

Refereed papers

Primary care physicians' experiences of carrying out consultations on the internet

Göran Umefjord MD

General Practitioner, Nyland Health Centre, Nyland, Sweden

Hans Malker PhD

Research Director

Niclas Olofsson MSc

Statistician

Mid-Sweden Research and Development Centre, County Council of Västernorrland, Sundsvall, Sweden

Lars-Olof Hensjö MD

General Practitioner and Senior Medical Adviser, Infomedica AB, Stockholm, Sweden

Göran Petersson MD PhD

Senior Adviser and Associate Professor, Pedagogical Development and Research Unit, Linköping University, Linköping, Sweden

ABSTRACT

Background The internet is increasingly used for health matters, including consulting a doctor. Primary care physicians (general practitioners) will probably be involved in performing text-based consultations on the internet as a complement to physical meetings. In the present study, we explored the experiences of GPs already performing consultations on the internet: the challenges, worries and educational demands of the task.

Materials and methods A questionnaire was given to 21 GPs performing consultations on the internet for a public, non-commercial 'ask the doctor' service. The questionnaire was carried out at a meeting or sent by mail. The doctors answered a total of 28 questions, 12 of which included graded alternatives.

Results The participating GPs were stimulated and challenged by performing consultations on the internet with previously unknown enquirers, in spite of limitations caused by the lack of personal

meetings and physical examinations. The participants experienced a high educational value as a result of the problem-based learning situation induced by unfamiliar questions. The asynchronous feature was appreciated as it allowed time to reflect and perform relevant information searches before replying. Prior training and long-term experience as a family doctor were recommended before embarking on this method of consultation.

Conclusions We conclude that the GPs studied experienced their new role as internet doctors mainly in a positive way, with some limitations. With the increase in consultations on the internet, training in this technique should be integrated into the curricula of medical schools and of continuous professional development (CPD).

Keywords: information services, internet, remote consultation

Introduction

Today, internet users in the United States are as likely to go online when they need medical information as they are to contact a medical professional.¹ Likewise, doctors go online to seek information.² When doctors give remote consultations, they are sometimes

known to the individuals, but at certain internet-based 'ask the doctor' services the enquirer and the doctor are unknown to each other.³ The doctors answering enquiries on the internet have been called 'cyberdocs'.⁴ In this paper we use the term *internet doctor* to refer to doctors performing consultations on the internet without any previous relation to the enquirer.

Internet doctors are being exposed to new demands not yet discussed at medical schools. Although trained for physical examinations and for dialogues face to face, the internet doctor now has to handle medical issues using written text only.

In the present study, we wanted to explore a group of general practitioners' (GPs') experiences of performing text-based consultations on the internet. How did these internet doctors experience the task and this new role in general? How did they feel about the incoming enquiries? Was the information content of the enquiries sufficient? Did the internet doctors have to look for supplemental information to answer the enquiries? What preparation is recommended to handle the challenges of the new role of internet doctor?

Materials and methods

In March 2001, a group of GPs performing consultations on the internet at a Swedish 'ask the doctor' service answered a questionnaire about their experiences of being internet doctors. Since the start of the service in 1998 until the time of the study, a total of 23 Swedish GPs had been employed and paid on a part-time basis. At the time of the study, 21 (10 male, 11 female) internet doctors were working for the service, and all completed the questionnaire. One previously employed internet doctor also received the questionnaire but declined to participate, claiming that too much time had passed since he left the service. Another doctor who had previously worked with the service was not sent the questionnaire for health reasons.

The participants completed the questionnaire at a meeting ($n=13$) or by mail during the same period of time ($n=8$). The female and male internet doctors were close in age and post-graduation clinical experience. The average age was 49.0 (36–56) years; males 48.8 (36–56) years, females 49.1 (41–56) years. The average experience as a graduate family doctor was 13.7 (3–25) years for both male and female doctors. In addition to family medicine, seven of the 21 doctors were also certified in another specialty, such as obstetrics/gynaecology, infectious diseases or internal medicine. At the time of the study, the internet doctors had been performing internet-based consultations on average for 21.9 (5–29) months and had answered approximately 650 (150–1200) enquiries each.

