

# College Students from Developing Countries: Where do they Get Health Information?

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## ABSTRACT

People from developing countries lack proper health knowledge to access and use health information. This creates disparity in health knowledge to locate and use health information between people from developed and developing countries. The disparity can be minimized through health information seeking which has the potential to reduce knowledge gaps across social groups and to educate individuals. In this paper, we describe the source of health information used by college students from a developing country. We survey a total sample of 49 undergraduate students using convenient sampling technique. We have found that students use the Internet and their family as the primary and secondary source of health information, respectively. The main Internet source used is Google. Results of this study provide information on health sources used by college students in developing country.

## CCS Concepts

• Applied Computing → Life and Medical Sciences → Consumer health.

## Keywords

Health; Information Seeking; Information Source; Developing Countries; College Students; Malaysia.

## 1. INTRODUCTION

Health information seeking (HIS) is a key strategy for health promotion campaigns and psychological adjustment to illnesses [14]. It can increase health knowledge [29], improve the ability to cope with stresses, and increase the ability for self-care management skills and commitment to treatments [14]. As a result, many research studies identified HIS as a key element of health communication for better health outcome.

HIS can be influenced by access to health information sources [1; 27], the credibility of the sources [27], and timely availability of sources [5]. For example, studies show that doctors are considered as credible sources of health information. On the other hand, people prefer the Internet over doctors as a result of convenience and expense issues [9]. In addition, the Internet gives prompt and easy access to health information [5]. However, there are differences among people in terms of access to health information.

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Access to health information is linked to income and education [9]. Consequently, people in high-income countries demonstrate a higher level of health literacy [19] and seek health information actively [1]. Conversely, people in developing countries have difficulties in accessing and understanding health information and technologies [24]. In addition, many people in developing countries lack proper health knowledge, influencing their ability to seek out and understand health information [24]. Hence, there is a disparity in access and use of health information among people in developed and developing countries. The US Agency for Healthcare Research and Quality report indicates that disparities in access to health information and technology can lead to lower preventive measures, lesser knowledge to manage chronic diseases, and poorer health conditions [3]. A strategy to improve access to health information and health literacy in developing countries could be providing appropriate health information through media where people can receive information conveniently. Therefore, in this paper, we aim to describe sources of health information that college students in a developing country are using.

College students are selected because they are often presumed to be a neglected target group for health promotion activities [11]. The group is also at risk of risky sexual practices that they could be exposed to sexually transmitted diseases, unintended pregnancy, and chronic pelvic pain and inflammatory diseases [25]. Stress is also prevalent among college students due to academic load, sleep problem, and homesickness [10]. Besides, this group is at high risk of using untrustworthy health information through social media networking due to lack of knowledge to judge health information [2]. In order to prevent chronic diseases among young people, the World Health Organization recommended a strategy to ensure that health information is widely available and easily understood [30]. Nevertheless, availability alone may not ensure that young people seek out and use health information. There is a need to precisely understand their preferred and convenient source of health information so as to provide information through the medium. Health promotion professionals can also use the results of this study to pass health messages through appropriate sources in college campuses. Thus, this paper answers the question, “Where do college students from developing countries get health information?”

## 2. RELATED WORK

In this section, we provide sources of health information in developed and developing countries. Since there are limited studies on health information seeking in developing countries, especially among college students [1], we review research studies among the general population so as to give a general understanding of sources of health information in developing countries.

## 2.1 Online Source

The use of the Internet as a source of health information has increased in the developed countries [6] due to its easiness for immediate access [5]. For example, a study done among college students in the United States of America shows that 78% of the students report having looked for health information online in the past year, and more than 37% report that they search for health information three or more times from the Internet [22]. This result shows a significant percentage of college students that are using the Internet for health information.

However, from developing countries side, the use of the Internet for health information is presumably low. For example, a school-based study done among adolescents in Ghana identifies that out of all participants, 35% of youths use the Internet to search for health information [4]. The low proportion of online health information seeking by youths in Ghana could be due to limited access to the Internet [26]. Similarly, a study done in China among the general public indicates that 59% of the participants use the Internet very often for preventive health information seeking [31]. In the rural community of Malaysia, the prevalence of HIS is also considerably low. The result of this study indicates that 46% of the rural community look for online health information [17]. The low percentage of online HIS could be perhaps due to poor coverage of the Internet in the rural community of Malaysia [15]. The Internet is also found to be a useful source of health information by public library users in Iran [8].

