Annotation

THE USE OF THE INTERNET BY ORTHOPAEDIC OUTPATIENTS

J. E. D. Wright, R. R. Brown, C. Chadwick, D. Karadaglis

Since the development of the world wide web the volume of information available on the Internet to both orthopaedic patients and surgeons has increased enormously.^{1,2} At the end of 2000 it was estimated that 33.5% of the population of the UK were using the Internet on a regular basis.³ Increasing numbers of patients are said to be consulting doctors with an abundance of information downloaded from it. However, a Medline search in March 2001 was unable to find a study, in any branch of surgery, which quantified the use of the Internet by patients to learn about their clinical condition. We have therefore investigated the use of the Internet by a sample of orthopaedic outpatients.

Patients and Methods

We asked 350 outpatients (180 men and 170 women) attending seven clinics to complete a questionnaire about their use of the Internet and of other sources of information to learn about their current orthopaedic condition. Between December 2000 and January 2001, 200 consecutive elective and 150 trauma patients were questioned in a district general hospital, two regional teaching hospitals and a tertiary referral hospital in the Thames and Trent Health Regions in the UK. All agreed to be included. The clinics were selected non-randomly in order to sample different levels of the health-care system. Use of the Internet was analysed by age, geographical region, ownership of a computer and socio-economic class, and between elective and trauma patients, at the first or a subsequent visit and before and after operation.

Users of the Internet were asked to describe the type of site visited and all patients listed alternative sources of information about their orthopaedic condition.

Statistical analysis was performed using chi-squared tests for categorical variables and Student's *t*-test for continuous variables, with statistical significance set at 5%.

Results

Overall, $8.29 \pm 0.02\%$ (95% confidence limits) of patients used the Internet to find information about their clinical problem. The use by patients attending a tertiary referral clinic was 22% compared with 4.5% ($p = 0.01$) at a regional teaching hospital and 9% ($p = 0.01$) at a district general hospital (Fig. 1). Users of the Internet were younger than non-users, with a mean age of 27.9 years compared with 48.0 years ($p = 0.01$). The Internet was used by 11.5% of elective orthopaedic outpatients compared with 4% ($p = 0.01$) of those attending a fracture clinic (Fig. 2).

There was no significant variation between clinics in the Thames and Trent regions, nor was there any difference between patients attending their first or a follow-up clinic. More patients had consulted the Internet after surgery (10.9%) than before operation (5.9%), but this was just outside statistical significance ($p = 0.07$).

Half of the outpatients had access to the Internet and 16.6% of these had obtained information from it. The Internet was the fourth most popular source of information, after medical professionals (17.1%), books (16.5%) and television or radio (11.1%). Only two of the 350 patients (0.6%) had actually brought printed information downloaded from the Internet to the clinic.

The patients had visited 40 Internet sites. Non-peer-reviewed general medical sites were the most commonly consulted (35%), followed by peer-reviewed medical journals (20%), patient-support-group sites (20%), private-hospital-information sites (5%), unspecified sites (17.5%) and a chat room visited by one patient (2.5%).

The patients in paid employment were assigned a socio-economic class.⁴ There was a trend between increased usage of the Internet and higher socio-economic class which strongly correlated with increased ownership of a personal computer ($p < 0.05$).

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Fig. 1

The variation in the use of the Internet by orthopaedic patients according to the type of hospital.

Fig. 2

The use of the Internet between elective orthopaedic and trauma clinics.

Discussion

Currently, every 12th patient seen in an orthopaedic outpatient clinic will have used the Internet to gain information about his or her condition. This proportion of patients (8.29%) is surprisingly low compared with the 33.5% of the population of the UK who, in December 2000, regularly used the Internet.³

There is strong interest in the future role of the Internet in the provision of health care,^{5,6} but no large study has been published in the surgical literature which measured its use by patients. In 1998 a small postal questionnaire of patients attending a gastroenterology clinic showed that none had acquired information about their disease from the Internet.⁷ This suggests that in the last three years there has been a trend towards an increase in its use.

Use of a computer is currently greater in younger patients and in the higher socio-economic groups. As the cost of computers continues to fall and access to the Internet is made more available its place as a source of information is likely to increase.

The longer time lapse in the referral system before attendance at a higher level of health care and the uncommon nature of many of these chronic conditions may explain the greater consultation of the Internet in elective clinics, especially in tertiary referral centres. The significantly lower level of usage in patients after injury may represent the shorter time before attendance at a clinic.

The quality of information on the Internet is uncertain.^{1,6} Beredjikian et al⁸ found that the source and content of information about the carpal tunnel syndrome on the Internet to be of limited quality and of poor value. Attempts have been made to apply guidelines to medical web sites

but these have not succeeded in ensuring that the content is fact rather than fiction.^{9,10} Our study confirms that sites visited by patients were most often non-peer-reviewed (35%), with only 20% visiting proper medical sites. This may lead to variable quality, misinformation and heightened anxiety. The orthopaedic surgeon may have to learn to manage "cyberchondria".¹⁰

In 2001, traditional sources of information still predominate, but as more widespread use of the Internet will make it a prime source of information. Orthopaedic surgeons will need to be involved in providing peer-reviewed knowledge of good quality for their patients.

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