The 'ask the doctor' service

Since October 1998 a Swedish non-profit public organisation, Infomedica (www.infomedica.se), has run a health service site with a free-of-charge option

to make personal enquiries related to health and diseases via the internet. All enquiries are answered by GPs who have the opportunity to define their areas of interest, but who are still expected to be able to answer enquiries within a broad medical spectrum. The name of the answering doctor is given to the enquirer at the same time that the answer is presented.

The enquirer may remain anonymous if they prefer. Other than giving the mandatory information of age group and gender, there are no pre-defined rules for the enquirer. The length of an enquiry may vary from one sentence to several pages. The content of each enquiry can range from short simple questions on common diseases, treatments or drugs to very complex enquiries concerning rare diseases, new treatments, and so on. From the start of the service until the time of the present study a total of 18 500 enquiries had been received and answered.

The questionnaire

The themes included in the questionnaire given to the internet doctors were, in addition to personal data: previous computer and internet experience; quality aspects of the incoming enquiries (for example difficulty, aspects of medical safety, familiarity with the content of the questions); information retrieval needed before answering; what training would they recommend before commencing as an internet doctor.

Of a total of 28 questions in the questionnaire 12 were of fixed alternative-type and with the opportunity to add free-text. The remaining questions were answered by free-text only or by a number. A text analysis of the free-text answers was performed by two of the authors independently by the process of transcription, analysis of meaning and content, coding and grouping into themes.

The results are presented in absolute numbers and as a percentage of the responding participants.

Results

Working conditions of performing consultations on the internet in general

All of the participating GPs found the task of performing consultations on the internet *often* or *very often* stimulating, and *seldom* or *never* monotonous or boring. The majority, 90% (19/21), found the task *often* or *very often* challenging. All participants found the task educationally rewarding (see Figure 1), and

