVF procedure.

In this work, we aimed to study the socio-demographic characteristics of couples enrolled in IVF programmes and to analyse possible relationships between these characteristics and the couples' expectations and perception of their experience.

METHODS

This transversal study took place between January 15th and March 15th 1995 in 52 IVF centres. At these centres, all women volunteers undergoing IVF treatment were included in this study.

All the patients treated by the centre during this period received a letter explaining the study and were asked to complete an anonymous self-administered questionnaire. This closed-item questionnaire included detailed questions on the couples' socio-demographic and economic status, religion, the influence of friends and family on the decision to seek IVF treatment, obstetric history, type of infertility and its cause, if known, and the medical pathway taken. Questions concerned the couples' perception of the examinations and treatments received since they began consulting for infertility, and their consequences for the couples' professional, social, affective and sex lives, on the nature of their desire to have a child, on their opinions concerning the risk of multiple pregnancies, the freezing of embryos and adoption. The understanding of the questionnaire has been verified and agreed. The questions have not been standardised because they recovered very different areas of research.

To maintain strict anonymity, the forms were placed in an envelope addressed to the research team, sealed by the patient herself, to ensure that the medical team was not aware of the information relating to a particular patient. This envelope was given to the gynaecologist, who also filled in an anonymous form, giving details of the diagnosis of infertility, its cause, the decisions taken and the type of consultation (simple consultation for infertility or follow-up for IVF). The completed dossier was sent to INSERM U822 for data analysis.

A total of 4902 questionnaires were completed, and 4035 medical files were obtained, 867 dossiers remaining incomplete. From the 4035 complete dossiers, forty-nine dossiers did

not specify the reasons for the consultation and 125 couples were already undergoing another type of treatment for infertility

(induction of ovulation, artificial insemination with spouse‘s or donor’s semen). We included in this analysis 2104 couples participating in an IVF programme, either waiting for an attempt (i.e. before monitoring; n=1061), or currently undergoing IVF (n=1043). We did not include in this analysis the 1757 couples consulting for infertility with a view to undergoing assisted reproduction techniques.

To estimate the participation rate, the number of questionnaires completed by couples currently undergoing IVF was compared to the number of IVF attempts declared to the French national survey FIVNAT, by these 52 centres (the same centers declared 4073 attempts for the same period -january to march 1995): the couples accounted for 51.3% of the IVF attempts recorded by the FIVNAT register.

All the questionnaires were sent to the research unit 822 of French National Institute of Research on Health (INSERM). The forms were controlled and entered on a computer (CRI, INSERM, Villejuif, France). Data were validated and analysed with SAS software. The statistical tests used were the chi-square test or analysis of variance (ANOVA), according to the qualitative or quantitative type of variable. The characteristics studied were analysed descriptively and comparisons were made between women and men enrolled in IVF programmes and women and men of the French population. These comparisons were made with French socio-demographic data collected by the INSEE (Institut National de la Statistique et des Etudes Economiques): “La France en faits et chiffres” the annual estimation of population on January 1st, by region, sex, and age (1990-2005), the 1990 Population census (INSEE, 1993), the 1990 and 1991 Employment surveys and the 1991-1992 INSEE Financial survey, concerning the income and heritage of households (INSEE, 1996), taking age class into account as far as possible.

RESULTS

I. SOCIO-DEMOGRAPHIC CHARACTERISTICS

The Table 1 presents the main characteristics of the women : age, religious practice, family status, nationality, unit of residence.

The mean age of the women in the sample was 33.4 ± 5.0 years, and that of the men was 35.3 ± 5.8 years. A proportion of 59.9% of the women were in the under 35 year age group, 30.4% were in the 35-39 year age group and 9.6% in the over 39 year age group.

In the sample, 77.1 percent of the couples were married, exceeding the national rate of 60.1% of women between 20 and 49 years married, and 22.1% were cohabiting. The mean duration of existence of the current couple was 8.2 ± 4.9 years. Although 40.4% of the women declared that they had previously lived in a couple, this was the case for only 25.6 % of men.

The number of members of the household was 2.3 ± 0.82 and the number of children, including those from other relationships was 0.4 ± 0.8.

Of the women questioned, 93.7% were of French nationality, close to the percentage for the women of the same age in the general population (93.5%).

