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# Use Of Internet In Infertility Patients

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## Abstract

Objective: To determine the use of the Internet by Infertility patients for obtaining health care information.

Study Design: Questionnaire study involving 106 Infertility patients

Results: Ninety-eight completed and returned the questionnaire (response rate — 92%). Majority was in the age group of 31-35 years. Sixty-eight patients had primary infertility and thirty had secondary infertility. Ninety-three women had used computers and eighty-nine had accessed Internet. Fifty-eight patients used Internet to search for infertility issues (59%). Internet use was more common in patients with higher education levels (41.37%) and who were professionals (48.27%) These women had suffered infertility for about a year longer than the other group and also had longer treatment duration. Patients accessed the fertility sites to get general information about infertility, to find about treatment modalities, seek support and clinic selection. 89% patients favored our idea of developing an Internet web site for our Unit.

Conclusion: The use of the Internet is increasing with more than 50% of the infertility patients using the Internet for health information. This raises important issues regarding the need for peer review and has significant impact upon doctor-patient relationship. Infertility specialists should keep themselves well updated with medical information on the web sites.

## INTRODUCTION

The Internet was initially developed for the rapid exchange of the information through government, industrial and academic computers by the advanced Research project Agency of the U.S. Department of Defences in the event of a nuclear war (Metz et al., 2003). Since the public introduction of the Internet in early 1990's there has been continued exponential growth of this computer resource. Worldwide, 215.5 million English-speaking people have access to the Internet, of whom 21 million reside in the U.K (Gordon et al., 2002).

Medical Profession is not untouched by this revolution in information technology. The rapid growth of the Internet has provided patients with unprecedented access to information regarding their medical condition. Particularly with conditions like infertility, patients are looking for more information on their illness as well as sources for emotional and psychological support. They may obtain support or information from reliable sources, such as their general practitioner or specialist, or from sources perceived to be less reliable, such as friends, relatives, media and increasingly,

the Internet.

The World Wide Web (WWW) not only provide a forum for medical self-education, but it also enables reporting on latest advances long before these are incorporated into textbooks or occasionally, even before they have been subjected to peer review. There are no doubts that Internet is a potentially powerful and important tool for patient education but is not free of problems. One unique challenge to the Internet as an effective patient health information resource relates to information quality. Medical information on the Internet can be highly variable in quality. There are various web sites for Infertility information. Organizations like Human Fertilization and Embryology Authority (HFEA) have their own web sites, which are peer reviewed and have high quality standards. But on most of the other commercial web sites the infertility information is under no guidance or regulation and therefore of questionable reliability.

There are few studies that examine the emergence of Internet use for medical purpose amongst the UK patient population (Sacchetti et al., 1999). Thus far, there is no detailed analysis

regarding rates of access and attitudes towards Internet use in a UK infertility clinic.

With a questionnaire study, we investigate the use of the Internet for medical information by an infertility outpatient population in a District General Hospital in the UK. The aim of the study is to find the frequency of use of the Internet by infertility patients, to determine the subgroup of the patients that attempts access and under what circumstances do they attempt access. We also asked for patients comment on our plans of developing an Internet site.

**MATERIAL AND METHODS**

A cross-section survey was conducted over a period of two months. Questionnaires were issued to women visiting the infertility clinic of the District General Hospital. The clinic offers its services to both NHS patients and private patients. The clinic offers infertility investigations and different treatments like ovulation induction, intrauterine insemination and transport IVF with a tertiary centre. The outpatient department staff gave the questionnaires to 106 consecutive women, after obtaining their verbal consent. It was made clear that their decision to participate would not affect their treatment. A draft questionnaire was piloted among ten women and feedback was obtained on the structure and information of the questionnaire and the ease of understanding of the questions. The final questionnaire was adjusted accordingly. In pilot testing, the survey took approximately 4 minutes to complete. A total of 106 questionnaires were distributed. Questionnaires were completed and returned before the consultation.

**QUESTIONNAIRE**

A questionnaire containing 20 questions was used. The questions enquired into:

- Patient's demographic information.
- Infertility history and treatment received
- The patient's general use of internet
- Use of the internet to obtain information on infertility issues
- The reasons for the use of the internet
- Patient's comments on our plans for developing a department Internet site.

**STATISTICAL METHODS**

The data was analyzed using SPSS for Windows (Statistical Package for the Social Sciences) 10.0. Chi-square test was used to analyze difference between the two groups of Internet users and non-users.

**RESULTS**

One hundred and six patients with fertility problems were approached and invited to complete the questionnaire. A total of ninety-eight (92%) women completed and returned the questionnaire. 7.5% who declined to return the questionnaire gave no reason for doing so. The majority of the respondents were in age group of 31-35 years (Table-1).