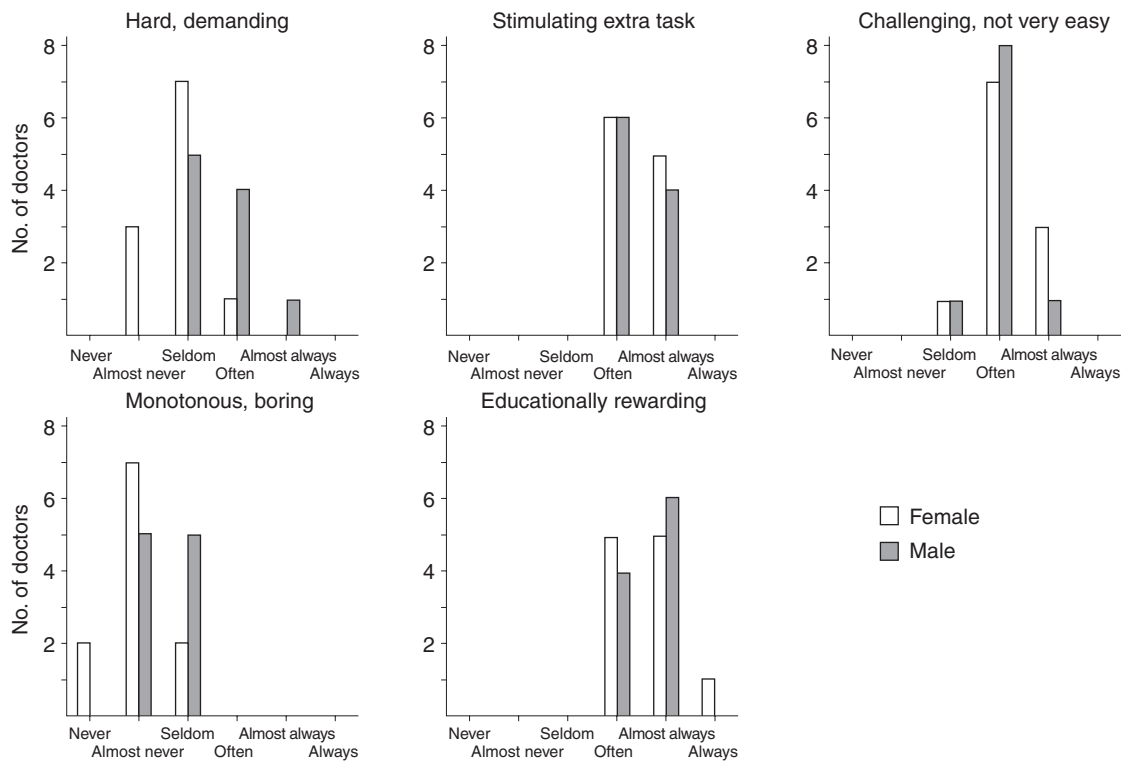


Figure 1 The results of the question 'How do you as a doctor in general experience the task of being an internet doctor?' ($n=21$)

would recommend their colleagues to take part after suitable training.

Difficulties with the incoming enquiries

The incoming enquiries were regarded as *rather often a bit difficult to answer* by 38% (8/21) of the participants, whereas 48% (10/21) found them *rather often easy to answer* and 14% (3/21) found *most* enquiries *easy to answer*. It was commented that the degree of difficulty of the enquiries varied. One of the participants expressed the opinion that 'most enquiries can

be easy, but at the same time quite a few are difficult to answer', another that the enquiries 'often are highly specialised'.

Quality aspects of the difficulties

The text content provided by the enquirers was found to be insufficient by 81% (17/21) of the internet doctors: 'a few but still too many enquiries are too short, yet ask for a very thorough answer'. More than half of the participants, 62% (13/21), found the enquiries *often* or *rather often* hard to answer without a physical examination (see Table 1). Other comments

Table 1 The results of the question 'What difficulties did you experience with the enquiries?' ($n=21$)

	Very often	Often	Rather often	Rather seldom	Seldom	Almost never
Too little information	0	8	9	3	1	0
Not familiar with the question	0	2	5	11	3	0
Hard to answer without examination	0	4	9	4	4	0

on the difficulties were that the question could be vague, ambiguous or linguistically hard to interpret. The underlying meaning of the enquiry could be hard to discover: 'what was the enquirer's real problem or worry?' The ability to interpret the enquiries correctly, including 'reading between the lines', was emphasised.

Familiarity with the enquiries

The participating doctors replied to the question 'How often do you get enquiries that you do not usually meet in your regular clinical practice?' that it seldom occurred (responses: *always*, 0; *almost always*, 1 (5%); *often*, 4 (19%); *not very often*, 14 (67%); *almost never*, 2 (10%); *never*, 0).

Medical safety

Ten of the participants (48%) answered the question 'How often do you find the information content of the question sufficient to formulate an answer with acceptable medical safety?' *almost always* and the remaining 11 (52%) *often*. Some participants added the comment that medical safety could be achieved by recommending that the enquirer make an appointment with their regular doctor.

Information retrieval before answering

The participants were instructed to allocate the alternatives a total of 100% when answering the question on the need for supplementary information before answering (see Table 2). On average, the participants could answer half of the enquiries (48%) without any search for supplementary information. When carrying out information searches, electronic media were more commonly used than were paper media. There was seldom a need to consult a colleague before answering.

Educational value

Five of the internet doctors (24%) answered the question 'How often do you, as a consequence of the task of performing text-based consultations on the internet, obtain new medical knowledge?' *almost always* and the remaining 16 (76%) *often*, supplemented by comments such as 'often very stimulating'; 'astonishingly often'; 'if not new it gives you a reason to keep up to date'. The subsequent question 'How do you evaluate this new knowledge from an educational point of view?' confirmed this attitude (responses: *very valuable*, 4 (19%); *valuable*, 11 (52%); *somewhat valuable*, 5 (24%); *of some value*, 1 (5%); *of little value*, 0, *of no value at all*, 0). One participant added: 'I learned to express myself better – useful in my regular clinic.'