Of the sample, only 12.7% of women and 13.9% of men claimed to have received no religious instruction. The distribution of the various religions among the women was 78.8% catholics, 2.6% protestants, 0.9% jews, 4.0% muslims and 1.0% others. The believers were 74.4%, and 12.4% were practising. Among the men, 77.2% were catholics, 2.7% protestants, 1.4% jews, 4.0% muslims, and 0.8% others. The believers were 65.7% and 10.8 % were practising. Overall, men seemed to attach less importance to religion than their partners.

More of the couples in the sample than the national average (Insee, 1993) came from small or medium-sized towns (between 5,000 and 100,000 inhabitants) when considering women aged 20 to 49 years. Less of the couples in the sample came from large cities over 100,000 inhabitants (20.4% vs 29.3%).

The distance between the couple's home and the specialised centre was less 10 kms for 25.1%, between 10 and 49 kms for 33.4%, between 50 and 99 kms for 21.8%, and over 100 km for 19.7% of the IVF couples.

The level of education of the woman (Table 2) was higher than that in the general population: the percentages of women who had received a university education (31.5% vs 18.0%), who remained in education until the age of 18 (21.5% vs 15.2%) or even 16 (17.2% vs 8.3%) were considerably higher. On the opposite, couples with low technical education, and with primary education only were considerably less numerous (16.4% vs 15.3% and 7.4% vs. 33.3%, respectively).

The percentage of working women (74.5%) was close to that recorded by the INSEE for women between 20 and 49 years (72.3%); 12.4% of women and 5.1% of men in the sample were unemployed.

The socio-professional category of the couple, determined by the status of the head of the family, was higher than the national average (Table 2). The percentages of senior executives and self-employed individuals was slightly higher (16.1% vs. 14.8%), and the percentage of employees was quite higher than the national average (26.9% vs. 11.3%) whereas the percentage of manual workers was lower (28.6% vs. 39.1%).

Only 1976 couples answered to the question about annual income (Table 2). The percentages of couples with the highest annual incomes (over 45,000 €), couples with above-average incomes (30,000 € to 45,000 €), and couples with average incomes (15,000€ to 30,000€) were higher than in the general population (8.7% vs 6.3%, 20.7% vs 11.6% and

40.8% vs 38.2%, respectively). The lowest income (less than 15,000€) was more frequent in the general population (44.0% vs 29.8%). Thus, the IVF couples seemed to have higher incomes than these in the French population, nevertheless the main difference did not concern the highest incomes.

Almost all the women (93.2%) in our sample had medical insurance, and 6.3% were covered by their partner's medical insurance.

In summary, this sample of couples receiving treatment at specialist infertility centres, differed from the French general population in several socio-economic aspects, such as the size of town in which they lived, level of education, socio-professional category and annual income.

But the differences about socio-professional level and annual income were less important for the highest categories than for the lowest.

II. ACCESS TO IVF PROCEDURE

In the sample 79.6% of the couples said they had difficulties to have a child for the first time. For this attempt, they had already consulted one or several general practitioner (in 35.6%), one or several gynaecologists (in 83.5%), one or more gynaecological unit
(in 59.6%).

III COUPLES' ATTITUDES TO IVF AND INFERTILITY TREATMENT

We investigated the perception and judgement of the couples concerning the effects of infertility and infertility treatment on their professional, social, affective and sex lives.

To the question "Had your infertility problem repercussions on your professional life?" the effects most frequently reported by the women were prolonged or frequent periods of absence (33.9%) and changes in working hours (16.4%), moving to part-time working for example. Other answers are less frequent such as job changes (3.1%), availability (7.8%), resignation (2.9%) or redundancy (2.8%) due to the follow-up of infertility treatment.

Infertility and its treatment may disrupt the social, affective and sex lives of patients. Answering to the question "Had your infertility problem repercussions on your social, affective and sex live?" the number of women complaining about negative effects was relatively high (38.9%).

A question asked for psychological counselling need : "In case of IVF, did you consulted a psychologist or a psychiatric specialist ?" Only 13.6% answered yes.

Evaluation of the risks associated with IVF was explored with several questions.

"Did you hear about the possibility of getting a multiple pregnancy? " : IVF couples were well prepared for this eventuality because 96.1% had been warned of the possibility of multiple pregnancy.

Then they were asked if "they would accept twins or triplets". As far as the possibility of multiple pregnancies was concerned, IVF couples were very numerous to accept twins (98.6%) and even triplets (60.5%).

Finally they were asked if "they would agree with the idea of freezing embryos". IVF couples were also quite open to such a possibility (91.6%).

The couples were asked about adoption "Do you envisage to take the steps for an adoption in case of failure of your infertility treatment ?". The proportion of couples that would consider adoption if infertility treatment failed was 41.9%. However, few IVF couples (10.7%) had actually started the adoption process.

