

The Use of Internet to Search for Health Information Before Surgery: A Descriptive Study

Fazila Abu Bakar Aloweni, RN, Adv Dip(Nephro-Urology), BN, Sri Sukarti Mostafa, RN, Dip in Nursing, BN

Department of Nursing, Singapore General Hospital

ABSTRACT

Introduction: The Internet is becoming increasingly important as a source of health information. In Singapore, two in three households have access to Internet at home and the proportion of Internet users is rising each year¹. This study seeks to investigate the characteristic of patients who used the Internet to seek for health information before scheduled surgery and their preferred mode of education from the healthcare professionals.

Methods: This study was carried out in a general surgical ward. Using convenience sampling, subjects were asked to fill up a standard set of closed-ended questionnaires, which consist of the patients' demographics data, their perception of using the Internet and their preferred mode of education from the health-care professionals.

Results: A total of 107 subjects completed this study. The percentage of subjects who owned a computer and had access to the Internet were 90%. Higher level of education and income were more likely to search the Internet before their operation ($p=0.03$). There was no significance difference between age group and Internet search ($p=0.574$). The most preferred mode of education were Internet-based when discharge from the hospital ($n=48$).

Conclusions: The findings showed that patients and their love ones are taking a pro-active approach in their health and are resourceful in acquiring information about their surgery. Nurses play a vital role in providing patient education and guiding them to a reliable and accurate websites. Hence, it is imperative to adopt an Internet-based education especially for the IT-literate population.

Keywords: health education, Internet, online, pre-operation, teaching.

INTRODUCTION

Surgery can be a stressful time for patients and their families. It often brings about anxiety and fear¹. Traditionally, patients will turn to healthcare professionals for advice before surgery. However, with the accessibility of the Internet, many patients and families have started using it instead. The Internet has become an important source of health information. In Singapore, two in three households have access to Internet at home and the proportion of Internet users is rising each year². Hence, today's patients have access to more health-care information than ever before. Non-traditional source of information, namely the Internet are quickly becoming the norm by which

patients learn about their medical conditions and treatment options. And at the same time, direct communication between healthcare provider and patients has become more limited due to shorter hospitalisation stay and limited time available in busy clinical practices. It has been argued that the driving force behind the demand of online health information is the shortage of information from the traditional source³.

Patients and their families desire information regarding their diagnosis, prognosis, treatment options and often relied on the healthcare professionals. The proliferations of the health-related websites have provided a new paradigm toward patient education. Patient education is an important aspect of nursing intervention. In

* Presented at the 18th Annual Scientific Meeting 2009 held on 17-18 April 2009 for Best Oral Presentation .

Table 1. Annual Income and Education Level vs Internet Search.

Annual Income	Internet Search				Education Level	Internet Search		
	Yes	No	Total	%		Yes	Total	%
<\$20,000	7	21	28	25	Primary	0	10	0
\$20,001 - \$50,000	19	17	36	53	Secondary	21	60	35
\$50,0001 - \$80,000	10	5	15	67	Certificate	11	23	48
>\$80,000	20	8	28	71	Diploma	27	41	66
					≥ Degree	41	67	61

Higher level of education and income were more likely to search the Internet before their operation (p=0.03)

the study done by Leino-Kilpi et al⁴, on the effect of patient education on health-related quality of life; found that there are positive relationship between received knowledge and health-related quality of life. The benefits of being well-versed in one's medical conditions as claimed by Huang⁵ is that, a well-informed health care consumer is more likely to get better treatment from their healthcare providers and are more compliant to their treatment plan which would result in positive patient outcomes. However, the only concern is the quality of online health information that might conflict with the healthcare professionals' advice.

The focus of this study was to investigate the proportion and the characteristic of patients who used the Internet to search for health information before their scheduled surgery. The finding from this study has created an awareness of the need to integrate Internet-based education for IT-literate population to match their educational needs.

METHODS

This is a prospective study investigated the characteristic of patients who used the Internet to search for health information before their surgery. This study was carried out in a general surgical ward from May 2008 to December 2008. Permission to conduct this study was obtained from the Institutional Review Board and research ethics committee.

All patients who were admitted to ward 57 during the study period and had consented to the study were required to complete a standard set of closed-ended questionnaires before their discharge. Patients were excluded if they were

too ill, unable to understand English, had vision impairment, cognitive problem, and those who needed emergency operation. The questionnaire consists of the patients' demographics data such as age, gender, occupation status, annual income, and education level (Appendix 1). For Internet user, they were asked on their opinion of the usefulness and reliability of the online information. Subjects were also asked on their preferred mode of education when discharged from the hospital.