Training recommended

On the free-text question 'What training would you recommend to facilitate the introduction of new doctors to performing text-based consultations on the internet?' the participants recommended: long-term experience as a family doctor; general computer training; training in the skills necessary to find reliable, up-to-date medical information on the internet; training in written communication using a plain, clear, distinct and easily understood language.

Usefulness for the population

The answers to the free-text question 'With a service such as Infomedica's, what is most valuable for the general public?' were categorised into the following themes: the opportunity to get a second opinion; the opportunity to ask anonymously; the opportunity to make sensitive enquiries; the opportunity to raise one's worries; easy access.

Table 2 The results of the question 'How do you locate the required medical knowledge before answering the enquiries?'

	Min-max (%)	Mean (%)
(a) From memory only	20–75	48
(b) Besides (a), from literature and other paper media	0–40	17
(c) Besides (a), from internet and other electronic media	0–48	22
(d) Besides (a), asks a colleague	0–10	5
(e) Besides (a), more than one of (b) to (d)	0–50	8
Total		100

Future role of health services on the internet

In reply to the question 'Do you believe that services on the internet will partly replace regular health care?', five participants (24%) believed that internet services might replace regular health care *to a rather high extent*. On the other hand, two participants (10%) believed that it would do so *to almost no extent at all*, while 14 (67%) believed that it might replace regular health care *to a small extent*.

Discussion

In the present study, we found that the participating GPs on the whole were stimulated and challenged by the task of performing consultations on the internet with previously unknown enquirers, in spite of the limitations caused by the lack of a personal meeting and a physical examination. Prior training was recommended before taking on this role.

The spectrum of enquiries posed to the 'ask the doctor' service ranges widely from simple and short ones to very complex medical questions, all answered by GPs. Other 'ask the doctor' services provide answers from doctors with specialist degrees other than family medicine, and some services restrict enquiries to certain medical issues. The variety of enquiries coming in to Infomedica might explain some of the satisfaction expressed by the participants who sometimes regarded them as a challenge to answer. The finding that a number of the incoming enquiries were experienced as *challenging* and *not very easy* to answer might explain why the internet doctors seldom or almost never reported the task as being *monotonous* or *boring*.

The participants experienced a high educational value, which might be explained by the fact that the sometimes unfamiliar enquiries motivated the internet doctors to keep up with medical progress: a problem-based learning situation was induced. Further support for the high educational value experienced could be the opportunity to perform searches on the internet in order to respond to the question. In contrast, it is seldom possible for the physician to perform information searches when meeting patients in the regular health service.

The satisfaction of performing consultations on the internet expressed by most of the doctors was in contrast to their experience that the information content of the incoming enquiries was insufficient, and to the difficulty of answering many enquiries without any physical examination. In addition to the educational value, an alternate reason for this satisfaction might be that the participating doctors were

positively recruited to the 'ask the doctor' service. Many of the doctors had long-term computer and internet experience in addition to experience of family practice. Seven doctors also had another specialist degree. Thus, the positive attitudes found in the present study might be explained by this particular cohort of doctors, and are possibly not representative of GPs in general.

Some of the participants expressed their appreciation of communicating in writing. This might partly be due to the possibility of reflecting on the answer before submitting it. However, the lack of feedback and of opportunity to get further information from the enquirer are important limitations with anonymous text-based consultations on the internet, supported by the present study. On the other hand, the lack of dialogue, and also of a previous relationship between the enquirer and the internet doctor, might be regarded as a prerequisite when the questioner actually wants to remain anonymous.

Moreover, the reason for the enquiry may also be based on a misunderstanding of previous information given by a regular doctor. Since the enquiry frequently contains a desire for a second opinion, the internet doctor is often expected to comment on the performance of the regular doctor.³ To do this requires considerable caution. The internet doctor has to be fully aware of the fact that their answer might influence the trust between the enquirer and his/her regular doctor. Thus, if the internet doctor's evaluation differs from that of the regular doctor, it has to be expressed with a great deal of diplomacy in order to avoid jeopardising the patient-doctor relationship.⁵ The problem of insufficient information in the enquiries can be handled by a recommendation to consult the patient's regular doctor again and by following the recommendation that 'medically trained cyberdocs should be careful about answering diagnostic questions, limiting their advice strictly to general health questions'.⁴

Communication patterns between doctors and patients will in all probability change in the future due to these new ways of communicating via the internet. Patients want to communicate with their doctors by email, and get access to other internet-based services such as laboratory results or scheduling appointments.⁶ Internet-based consultations can be differentiated into two categories: a group of previously well-known patients who want advice or to receive information from their regular doctor, and a previously unknown group that may want to remain anonymous or to have a second opinion.⁷ These categories require different types of behaviour by the doctors involved.