The demands for treatment of the infertile couples corresponded to four main dimensions explored by the questionnaire. The question was "Could you say to us what is the best corresponding with your request ?“. Of the women questioned, 72.2% stated that they sought treatment principally because they wanted to found or enlarge a family, 20.6% wanted to see their own child grow up, 6.6% wanted to feel pregnant and give birth and only 0.7% wanted a baby to save their relationship

Another question asked "Whom in the couple desired the most that pregnancy" (the woman, her husband or both?). Most of the sample (92.3%) stated that both partners shared the desire to have a child, a low percentage of women wished to fulfil their individual desire (6.7%), almost non-existent among men (1.1%).

Further question explored the influences felt by the couples: "Have you been influenced by your circle to have a child , and to seek IVF ?"

Few women (8.1%) admitted that their friends and relatives had influenced their decision to have a child. Quite a few (14.7%) felt that their decision to seek IVF treatment had been influenced by their friends and family. Of those encouraged to seek IVF, 66.3% were encouraged by their partner, 9.3% by their family and 24.4% by their friends, colleagues or other people.

IV. RELATIONSHIP BETWEEN THE MAIN SOCIO-DEMOGRAPHIC VARIABLES AND ATTITUDES TOWARDS IVF AND EXPERIENCE OF TREATMENTS.

a) attitudes towards IVF

Can socio-demographic characteristics such as the age of the woman, the income, the highest level of education of the couple and the religious practice have a significant influence on attitudes to IVF?

- The desire for a pregnancy (Table 3) was mostly a desire of the couple rather than a personal desire, particularly in younger women, in couples with lower incomes and with low educational levels. It was independent of religion.
- Adoption was more frequently considered (Table 4) if the woman was younger (44.3% in women under 30 years and 35.3% in women aged 40 or over, $p<0.05$), if the income was higher (from 32.2% for an income < 9 000€ to 54.2% for an income > 45 000€, $p=0.001$) and if educational level of the couple was higher (from 32.7% for a primary education to 49.8% for university education, $p=0.001$). No relationship with religion was observed.
- The freezing of embryos (Table 5) was more likely to be accepted by younger women (94.4% in women under 30 years and 89.0% in women aged 40 or over, $p<0.05$), and by women without religious beliefs (92.3.1% vs. 89.5%, $p<0.01$). No relationship was observed with the income or level of education of the couple.
- The possibility of having triplets (Table 6) was more likely to be accepted by the youngest women (61.9% in women under 30 years) or by the oldest (62.6% in women aged 40 or over), by women practising a religion (68.8% vs 59.6%, $p<0.01$), by those

with a low income (from 70.5% for an income< 9 000€ to 56.1% for an income> 45 000€, p<0.05), and by those with a low educational level (from 65.5% for a primary education to 58.2% for university education, p=0.01).

- Perception of the negative effects of infertility on the social, affective and sex lives of women (Table 7) was more frequent for higher income (from 50.3% for an income of >45,000€ to 30.0% for an income of <9,000€, p=0.001, and for higher educational level of the couple (from 47.9% for university education to 29.7% for a primary education, p=0.001). These were the more likely couples to complain. On the opposite, age and religious practice did not appear to be linked to this attitude.
- The results were similar for men (Table 8). Men complained of these negative effects more if the couple's income was in the highest category (from 21.0% for an income of <9,000€, to 32.9% for an income of >45,000€, p=0.01), and if the couple's educational level was high (from 32.8% for university education to 18.0% for a primary education, p=0.001).
-

b) experience of treatments

The women in the sample were not necessarily given the same treatment, their perception of the examinations and patient management cannot but differ. However, it is interesting to study this perception as a function of socio-demographic variables, such as age, income, and highest educational level of the couple.

Egg collection was considered as the most difficult to be tolerated by 49.6% of women, followed by injections for 24.3%, blood sampling for 14.9%, and the ultrasound scans for 5.5%.

We observed no link between the age, income and level of education of the couple and finding ultrasound or injections difficult to tolerate. Conversely, blood sampling (Table 9) was less frequently well tolerated by older patients (from 20.9% in 40 year old women to 12.5% in 30 year old women, p=0.06), by couples with lower incomes (from 18.9% with an income of <15,000€ to 11.9% for an income of >45,000€, p<0.01) or with lower educational level (from 17.2% for a primary level to 12.5% for university level, p=0.06).

