The Internet as a health information source for university students

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As the prevalence of those seeking health information online rises, the potential for information overload and misinformation increases. This study aims to evaluate and explore the Internet's role as a health information source, specifically for university students. In total, 120 university students were surveyed for their behaviours and attitudes when accessing online health information. Of the respondents, 61% had used the Internet as a personal health information source at least once in the past and 34% do so at least once a month. In comparison with other common information sources, the Internet was the third most commonly used (41%) behind General Practitioners (73%) and family and friends (60%). Despite this frequency of use, only 5% of participants regarded the Internet to be very accurate, while 27.5% had found health information on the Internet to be misleading. Online health advice had delayed appropriate medical treatment at least once for 28% of participants. Both information inaccuracy and treatment delay pose risks to health outcomes. The findings from this research provide a useful starting point for future research into Australian Internet health information seeking behaviour.

Introduction

Today, consumers have access to a diverse range of health information sources. Online health information seeking has been increasing amongst adults because the Internet offers convenient and abundant information. Twenty-seven percent of Australian Internet users seek health information online. [1-3] Accompanying this usage come the potential issues of information overload and misinformation. Other issues for consideration include complicating the doctor-patient relationship with inappropriate requests, delays in effective health treatment due to self-diagnosis, and misdiagnosis leading to adverse health outcomes. [4,5]

There are several key reports considering the quality of online health information, though most focus on the general population. [2,6,7] A study focusing primarily upon university students, a population subgroup for whom the Internet is an integral part of daily communication, has not previously been undertaken. [8,9]

Methods

The sample group for this study was Monash University students at the Clayton campus aged eighteen years and above. Approval for this project was obtained from the Monash University Standing Committee on Ethics in Research Involving Humans (SCERH).

A previously piloted survey designed by the authors was used to collect quantitative and qualitative data anonymously from university students on campus. Participants were selected at random and then invited to complete the self-administered survey. The key measures of interest were the frequency of student access to health information and the perceived reliability of online health information. Four different hypothetical health complaints (common cold, neck swelling, genital issues and depression) were used to study where and in which order health information would be potentially accessed for each scenario. Each health information source was ranked by number of people placing that source amongst the first three sources they would have accessed. The data was analysed using Microsoft® Excel 2003 and SPSS Graduate Pack Version 16.0 (SPSS, Inc., Chicago IL).

Results

One hundred and twenty-five surveys were distributed and 120 returned (response rate of 96.0%). The gender distribution was almost equivalent (52% male, 48% female), while 82% were aged 22 years or younger. In terms of faculty and course, medical students were the

highest represented (28%), followed by science students (17%) and engineering students (14%).

A General Practitioner (GP) was the most commonly used health information source (73%), closely followed by family and friends (60%), with the Internet being the third most accessed (41%) (Figure 1). Of the participants, 44.2% reported experiencing conflicting information in the past.

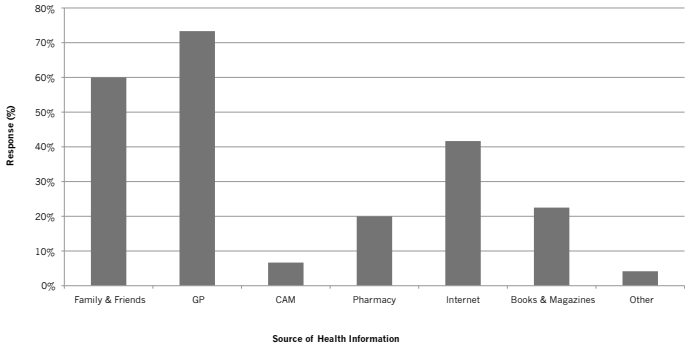

Figure 1. *Health information source used to access information (n=120).*

The use of the Internet as a health information source varied according to the type of hypothetical health problem presented (Table 1). For both the 'common cold' and 'neck swelling' the Internet was the fourth most popular health information source behind the GP, family and friends, and the pharmacy. However, for 'genital issues' the Internet was a more popular health information source, ranking second after the GP as the preferred information source. For 'depression' the Internet ranked third.