**Figure 1**

Table 1: Sociodemographic information of the survey participants

| VARIABLE                   | NUMBER OF PATIENTS |
|----------------------------|--------------------|
| <b>Age (Years)</b>         |                    |
| 20-25                      | 6                  |
| 26-30                      | 16                 |
| 31-35                      | 46                 |
| 36-40                      | 25                 |
| >40                        | 5                  |
| <b>Marital status</b>      |                    |
| Married                    | 75                 |
| Unmarried                  | 23                 |
| <b>Education</b>           |                    |
| Primary school or less     | 0                  |
| Secondary school           | 52                 |
| University                 | 15                 |
| Professional Qualification | 31                 |
| <b>Occupation</b>          |                    |
| Unemployed                 | 5                  |
| Unskilled                  | 7                  |
| Skilled                    | 25                 |
| Managerial/Technical       | 22                 |
| Professional               | 39                 |

Seventy-five were married and other twenty-three were living with their partners. 52 of our patients were qualified up to high school, 15 had university degree and other 31 were professionally qualified. Majority of them (95%) were employed. 70 respondents had experienced infertility for more than 2 years duration. 18 patients attended for the first consultation and other 80 were then undergoing treatment. Mean duration of infertility in this group was 2.41 years (Table-2). 38 patients had some form of infertility treatment in past and the mean duration of treatment in this group was 2.06 years. The treatment was in form of ovulation induction, IUI, IVF or ICSI.

Figure 2

Table 2: Infertility information of the survey participants

| VARIABLE                             | NUMBER OF PATIENTS |
|--------------------------------------|--------------------|
| Mean duration of Infertility (Years) | 2.41 (S.D 1.45)    |
| Mean duration of Treatment (Years)   | 2.06 (S.D 1.30)    |
| Parity                               |                    |
| Nulliparous                          | 70                 |
| Para 1                               | 23                 |
| Para 2                               | 4                  |
| Para 3                               | 1                  |
| Past treatment                       |                    |
| Yes                                  | 37                 |
| No                                   | 61                 |
| Treatment received                   |                    |
| Ovulation induction                  | 22                 |
| IUI                                  | 18                 |
| IVF                                  | 14                 |
| ICSI                                 | 4                  |

Overall, ninety-three patient had access to a computer and a majority, 89, had used computer to access Internet (Table-3).

Figure 3

Table 3: Internet use among the survey participants

|                                      | Number Of patients |
|--------------------------------------|--------------------|
| Use of computer                      | 93                 |
| Previous use of Internet             | 89                 |
| Use of Internet for fertility issues | 58                 |
| <b>Main Internet user</b>            |                    |
| Male                                 | 24                 |
| Female                               | 19                 |
| Both                                 | 41                 |

When asked about the frequency of use of Internet, 52 participants replied that they were using the Internet less than once in a month, 18 used it once a month and the others used it more often. Among the 89 respondents, 24 (27%) reported the male partner to be the main Internet user, whilst the female partner was the main user in 19 (21%) cases. Forty-one (52%) participants reported that both partners used the Internet equally for fertility-related issues.

58 participants had used Internet to access fertility related issues (Table-4). The majority of the couples 37(61%) used Internet most frequently for fertility-related problems during the period after referral to our fertility unit. Twenty-three (39%) were using Internet before referral to the Infertility unit.

Figure 4

Table 4: Variations between patients who had searched the Internet for medical information compared with those who had never searched the Internet

|                                     | Had searched the Internet For medical information | Had not searched the Internet For medical information | p value |
|-------------------------------------|---|---|---------|
| <b>No. Of patients</b>              | 58  | 31  | p=. 012 |
| <b>Age Group (Yrs)</b>              |   |   |         |
| 20-30                               | 8   | 11  |         |
| 31-35                               | 35  | 9   | p<0.005 |
| 36& above                           | 14  | 14  |         |
| <b>Education</b>                    |   |   |         |
| Secondary school                    | 20  | 26  | p<.001  |
| University Qualification            | 37  | 8   |         |
| <b>Occupation</b>                   |   |   |         |
| Skilled & Unskilled Worker          | 14  | 20  |         |
| Managerial/Professional             | 43  | 14  | p<.001  |
| <b>Mean duration of Infertility</b> |   |   |         |
| 1-2Yrs                              | 18  | 8   |         |
| 2-4 Yrs                             | 16  | 17  | p<0.104 |
| 4-6 Yrs                             | 10  | 4   |         |
| >6 Yrs                              | 13  | 3   |         |

Internet use was more common in patients with higher education level and who are professionals. This difference was statistically significant (p <0.001). These patients had suffered from Infertility for about a year longer than the other group and also had treatment for longer duration.