We conclude that the GPs studied experienced their new role as internet doctors mainly in a positive way, with some limitations. In the present study, the participants wanted to improve their performance by

further education in how to carry out consultations on the internet. Certainly there is a need for 'cybermedical skills for the internet age'.⁸ We suggest that training in how to carry out consultations on the internet should be an integrated part of the curricula of medical schools, and also of continuous professional development (CPD). Such an education should not only include general rules on how to provide text-based answers, but also techniques on how to carry out literature searches on the internet, the clinical application of evidence-based medicine, and legal and ethical aspects of internet-based consultations, as part of the subject of medical informatics.⁹⁻¹¹

ACKNOWLEDGEMENT

The study was supported by grants from the County Council of Västernorrland, Sweden.

REFERENCES

- 1 Horrigan JB and Rainie L. Counting on the Internet: most expect to find key information online, most find the information they seek, many now turn to the Internet first. *The Pew Internet & American Life Project* (2002). www.pewInternet.org/reports/toc.asp?Report=80
- 2 Taylor H and Leiman R. The increasing impact of E-health on physicians' behaviour. *Harris Interactive Health Care News* (2001);1(13). www.harrisinteractive.com/news/newsletters/healthnews/HI_HealthCareNews2001Vol1_iss31.pdf
- 3 Umefjord G, Petersson G and Hamberg K. Reasons for consulting a doctor on the internet: web survey of users of an 'ask the doctor' service. *Journal of Medical Internet Research* 2003;5(4):E26. www.jmir.org/2003/4/e26/index.htm
- 4 Eysenbach G and Diepgen TL. Evaluation of cyberdocs. *Lancet* 1998;352(9139):1526.
- 5 Widman LE and Tong DA. Requests for medical advice from patients and families to health-care providers who publish on the World Wide Web. *Archives of Internal Medicine* 1997;157(2):209-12.
- 6 Couchman GR, Forjuoh SN and Rascoe TG. E-mail communications in family practice: what do patients expect? *Journal of Family Practice* 2001;50(5):414-18.
- 7 Ferguson T. From doc-providers to coach-consultants: type 1 vs. type 2 - provider-patient relationships. *The Ferguson Report* 2001;7. www.fergusonreport.com/articles/tfr07-01.htm
- 8 Prutkin JM. MSJAMA: cybermedical skills for the Internet age. *Journal of the American Medical Association* 2001;285(6):808.
- 9 Eysenbach G. Towards ethical guidelines for dealing with unsolicited patient emails and giving tele-advice in the absence of a pre-existing patient-physician relationship: systematic review and expert survey. *Journal of Medical Internet Research* 2000;2(1):E7. www.jmir.org/2000/1/e7/index.htm
- 10 Spielberg AR. On call and online: socio-historical, legal, and ethical implications of email for the patient-physician relationship. *Journal of the American Medical Association* 1998;280(15):1353-9.
- 11 Dyer KA. Ethical challenges of medicine and health on the internet: a review. *Journal of Medical Internet Research* 2001;3(2):E23. www.jmir.org/2001/2/e23/index.htm

CONFLICTS OF INTEREST

GU and LOH serve as internet doctors and as co-ordinators at Infomedica's 'ask the doctor' service. LOH serves as medical director for Infomedica.

ADDRESS FOR CORRESPONDENCE

Göran Umefjord MD
Nyland Health Centre
Biskopsgatan 1
SE-870 52 Nyland
Sweden
Tel: +46 612 771500
Fax: +46 612 22962
Email: umefjord@ymex.net

Accepted April 2004