Of all participants, 73 (60.8%) had used the Internet as a personal health information source at least once, while 36 (30.0%) had looked up health information for others. The frequency of online health seeking was widely distributed, with 21 participants (52.6% of those who had searched online) doing so at least monthly. Google (www.google.com) was the most frequently used website.

When judging the quality of online health information, only 5.0% of participants deemed the Internet to be 'very accurate' (Figure 2). Of all participants, 27.5% had found health information on the Internet to be misleading. Twenty-eight point three percent of participants reported delaying appropriate medical treatment due to online health advice at least once, yet in most of the delayed cases, this had only occurred once or twice (85.5%).

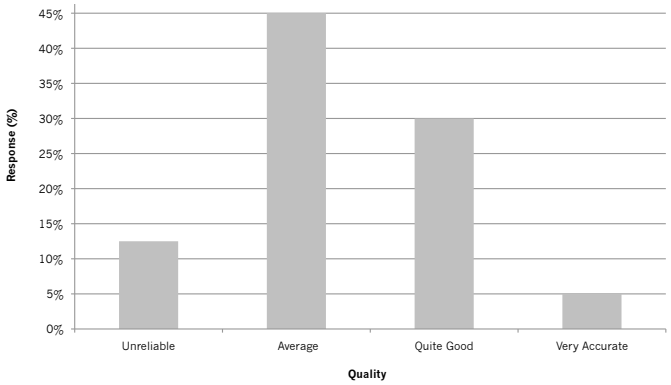

Figure 2. *Perceived quality of Internet health information by participants (n=120).*

Medical students were three times more likely to have found websites to be misleading than non-medical students (52.9% versus 17.4%, p=0.001). Most medical students (61.8%) rated the quality of health information to be 'quite good' compared to most non-medical students (55.8%) rating it as only 'average' quality.

Medical students searched for health information at much higher frequencies than their non-medical peers (p<0.001) (Figure 3). Table 2 shows that medical students were more likely to use a wider range of health information sites (such as the peer-reviewed eMedicine and Government health sites,) with non-medical students leaning towards general search engines (82.0% of non-medical respondents vs. 50.0% for medical respondents).

A total of 60.8% of participants agreed that the Government should provide better health information, with suggestions ranging from discussing mental health issues to creating more reliable Internet health sites. When asked about the best method of learning more about online health information, the two most popular choices were brochures (49.2%) and websites (50.0%).

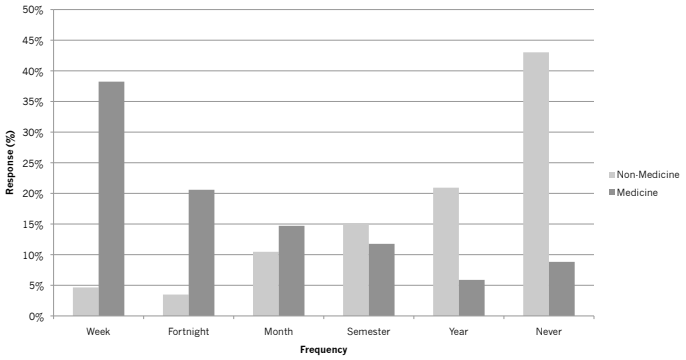

Figure 3. *Frequency of online health information seeking (n=116). Light grey = non-medical respondents, dark grey = medical respondents.*

Table 2. *Health websites accessed by respondents.*

Online resource	Medical students (n=26)	Non-medical students (n=28)
Google	12	17
General search engines	1	11
eMedicine	12	0
Library databases	5	3
Government-sponsored health sites	4	1
Other health sites	6	2
Percent respondents selecting more than one source	35%	18%

Table 1. *Health information source used for hypothetical health complaints.*

	Common Cold (n=120)		Neck Swelling (n=117)		Genital Issues (n=117)		Depression (n=117)	
Source	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Family and friends	1	93	1	106	3	64	1	97
General Practitioner	2	89	2	85	1	103	2	74
Pharmacy	3	85	3	55	4	50	4	29
Internet	*4*	*25*	*4*	*37*	*2*	*65*	*3*	*55*
Complementary therapy	5	24	5	31	6	15	5	19
Books	6	11	6	13	5	29	5	19

Discussion

The results of this study demonstrate that the Internet is a commonly-used health information source for Monash University students and is utilised by a higher percentage when compared to the general public. [1] GPs and "family and friends" do however remain the most important sources, perhaps because they are considered to be more familiar and trustworthy. Despite this, the Internet was preferred over books and pharmacies in this study. Increasing familiarity with the Internet amongst university students, coupled with the convenience of accessing online information, could be the reason why these other traditional and perhaps more reliable sources are bypassed.