Difficulties in accepting egg collection were not linked to age, income or educational level.

Almost two thirds (65.3%) of women in the sample (n=1205) considered that they had to go too often to the centre for examinations or treatment. Age did not seem to be linked to this attitude. This view was more frequent for low level of education (from 70.0% for a primary level to 61.7% for a university level education, p<0.01) and for low income (from 67.5% with an income <15, 000€ to 60.2% for an income>45,000€, p<0.05).

Psychological support (psychologist or psychiatrist) accompanying medical follow up (Table 10) was not seen as useful by 30.1% of the women, 60.2% thought that it should only be proposed in certain cases, and only 9.8% thought it should be systematically offered. This attitude was not significantly related to women's age, but with socio-economical conditions. Women with lower incomes thought more often that psychological support was not necessary (from 38.5% for an income of <15,000€ to 22.2% for an income of >45,000€, p<0.001). The same view was also more likely to be held by women in couples with a low educational level (from 41.0% for a primary level to 20.9% for a university level, p<0.001). A high socio-economic level seems to favour the expression by the women of their psychological distress and attempts to seek help.

DISCUSSION

This is the first study to describe the socio-demographic status and attitudes of a large sample of French couples demanding IVF. However, the degree to which this sample was representative merits some discussion. Although the 52 participating centres volunteered to take part in the study and were not selected at random, they accounted for 85 % of the attempts in the 101 accredited centres in 1995. These centres were located in 27 towns throughout France, and covered both the private and public sectors.

The second question concerns the extent to which the couples included were representative, because these couples also participated on a voluntary basis, and the response rate was only 51,3 %. Less educated people can be less willing to cooperate in a study with self-administered questionnaires. To answer to this question, the occupational level of men in the sample was compared with the occupational level of men from the whole same centres in the FIVNAT register in 1996 because that variable was not taken in account before mid-1995. In the sample, senior executives (16.1% vs 20.7%) and middle-level executives (19.9% vs 24.6%) were less numerous than in the register, and employees (26.9% vs 17.6%) and manual workers (28.6% vs 25.1%) were more numerous in the sample. So this selection bias can exist but seems small. On the other hand, other studies already reported that potential IVF patients have an higher educational level.

In most cases, the questionnaires were completed by the woman because the men did not always accompany their partners. As only one questionnaire was completed by each couple, the women had to answer the questions concerning their partner alone and this may have introduced bias into the data.

Given the absence of socio-demographic studies of IVF on samples of similar size in France, it is difficult to compare our results with previous data. However, the Canadian study carried out by Newton *et al*. (1990) with 213 women and 184 men took into account both demographic variables and responses in psychological tests predicting reactions to IVF failure. The mean age of the men was 33.5 years and that of the women was 31.4 years. These couples were younger than those in our sample, but the Canadian study took place between 1984 and 1989, when IVF concerned primarily certain female infertility indications and younger couples. The level of education was similar to that of the couples in our sample, with 50% of the participants having educated beyond high school.

In our study the percentage of married couples was higher than that in the general population, because according to French law, only stable couples, married or together for over two years, are eligible for IVF.

The percentage of women who had previously lived in a couple was higher than that for men. Apart from the fact that in most cases women were responding on behalf of their partners and were perhaps less well informed, INSEE's national data (Desplanques, 1993) show that there is a difference between men and women because at 24 years of age, 59% of women and 37% of men were living with a partner or raising a child in 1990 .

Our results show that IVF is currently available to a geographically diverse population. The women in our sample were more likely that the national average to come from small (5,000 to 10,000 inhabitants) or medium-sized (10,000 to 100,000 inhabitants) towns in which the probability of specialist consultation being available was lower than in large towns. Some couples may also seek anonymity when dealing with infertility problems.

The couple's socio-professional category, represented by the status of the head of the family, showed the same tendencies as incomes. These two variables are obviously closely linked. The woman's level of education, although more independent, constitutes a pertinent

indicator of access to information and competent medical services. Here, the three indicators are high, with a high proportion of women educated to university level, confirming better access to medical information in these couples than in the general population.

IVF has long been suspected to be a treatment largely restricted to the privileged. Our results show that although the socio-economic level of the population attending these specialised centres is higher than that of the general population, patients of lower socio-economic status nonetheless have access to this treatment in France. It is interesting to note that the sample contained a large proportion of employees, who have been shown to use the medical system in other domains by economic studies carried out in France in this period. According to the CREDES-ESPS 1995 survey of health and medical care (Grandfils *et al*, 1996), executives and employees are the most frequent visitors to doctors' surgeries in any given month, whereas craftsmen and tradesmen are the least frequent visitors. We found that craftsmen, tradesmen and farmers were underrepresented in our sample with respect to the general population. Middle-level executives and employees spent more on medicines in 1995 than senior executives, 15% and 9% higher than the average, respectively, whereas senior executives spent very little more that the general population.