Descriptive frequencies were used to analyse the data. Nonparametric tests (chi-square or Fishers exact test) were used to analyse the association between age, income and education level on Internet usage. Statistical tests were two-tailed and exact significance levels (p value) were calculated and presented.

RESULTS

A total of 115 subjects met the inclusion criteria, in which 7 declined to participate because of they were still anxious about their operation. This had incurred as 6% of non-response rate. A total of 108 subjects were enrolled but 1 dropped out of the study because of poor family support towards the participation. The average subjects age was 46.75 years old (SD=13.482), and 63% of subjects were female. From the study, 90% of the subjects owned a personal computer and have Internet access at home. Out of which, 63% of the subjects used the Internet daily. The percentage of the subjects who had searched the Internet themselves were 52% and for those who did not, 51% of the searches were done by their family members' and friends, particularly for those who are not IT-literate. Higher level of education and income were more likely to

Table 2. Internet Search vs Age.

Age Group	Internet Search	
	Yes	No
18–25	4	1
26–33	4	3
34–41	13	7
42–49	15	12
50–57	9	12
58–65	8	10
66–73	1	3
74–81	2	3

There was no significant difference between age group and Internet search ($p=0.574$)

search the Internet before their operation ($p=0.03$) (Table 1). There is no significance difference between age group and those who did the search online ($p=0.574$) (Table 2). All of the subjects who searched online thought that the information obtained were useful, moderately useful and very useful and none said it wasn't useful at all (Fig. 1). When asked about their perceptions on the reliability of the information on the Internet, 44% thought it is "accurate" or "somewhat accurate" whereas 20% were still unsure (Fig. 2). The main reason behind the need to search for information online was for better understanding (64%) and for additional knowledge (57%) (Fig. 3, overleaf). In this study, 45% of the subjects preferred Internet-based education as a mode of teaching after discharge from the hospital, followed by personal contact as compared to printed materials such as booklet or brochure (Fig. 4, overleaf).

DISCUSSION

There are multiple sources of health and hospital related information that one can acquired from before their scheduled surgery. Very often surgeons, clinic nurses and anesthetist in the pre-admission clinic would have discussed with patients about the operation. Patients can also turn to friends and relatives for such information. Although there are many websites that has such information, 35% of patients who undergone laparoscopic cholecystectomy operation still preferred health information to be provided through direct contact with a health professionals. This was the finding of a recent study done by Blay and Donoghue⁶.

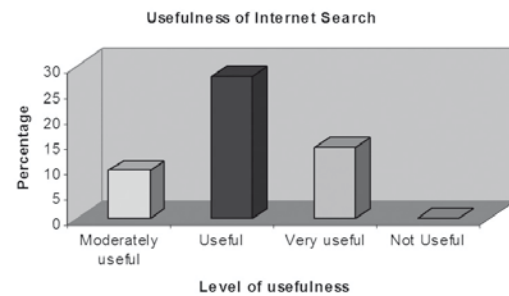


Fig 1. Usefulness of Internet Search

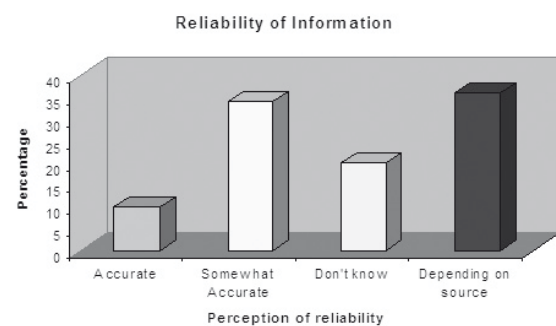


Fig 2. Reliability of information on Internet

However in contrast to this study, the subjects preferred Internet-based mode of information instead because they can access the information online at their convenience.

Many studies concluded that younger, more educated, higher income and more women than men are more likely to search for health information online⁷⁻⁹. However in this study, it was unable to conclude if more women than men had accessed the Internet for health information because of the limited sampling size. Nevertheless, this study agreed that higher level of education and higher income earner are more likely to search the Internet before their operation ($p=0.03$), and there were no significance difference between age group and Internet search ($p=0.574$) (Table 2).