Conflicting health information was reported to be a common occurrence. In some ways, this may not be a negative finding as it may increase awareness that some advice may not always be accurate. However, this could create confusion in patients and result in self-misdiagnosis.

It is interesting to note that the preference of sources varies with respect to the perceived severity and social stigma attached to the condition being investigated. For genital issues, respondents indicated an inclination towards a more private and personal source such as the Internet, presumably because they may feel less embarrassed. Findings were similar for depression – another condition which potentially be socially-stigmatised. This is in contrast to 'everyday' conditions such as the common cold, where family advice is generally perceived as adequate.

The results showed a statistically significant difference between medical and non-medical students, where medical students searched for online health information at higher frequencies than their non-medical peers. It could be suggested that medical students, due to their education, were more capable of identifying a higher number of misleading sites. Perhaps finding these sites in the past, or hearing about them from their peers, has helped them utilise more reliable sources. They used both a wider range of searching techniques as well as more reputable sources. This trend towards better quality sites is reflected by most medical students rating the quality of online information as higher than non-medical students.

Limitations

Participants were asked to recall information regarding their past actions. This relied on long-term memory, subjecting the survey to recall bias. The study was also subject to selection bias as the small sample population comprised of a large number of medical students and may not reflect the general student population at Monash University.

Conclusion

The results illustrate that a significant number of university students use the Internet for health information, with varying search techniques and frequencies of usage. The Internet ranked higher in importance for health problems of a personal nature, and lower for common minor ailments. However, many were unsure about its reliability and a considerable number delayed appropriate treatment. The combination of uncertainty and treatment delay poses significant risks to health outcomes and is an issue worthy of intervention.

The findings provide some initial data for use in future research into online health-seeking by Australian university students.

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References

[1] ACNielsen Consult. The second annual Australian eHealth study: impact of the Internet on health consumers, medical practitioners and pharmacists. Nov 2002. [Accessed 22 March 2005] Available from: URL:http://www.consult.com.au/pdf/eHealth2002Summary.pdf

[2] Bessell TL, Silagy CA, Anderson JN, Hiller JE, Sansom LN. Prevalence of South Australia's online health seekers. Aust NZ J Publ Heal 2002;26(2):170-3.

[3] Gauld R, Williams S. Use of the Internet for health information: A study of Australians and New Zealanders. Inform Health Soc Care 2009;34(3):149-58.

[4] Iverson SA, Howard KB, Penney BK. Impact of Internet use on health-related behaviors and the patient-physician relationship: A survey-based study and review. JAOA 2008;108(12):699-711.

[5] Murray E, Lo B, Pollack L, Donelan K, Catania J, White M, *et al.* The impact of health information on the Internet on the physician-patient relationship: Patient perceptions. Arch Intern Med 2003;163(14):1727-34.

[6] Bessell TL, McDonald S, Silagy CA, Anderson JN, Hiller JE, Sansom LN. Do Internet interventions for consumers cause more harm than good? A systematic review. Health Expect 2002;5(1):28-37.

[7] Charnock D, Shepperd S. Learning to DISCERN online: applying an appraisal tool to health websites in a workshop setting. Health Educ Res 2004;19(4):440-6.

[8] Gray NJ, Klein JD, Noyce PR, Sesselberg TS, Cantrill JA. Health information-seeking behaviour in adolescence: The place of the Internet. Soc Sci Med 2005;60(7):1467-78.

[9] Jimenez-Pernett J, Olry de Labry-Lima A, Bermudez-Tamayo C, Garcia-Gutierrez JF, Salcedo-Sanchez MD. Use of the Internet as a source of health information by Spanish adolescents. BMC Med Inform Decis Mak 2010;10:6.