Based on the national INSEE-CREDES-SESI study on health and medical care carried out in 1991-1992, Andrée Mizrahi and Arié Mizrahi (1998) demonstrated that income, the socio-professional category of the head of the family and education level influence the use of medical services by women. Indices of spending on specialist doctors were highest in senior executives, followed by intermediate professional personnel and employees. The lowest indices were those for farmers. Specialist spending indices were highest for women educated until the age of at least 18 years. The authors stated that price constraints were not the only constraints affecting the possible recourse to specialist doctors. The fact that specialists are mostly located in large cities, close to universities, is important; access to these doctors is

facilitated by the patient having a similar social origin and level of education. These factors are all linked and may be partially cumulative.

Medical insurance reimburses most medical costs in France, but specialists' fees remain high because the patient must often pay part of the fee that is not reimbursed by social organisations. This is because many specialists are entitled to set their fees above agreed levels or at whatever level they choose. Furthermore the percentage reimbursed for IVF treatment varies as a function of the criteria selected (Haut Comité de la Santé Publique, 1994).

In summary, our results concerning income and socio-professional class reveal the growing generalisation of infertility treatments in the population, although the generalisation is still insufficient.

When the attitudes of couples seeking IVF are considered, the desire to have a child may be felt and expressed as a shared desire of the couple or as something more individual, specific to the woman or her partner.

Women may feel pressured into having children, and even more into undergoing IVF. Pressure to undergo IVF more often comes from individuals outside the family, the influence of the partner remaining the most important in both cases. The desire to have a child may be linked to social conformism, resulting in infertility being considered a handicap and the woman feeling she must have children to be complete.

A psychosocial study evaluating the IVF/GIFT programme in Hong Kong (Chan *et al*, 1989) was carried out on 112 married couples in which the woman was less than 39 years old. Of these IVF patients, 25.9% felt pressure from their family to have a child and 17.0% thought that infertility affected their marriage, but few couples admitted that infertility had a possible effect on their sex life, cultural factors being taken into account .

The results presented also showed the importance of the effects of infertility and infertility treatment on the day-to-day life of the couples, in particular on their social, affective and sex lives.

The negative effects of infertility and infertility treatment on the social, affective and sex lives of the couple were recognised by 38.9% of women questioned. Other studies have attempted to compare these effects in the women and in their partners.

Cook *et al*. (1989) questioned 59 infertile women in the United Kingdom consulting for IVF or AID and 34 of their partners. Approximately 50% of these women reported that their infertility had a negative effect on their relationship with their partner and on their sex life. One third of the men (33%) reported a negative effect on their relationship and 23% on their sex life. These results are counterbalanced by the fact that the couples also reported positive aspects. Thus, the authors concluded that these couples' relationships and sex lives remained acceptable.

In France, Laffont and Edelmann (1994) compared 117 women and 101 men in IVF follow up. The women reported more negative effects of the treatment than the men because they judged that IVF interfered with their work and leisure time and they found the travelling to and from consultations more stressful. However, there was no difference between men and women in the numbers who found that IVF had an effect on their family life and their friendships. Forty-one percent of the women and 15% of the men thought that IVF reduced their sexual desires.

A study carried out in the USA and Canada (Kopitzke *et al*, 1991) on 26 infertile patients assessed physical and emotional problems related to 27 types of examinations, techniques and infertility treatments and to 9 types of situations, such as waiting for the results, seeing a pregnant women and adoption. These data were compared to estimates made by doctors and nurses. The patients reported greater emotional than physical difficulty with examinations

and situations, and reported similar levels of physical and emotional difficulty with techniques and treatments.

Hammarberg *et al*. (2001) tried to understand how women feel about the experience of IVF 2-3 years after ceasing the treatment by mailing to 229 Australian women a very complete questionnaire with three self-report measures. Having or not a baby influenced their recall but most agreed that they had had IVF to avoid future regrets (83%). There were 42% of women who felt a negative influence of IVF on their marital relationship, and 59% on their sexual relationship. Concerning the decision to try IVF, 37% of the women said it was primarily their decision, even if 97% of the couples both agreed about trying.