The 58 participants were also asked to respond to statements about their use of the Internet for fertility-related problems. The motivation for fertility-related Internet use was investigated. Forty-four (79%) participants said that they wanted general information about Infertility problem, whilst a considerable proportion (25/58; 43%) used the Internet to get treatment information. A minority used the Internet to seek emotional support (6/58; 10%) and a few (4/58; 6%) used it for clinic selection. The 46 women who searched the Internet for general information were asked about what they were interested in knowing. The responses varied from 'use of diets, mineral supplements', 'polycystic ovaries', 'miscarriages & ectopic pregnancies', 'side effects' and 'complementary and alternative medical therapies', to more complex issues like 'why embryos don't attach', egg sharing', etc.

In the survey we also enquired if the participants had any prior information about procedures carried out in our unit and their success rates. Eight-three patients reported that they had no such information before the initial consultation.

Eighty-two women were undergoing fertility treatment in the unit and 61(74.39) had received our information pack.

Twenty-one (34.42%) reported that the information pack was very useful and contained sufficient information. Thirty-four (55.73%) found it fairly useful but six said it did not contain enough information. We also asked for their view on our plans for developing an Internet web site for the unit detailing procedures and success rates. An overwhelming majority (89%) favored this plan.

### DISCUSSION

Use of the Internet is clearly increasing rapidly throughout the world. As access to this resource continues to expand, more and more patients will be obtaining information through the Internet (Metz et al., 2003). Our survey is the first to evaluate the extent of Internet use by infertility couples in UK. The results indicate that a considerable proportion of patients are currently using the WWW with regards to their fertility problem. 58% of the study patients used Internet for fertility issues. In a similar study on Canadian population (Weissman et al., 2000), 55.8% of the survey participants had used the WWW for fertility related issues. In our study the patients most likely to search the Internet were of the age group of 31- 35 and more likely to be professionally qualified than who did not search the net. It is interesting to note that both male and female partners were searching the net together. This is in contrast to the reports from Weissman's study, where female partners were more active in surfing the net.

In our unit we try to give as much information during consultation and also provide the couple with written information on various diagnostic tests and treatments. Our survey participants reported that 74.39% of them had received the Information pack and 90.16% reported that the information provided was useful. In spite of this, a majority of patients accessed Internet for medical information. It is possible that in relation to infertility tests and diagnosis uncertainties arise and patients want second opinion. The Internet provides a quick and a relatively inexpensive source for these inquisitive patients. Through our survey we tried to explore what these patients were interested in knowing. A majority of patients accessed Internet to get more information about their problem. They searched for details about Polycystic ovaries, 'blocked tubes', ectopic pregnancy ect. Some patients also used the net to find about Infertility treatments. They wanted to know the different treatment options for their condition, its success rates, side effects and any available alternatives. A few turned to net for understanding the terminology frequently used by the infertility specialist, while others were interested in finding

about more complex matters like embryos implantation and new advances in infertility. Infertility patients are a vulnerable group and often search for non-medical solution for their failure to conceive. Few of the couples accessed Internet to find about complementary and alternative medicine. Research on the psychological impact of infertility finds that infertile individuals experience negative psychological sequel including depression, anxiety, feeling of isolation and stress (Epstein et al, 2002). To find support many infertility individuals turn to books, infertility support groups and more recently to Internet. In our study 10.34% patients used Internet to seek support during the treatment. Online contact with other patients, patient organizations and healthcare providers can offer comfort and support (Epstein et al).

The use of Internet by patients to obtain medical information is likely to improve their knowledge, awareness and sense of control and their ability to participate actively in health care decision. However there are concerns about its usability and quality of information available on the Internet. While traditional medical print media maintains quality and control using a peer review process and editorial oversight, most continuing medical education Internet sites fail to meet even minimal quality standards (Peterson et al., 2000). Similarly, patient's information sites often fail to provide tight quality control on conventional information for patients (McClung et al., 1998). Without proper guidance, the information found by a patient could become harmful or distracting rather than helpful. Considering that 58% of our patients are accessing information in this way, they should be directed towards reliable, easily accessible sites. In our study 89% of the patients favored our plan of developing an Internet site. The overwhelming response of our patients supports the concept that there is a need for websites that can provide up-to-date and validated information. We suggest that British Fertility establishments could set up an accessible web-site for patients information and support, and this could link to specific clinics.

### CONCLUSION

This study demonstrates the increasing significance of the Internet. Over half of our survey population used Internet for seeking medical information. By encompassing the growing importance of the Internet, we can use it to impart information to other professionals and to tailor the information to our patient population. However there are several challenges facing us. What should be the contents of these web sites? How do health professionals assert quality

control over these sites? It is clear that the health professionals and institutions need to be actively involved in seeking the answers to these questions.

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