From the above research studies, it is understood that health consumers from developed countries use the Internet as a common source of health information, which enable them to actively engage in health information seeking [1]. The reason for their active engagement could be due to instant and easy access to the Internet [5] and their adequate level of literacy [19]. On the other hand, the use of the Internet to look for health information among people in developing countries is presumably low due to limited infrastructure and resources, and limited skill and knowledge in understanding and using technologies and the Internet [24].

## 2.2 Television, Radio, Family, and Friends

The other sources of health information are television, radio, family members, and friends which are the commonly preferred source of health information among people from developing countries (low and middle-income countries). In Malaysia, the majority of participants from rural area preferred television and radio as main sources of health information [17]. The reason to prefer traditional media (television and radio) is because the media are accessible easily [17]. Another study done in Iran on HIS among library users show that television, family members, friends, and books are found to be the most common resources to seek out health information [8]. The authors claim that one of the reason for library users to use sources other than the Internet most is due to lack of people's consciousness towards the existence of health websites. Another community-based study done in India also indicates television and interpersonal communication as the most common source of Tuberculosis related information [23]. A review paper on preventive health information seeking among the general population in China also indicates television as the major sources of health information channel [18].

Health consumers from developing countries use radio and television as the main source of health information. Previous research studies indicate that people who use radio and television as sources of health information are more likely to be passive health information seekers [7; 8; 17; 18]. They may not be able to obtain

health information specifically to their need as they do not seek for health information intentionally. However, nowadays, the Internet penetration rate is growing fast in the developing countries creating an opportunity for users to actively search for health information in a convenient and cheapest way [26]. At the same time, there are risks of using unreliable health information through social networking sites. Hence, it is important to identify the sources of health information that college students from developing countries are using. Identifying the source will help to pass health messages through appropriate and convenient media.

## 3. METHOD

A university-based survey is conducted in Malaysia as a case of developing country. According to the 2014 Internet survey report of Malaysian Communications and Multimedia Commission, the Internet penetration rate of the country is about 67% [15]. The highest percentage of Internet users (24.2%) falls in the age group of 20-24 years with the average age of users being 31.1 years.

### 3.1 Study Participants

We use convenience sampling technique to select a total sample of 49 undergraduate students. Students from health related discipline are excluded due to the fact that these students are most likely to be more well-verse in health knowledge which may have the potential to affect the result of this study.

### 3.2 Data Collection Tools

We use a web-based survey to obtain information on the source of health information and socio-demographic characteristics. The questionnaire is adapted mainly from the 2014 US Health Information National Trends Survey [28].

### 3.3 Data Collection Procedure

Students are approached and invited to participate in the study through personal communication made at the end of their class. After they agreed to participate in the study, the students receive a brief introduction and instruction about the survey. Then, we request them to review and sign an informed consent form. After consent, they are requested to complete the survey questions.

### 3.4 Data Analysis

Descriptive statistics is used to explain the source of health information and socio-demographic characteristics of the participants.

## 4. RESULT AND DISCUSSION

A total of 49 undergraduate students (67.3% male) completed the survey. In terms of field of study, 69.4% students are from engineering, 18.4% from business, 6.1% from information technology, and 6.1% from art and social science. The mean age of the participants is  $21.3 \pm 1.2$  SD with a minimum and maximum age of 19 and 24 years. The demographic distribution of the participants is presented in Table 1.

Table 1: Demographic distribution of college students

Variable	Category	Number of Participants
Gender	Male	33
	Female	16
Age	<22 Years	24
	> 22 Years	25
Year of study	1st Year	14
	2nd Year	7
	3rd Year	16
	4th Year	12

## 4.1 Source of Health Information

A substantial number of college students have sought health information (85.7%) mostly from the Internet. The Internet remains the first choice of college students to look for health information. In this study, 76% of the students prefer the Internet as their primary source of health information. Their good Internet skill which is cultivated through their college education seem to motivate college students to prefer the Internet as the main source of health information. This result is by far different from a school-based study done in Ghana which reports the prevalence of online health information seeking to be 35% [4]. The difference could be due to the time difference that the two studies are conducted. For example, Internet penetration rate in Malaysia is 48.63% in 2006 while it is 67.5% in 2014. Moreover, nowadays, the Internet is ubiquitous on college campuses.