The "individualist" desire to have a child and the negative effects of infertility were more often expressed by women with a high level of education and a high income. This type of personal demand or complaint may be favoured in comfortable environments in which there is greater freedom of expression and less conformism. We cannot be certain that these notions do not also exist in women with a more modest education level or income, but these women may conform to more conformist values, such as the desire of the couple to have a child and, in particular, may not be willing to come forward for psychological help.

CONCLUSION

After analysing the effects of socio-demographic variables on the request for IVF and on the way in which IVF is handled by couples, other questions still remain to be answered. These include the effects of infertility of a male or female origin on these attitudes or on the type of desire expressed, and an in-depth analysis of the choices made and the way in which couples

cope with treatment. Furthermore, given the rapid progress being made in medically assisted reproduction it would be useful to have a regular measure of the repercussions of infertility and its treatment on the state of health as perceived by the patients. In fact, in terms of communication and the doctor-patient relationship, the couples attitudes towards their infertility and the treatments received should be taken into account from now on, rather than simply evaluating the probability of successful treatment.

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TABLE 1: WOMEN' S CHARACTERISTICS

	N	%	FRANCE
AGE (N=2083):			
≤ 34 YEARS OLD	1248	59.9	50.4*
35-39 YEARS OLD	634	30.4	16.9*
≥ 40 YEARS OLD	201	9.6	32.6*
RELIGIOUS BELIEVERS (N=2027)	1509	74.4	
RELIGIOUS PRACTISING (N=1994	247	12.4	
FAMILY STATUS : MARRIED (N=2076)	1601	77.1	60.1**
FRENCH NATIONALITY (N=2076)	1932	93.7	93.5**
UNIT OF RESIDENCE (N=1977) :			
<5 000 INHABITANTS	573	29.7	29.1***
5 000-9 999	227	11.4	5.3***
10 000-99 999	428	21.4	18.1***
>100 000	408	20.4	29.3***
PARISIAN REGION	341	17.1	18.2***

*Percentages calculated from Insee 1995 Annual estimation of population on January 1st by region, sex and age

**Insee 1990 Population Census : Women 20 – 49 years old

***Insee1990 : Women 20-59 years old (working women or housewives)

TABLE 2: EDUCATIONAL LEVEL, SOCIO-PROFESSIONAL CATEGORY AND ANNUAL INCOME

	N	%	FRANCE
EDUCATIONAL LEVEL (1) N=2046			PC 1990*
UNIVERSITY	645	31,5	18.0
BACCALAUREAT (UNTIL 18)	440	21.5	15.2
BEP (UNTIL 16)	352	17.2	8.3
CAP (UNTIL 16)	335	16.4	15.3
BEPC (UNTIL 16)	123	6.0	10.0
PRIMARY	151	7.4	33.3
SOCIO-PROFESSIONAL CATEGORY (2) N=2013			ES 1991**
FARMERS	35	1.7	4.1
CRAFTSMEN/TRADESMEN	135	6.7	8.9
SENIOR EXECUTIVES	324	16.1	14.8
LOWER EXECUTIVES	401	19.9	22.0
EMPLOYEES	542	26.9	11.3
MANUAL WORKERS	576	28.6	39.1
ANNUAL INCOME (3) N=1976			FS 1992 ***
<15 000€	588	29.8	44.0
15 000€ -30 000€	807	40.8	38.2
30 000€ -45 000€	409	20.7	11.6
> 45 000 €	172	8.7	6.3

(1) women's educational level, (2) occupational class of the head of the family, (3) couples 'annual incomes

*Insee 1990 Population Census : Women 20 – 49 years old

**Insee1991 : Employment survey : active men 25-45 years old, military service excluded

***Insee 1992 Financial survey

TABLE 3 : RELATIONSHIP BETWEEN SOCIODEMOGRAPHIC CHARACTERISTICS AND DESIRE FOR A PREGNANCY AS COUPLE'S DESIRE RATHER THAN PERSONAL DESIRE

	COUPLE' S DESIRE		
SOCIODEMOGRAPHIC CHARACTERISTICS	N	%	P
WOMEN'S AGE(N=2017)			0.001
≤29 (N=439)	420	95.7	
30-34 (N=776)	734	94.6	
35-39 (N=607)	540	89.0	
≥40 (N=195)	167	85.6	
ANNUAL INCOME (N=1917)			<0.05
<9 000 € (N=159)	152	95.6	
9 000€--15 000€ (N=395)	378	95.7	
15 000€ -30 000€ (N=794)	721	90.8	
30 000€ -45 000€ (N=402)	366	91.0	
> 45 000 € (N=167)	154	92.2	
EDUCATIONAL LEVEL*(N=1990)			<0.01
PRIMARY,CAP,BEPC,BEP (N=713)	674	94.5	
BACCALAUREAT (N=460)	423	92.0	
UNIVERSITY (N=817)	738	90.3	