There is the concern that the older populations were being left out with such a valuable source of information. In the era of self-care paradigm, it is important that these aging populations are

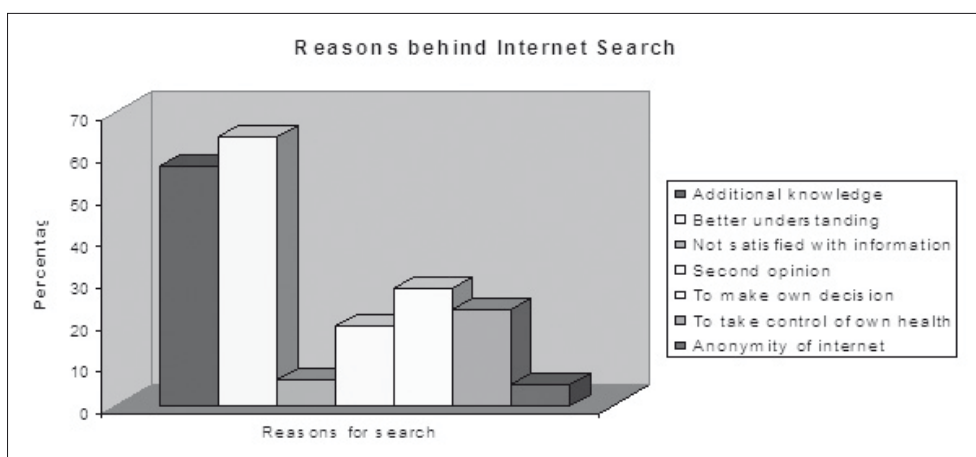


Fig 3. Reasons for searching the Internet

equipped with knowledge to better manage their chronic illnesses. However, according to Gibbons¹⁰, health information from the Internet may even reach people without Internet access, as information acquired from the Internet is spread by online seekers to others in their communities by print, word of mouth, or other multimedia applications. In addition, the online seekers can also perform search on behalf of their relatives, partners, children, or friends. This was proven in this study where 51% of the search was done by their family and friends. Therefore, the Internet may still be useful tool even for the non-users as well.

LIMITATIONS

The nature of surgery has a manner on patient's anxiety to find out more about the operation. This study had included all types of surgeries ranging from laparoscopic herniorrhaphy to open gastrectomy. Perhaps a more homogenous sample would have greater significance; given the fact that an open heart surgery has higher risk of complications than a simple incision to remove a cyst. Another limitation in this study is the inclusion of only English-speaking subjects. Perhaps in future all other languages should be included because as shown in this study, family's members did the search online on their behalf and at the same time, this will increase the sampling size.

CONCLUSION

The findings showed that more patients are taking a pro-active approach in their health and are more

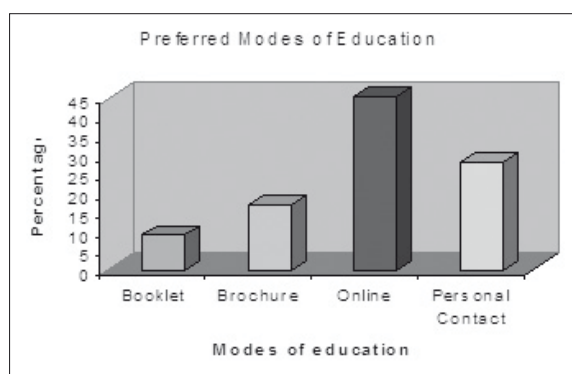


Fig 4. Subjects' preferred mode of education

resourceful in acquiring information about their surgery. The Internet may replace the traditional mode of patient education in this IT (Information Technology) era. The delivery of healthcare has changed dramatically in the past few years and probably will continue to do so. Nurses must retain their traditional values of caring, compassion, empathy, diligence, and commitment but also must be prepared to be creative in the use of new technology in the nursing care of patients. As nurses played a vital role in providing patient education, guiding them to a reliable and accurate websites is paramount. For education to be effective, online health information must be of good quality and reliable. Conflicting or poor-quality information may be harmful or counter education efforts¹¹. As recommended by Jones¹²,

websites hosted by governmental or professional and reputable healthcare organization are more reliable and is of good quality. Therefore, nurses can advice patients to go to such sites. More research is needed to assess the quality of online health information. Nevertheless, there is the need to integrate IT into patient care.

ACKNOWLEDGEMENT

The researchers are grateful to the patients who shared their experience and to the nurses in the general surgical ward 57 for their support.