Students prefer their family and doctors as their second and third choice to look for health information, respectively. Among their family members, students prefer to consult their mother for health information more than their father. This is because mother seems to have a special attachment to young adults [16]. Other sources include books, newspaper, magazines, and brochure. Figure 1 shows preferred source of health information that students sought in their most recent time of seeking.

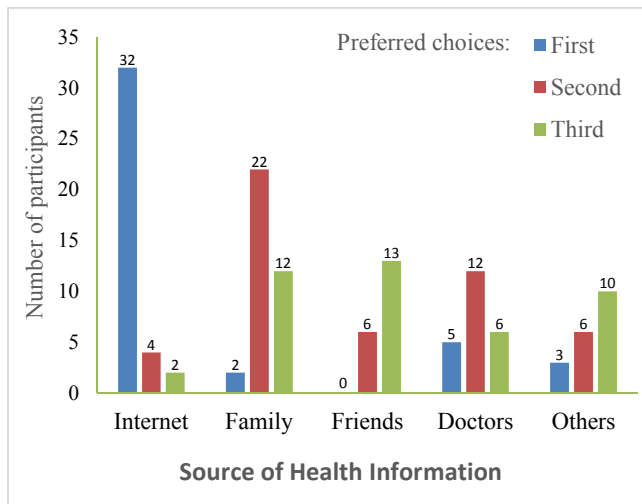


Figure 1: Preferred source of health information among students

## 4.2 Online Searching Tools

In this study, students locate specific sources of online health information. Google remains the most preferred search engine to locate health information. This could be due to lack of proper knowledge and awareness on domain specific sources [24]. Google is useful to support searchers engaged in basic search tasks, but it may not be helpful for searchers who need a deeper understanding of a health topic with multifaceted search tasks that need multiple search sessions and continuous interactions [20]. Hence, it is important to promote domain specific search engines or health information retrieval system, such as WebMed, MedlinePlus, and Myhealth (Malaysian Health Information Portal). This finding is similar to other studies in developing countries, such as Iran [8], Southeast Asia [13], Malaysia [12], China [31] which indicate Google as the preferred search engine to search for health information. Students are also using Wikipedia as their second main source of health information. The preferred searching tools that students in most recent time used are presented in Figure 2.

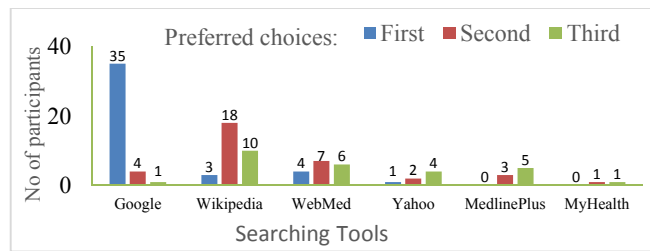


Figure 2: Preferred searching tools for health information

## 4.3 Social Media Use for Health Information

Social media as a source of health information has great implications for health communication as it provides the platform for people to communicate and share information [21]. In our study, two-third of online health information seekers use social media for health information. This figure is much higher than a study done among library users in Iran which reports a small percentage of usage (8.2%) [8]. The difference could be due to the age difference of the participants in the two studies. In the current study, the age range of the participants is 19-24 years which is the most active age group to use the Internet and social media [15]. The higher proportion of social media use for health information indicates that social media are serving as important platform to spread health messages. Hence, health promoters could use social media as a potential tool for health promotion activities.

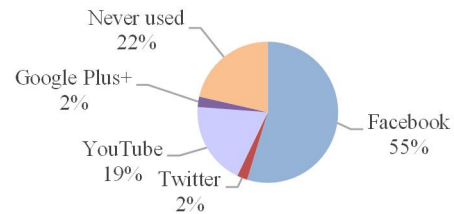


Figure 3: Use of social networking sites for health information

## 5. CONCLUSION AND FUTURE WORK

This paper identifies a substantial proportion of online health information seeking among college students in a developing country. Unlike previous research results from developing countries which indicate traditional media as a primary source of health information, in this study, the main source of health information is identified to be the Internet. Their college education which likely to enable them to have good Internet skill and availability of the Internet in college campuses seem to help students to seek for health information online.

In the future, we will investigate the factors associated with health information seeking in developing countries. We will also explore the search challenges faced by college students when searching for health information.

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