*the highest of the couple

TABLE 4 : RELATIONSHIP BETWEEN SOCIODEMOGRAPHIC CHARACTERISTICS AND CONSIDERED ADOPTION IF INFERTILITY TREATMENT FAILED

	CONSIDERED ADOPTION		
SOCIODEMOGRAPHIC CHARACTERISTICS	N	%	p
WOMEN'S AGE (N=1828)			<0.05
≤29 (N=391)	173	44.3	
30-34 (N=728)	330	45.3	
35-39 (N=539)	207	38.4	
≥40 (N=170)	60	35.3	
ANNUAL INCOME (N=1753)			0.001
<9 000€ (N=143)	46	32.2	
9 000€- -15 000€ (N=351)	122	34.8	
15 000€- -30 000 €(N=739)	315	42.6	
30 000€- -45 000€ (N=365)	178	48.8	
>45 000 € (N=155)	84	54.2	
EDUCATIONAL LEVEL* (N=1862)			0.001
PRIMARY,CAP,BEPC,BEP (N=664)	224	33.7	
BACCALAUREAT (N=433)	182	42.0	
UNIVERSITY(N=765)	381	49.8	
RELIGIOUS PRACTICE** (N=1816)			NS
PRACTISING(N=220)	88	40.0	
NO-PRACTISING (N=1596)	683	42.8	

* the highest of the couple **of the woman

TABLE 5 : RELATIONSHIP BETWEEN SOCIODEMOGRAPHIC CHARACTERISTICS AND COUPLE 'S AGREEMENT WITH THE POSSIBILITY OF FREEZING EMBRYOS

	COUPLE'S AGREEMENT		
SOCIODEMOGRAPHIC CHARACTERISTICS	N	%	p
WOMEN'S AGE (N=1996)			<0.05
≤29 (N=430)	406	94.4	
30-34 (N=775)	713	92.0	
35-39 (N=600)	539	89.8	
≥40 (N=191)	170	89.0	
ANNUAL INCOME (N=1908)			NS
<9 000 € (N=160)	147	91.9	
9 000€ -15 000€ (N=403)	370	91.8	
15 000€ -30 000€ (N=785)	716	91.2	
30 000€ -45 000€ (N=395)	365	92.4	
>45 000€ (N=165)	151	91.5	
EDUCATIONAL LEVEL* (N=1971)			NS
PRIMARY,CAP,BEPC,BEP (N=706)	646	91.5	
BACCALAUREAT (N=456)	412	90.4	
UNIVERSITY (N=809)	748	92.5	
RELIGIOUS PRACTICE ** (N=1864)			<0.01
PRACTISING (N=219)	196	89.5	
NO-PRACTISING (N=1645)	1519	92.3	

* the highest of the couple **of the woman

TABLE 6 : RELATIONSHIP BETWEEN SOCIODEMOGRAPHIC CHARACTERISTICS AND COUPLE 'S AGREEMENT WITH THE POSSIBILITY OF HAVING TRIPLETS

	COUPLE'S AGREEMENT		
SOCIODEMOGRAPHIC CHARACTERISTICS	N	%	p
WOMEN'S AGE (N=1847)			<0.05
≤29 (N=417)	279	66.9	
30-34 (N=734)	428	58.3	
35-39 (N=533)	309	58.0	
≥40 (N=163)	102	62.6	
ANNUAL INCOME (N=1762)			<0.05
<9 000€ (N=139)	98	70.5	
9 000€ -15 000€ (N=363)	235	64.7	
15 000€ -30 000€ (N=727)	439	60.4	
30 000€ -45 000€ (N=376)	214	56.9	
>45 000€ (N=157)	88	56.1	
EDUCATIONAL LEVEL* (N=1831)			0.01
PRIMARY,CAP,BEPC,BEP (N=638)	418	65.5	
BACCALAUREAT (N=422)	239	56.6	
UNIVERSITY (N=771)	449	58.2	
RELIGIOUS PRACTICE ** (N=1779)			<0.01
PRACTISING (N=228)	215	68.8	
NO-PRACTISING (N=1637)	1564	59.6	