REFERENCES

1. Hering K, Harvan J, D'Angelo, Jasinski D. The use of a computer website prior to scheduled surgery (a pilot study): impact on patient information, acquisition, anxiety level, and overall satisfaction with anaesthesia care, *AANA J*, 2005 Feb;73(1):29-33.
2. Lee MC. Infocomm usage by households and individuals 2000-2005. *Statistic Singapore Newsletter*, 2006; 17-19.
3. Eysenbach G, Diepgen TL. The role of e-health and consumer health informatics for evidence-based patient choice in the 21st century. *Clin Dermatol*, 2001 Jan-Feb;19(1):11-17.
4. Leino-Kilpi H, Johansson K, Heikkinen K, Kaljonen A, Virtanen H, Salanterä S. Patient education and health-related quality of life. *J Nurs Care Qual*, 2005 Oct-Dec;20(4):307-16.
5. Huang QR. Creating informed consumers and achieving shared decision making. *Aust Fam Physician*, 2003 May; 32(5):335-41.
6. Blay N, Donoghue J. Source and content of health information for patients undergoing laparoscopic cholecystectomy. *Int J of Nurs Pract*, 2006 Apr;12(2): 64-70.
7. Boer MJD, Versteegen GJ, Wijhe MV. Patients' use of Internet for pain-related medical information. *Patient Education and Counseling*, 2007;68:86-97.
8. Mayer DK, Terrin NC, Kreps GL, Menon U, McCance K, Parson SK, Mooney KH. Cancer survivors information seeking behaviors: a comparison of survivors who do and do not seek information about cancer. *Patient Education and Counseling*, 2007;65:342-350.
9. Bowen DJ, Meischke H, Bush N, Wooldridge JA, Robbins R, Ludwig A, Escamilla G. Predictors of women's Internet access and Internet health seeking. *Health for Women International*, 2003;24:940-951.
10. Gibbons M. A historical overview of health disparities and the potential of eHealth solutions. *Journal of Medical Internet Research*, 2005; 7:e50. Available at <http://www.jmir.org/2005/5/e50/> Accessed March 6, 2009.
11. Salo D, Perez C, Lavery R, Malankar A, Borenstein M, Bernstein S. Patient education and the Internet: do patients want us to provide them with medical web sites to learn about their medical problems? *The Journal of Medical Emergency Medicine*, 2003; 26(3):293-300.
12. Jones J. Patient education and the use of the world wide web. *Clinical Nurse Specialist*, 2003; 17(6):281-283.

QUESTIONNAIRE

Code number: _____

Questionnaire

The purpose of this questionnaire is to gather information about your demographics data and your perception of using the Internet to access health information. Please answer the following questions:

Please tick or write down your answer.

1. Do you have a computer at home?
☐ Yes ☐ No
2. Do you have an Internet service at home?
☐ Yes ☐ No
3. How often do you use Internet?
☐ Daily ☐ Weekly ☐ Monthly ☐ Yearly ☐ Never
4. Have you searched the Internet for health related information before this surgery?
☐ Yes ☐ No
5. If you answered Yes to question #4, how useful did you find that information?
☐ Not useful ☐ Moderately useful ☐ Useful ☐ Very useful
6. Did any of your family members or friends help you searched the Internet for health related information before this surgery?
☐ Yes ☐ No
7. Why do you or your family members / friends search the Internet for health information?
(You may tick more than 1 answer)
☐ For additional knowledge.
☐ For better understanding of my health problem.
☐ I am not satisfied with the information given by the healthcare professionals.
☐ For second opinion.
☐ To make decision on my treatment options.
☐ To take control of my own health.
☐ For anonymity of the Internet when discussing sensitive issues.
8. What are your perceptions of the reliability of the information on the Internet?
☐ Accurate ☐ Somewhat ☐ Don't know ☐ Depending on the source ☐ Never accurate
9. After discharge from SGH, would it be useful to have access to information on post- operation home care through an Internet website?
☐ Not useful ☐ Moderately useful ☐ Useful ☐ Very useful
10. How would you prefer your discharge teaching material to be delivered to you?
☐ Booklet ☐ Brochure ☐ Computer ☐ Personal Contact by phone

Demographics

11. What is your age group?
☐ 18-25 ☐ 26-33 ☐ 34-41 ☐ 42-49 ☐ 50-57 ☐ 58-65 ☐ 66-73 ☐ 74-81 ☐ >81 yrs old
12. Please provide your marital status:
☐ Single ☐ Married ☐ Widowed ☐ Divorced ☐ Separated
13. What is your gender?
☐ Male ☐ Female
14. What is your race?
☐ Chinese ☐ Malay ☐ Indian ☐ Others; _____
15. What is your highest education qualification?
☐ Primary ☐ Secondary ☐ Certificate ☐ Diploma ☐ Degree, & above
16. What is your employment status?
☐ Full-time employed ☐ Part-time employed ☐ Not employed ☐ Retired ☐ Student
17. What is the nature of your occupation?
☐ Banking / Finance / Insurance ☐ Retail
☐ Government/ statutory board ☐ Hotel / Restaurant / F&B
☐ IT & Communication ☐ Manufacturing
☐ Uniform Group ☐ Others
18. What is your household income range per year?
☐ < \$20,000 ☐ \$20,001 to \$50,000 ☐ \$50,001 to \$80,000 ☐ > \$80,001