* the highest of the couple **of the woman

TABLE 7 : RELATIONSHIP BETWEEN SOCIODEMOGRAPHIC CHARACTERISTICS AND NEGATIVE EFFECTS OF INFERTILITY ON THE WOMEN'S SOCIAL, AFFECTIVE AND SEX LIVES

	NEGATIVE EFFECTS		
SOCIODEMOGRAPHIC CHARACTERISTICS	N	%	p
WOMEN'S AGE (N=1964)			NS (0.10)
≤29 (N=423)	148	35.0	
30-34 (N=762)	303	39.8	
35-39 (N=593)	240	40.5	
≥40 (N=186)	73	39.3	
ANNUAL INCOME (N=1872)			0.001
<9 000€ (N=160)	48	30.0	
9 000€ -15 000€ (N=381)	122	32.0	
15 000€ -30 000€ (N=774)	300	38.8	
30 000€ -45 000€ (N=392)	178	45.4	
>45 000€ (N=165)	83	50.3	
EDUCATIONAL LEVEL* (N=1942)			0.001
PRIMARY,CAP,BEPC,BEP (N=690)	205	29.7	
BACCALAUREAT (N=452)	164	36.3	
UNIVERSITY (N=800)	383	47.9	
RELIGIOUS PRACTICE ** (N=1910)			NS
PRACTISING (N=230)	81	35.2	
NO-PRACTISING (N=1680)	670	39.9	

* the highest of the couple **of the woman

TABLE 8 : RELATIONSHIP BETWEEN SOCIODEMOGRAPHIC CHARACTERISTICS AND NEGATIVE EFFECTS OF INFERTILITY ON THE MEN'S SOCIAL, AFFECTIVE AND SEX LIVES

	NEGATIVE EFFECTS		
SOCIODEMOGRAPHIC CHARACTERISTICS	N	%	p
MEN'S AGE (N=1938)			NS
≤29 (N=256)	55	21.5	
30-34 (N=702)	183	26.1	
35-39 (N=595)	166	27.9	
≥40 (N=385)	94	24.4	
ANNUAL INCOME (N=1842)			0.01
<9 000€ (N=157)	33	21.0	
9 000€ -15 000€ (N=376)	80	21.3	
15 000€ -30 000€ (N=761)	193	25.4	
30 000€ -45 000€ (N=384)	113	29.4	
>45 000€ (N=164)	54	32.9	
EDUCATIONAL LEVEL* (N=1912)			0.001
PRIMARY,CAP,BEPC,BEP (N=679)	122	18.0	
BACCALAUREAT (N=444)	106	23.9	
UNIVERSITY (N=789)	259	32.8	

- the highest of the couple

TABLE 9 : RELATIONSHIP BETWEEN SOCIODEMOGRAPHIC CHARACTERISTICS AND BAD EXPERIENCE OF BLOOD SAMPLING

	BAD EXPERIENCE OF BLOOD SAMPLING		
SOCIODEMOGRAPHIC CHARACTERISTICS	N	%	p
WOMEN'S AGE (N=1686)			0.06
≤29	46	12.5	
30-34	91	13.8	
35-39	80	16.1	
≥40	33	20.9	
ANNUAL INCOME (N=1615)			<0.01
<15 0 000 €	86	18.9	
15 000€-45 000€	93	13.7	
>45 000€	57	11.9	
EDUCATIONAL LEVEL* (N=1672)			0.06
PRIMARY,CAP,BEPC,BEP/16	102	17.2	
BACCALAUREAT/18	55	14.0	
UNIVERSITY	86	12.5	

*the highest of the couple

TABLE 10 : RELATIONSHIP BETWEEN SOCIODEMOGRAPHIC CHARACTERISTICS AND PSYCHOLOGICAL SUPPORT NON USEFUL FOR COUPLES

	PSYCHOLOGICAL SUPPORT NON USEFUL		
SOCIODEMOGRAPHIC CHARACTERISTICS	N	%	p
WOMEN'S AGE (N=1959)			NS
≤29	129	31.3	
30-34	216	28.4	
35-39	181	30.3	
≥40	63	33.7	
ANNUAL INCOME (N=1871)			<0.001
<15 0 000 €	211	38.5	
15 000€-45 000€	223	29.0	
>45 000 €	123	22.2	
EDUCATIONAL LEVEL* (N=1624)			<0.001
PRIMARY,CAP,BEPC,BEP/16	283	41.0	
BACCALAUREAT/18	130	29.1	
UNIVERSITY	167	20.9	

* the highest of the couple

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