

Medical and Health Information Seeking among Singapore Youths: An Exploratory Study

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Abstract

This study aimed to find out what were the attitudes of young people (aged 18 to 24) in Singapore towards medical or health information seeking. This study also compared the responses between male and female youths. The findings of this study seemed to suggest that youths might not actually be novices in the autonomous search of health information and instead, might be increasingly competent in this area. This could be one of the reasons why many see no need to consult doctors for minor ailments. In addition, it was observed that male youths were less likely to consult doctors for both minor and prolonged illnesses compared to female youths, and that male youths were more likely to watch what they eat and less likely to read health magazines compared to female youths. Also, it was found that youths generally preferred to turn to their parents for medical or health information. One implication was that doctors and health practitioners should acknowledge this information-gathering behaviour and provide their own easily accessible, reliable and accredited information for their patients to forge better doctor-patient relationships. In addition, perhaps doctors could also work more closely with parents so that they would both be better able to manage their relationship with medical or health information seeking youths.

Keywords: Youths, Health information, Medical information, Information seeking behaviour, Survey, Quantitative analysis

Introduction

With new technologies and increasingly easy access to the Internet, medical and health information has become more easily available. The general improvement of socio-economic conditions has resulted in people becoming more educated, which in turn has led to the desire to make better-informed decisions in all aspects of their lives, including their health. Fitness tips, symptoms of illnesses, and instructions on self-medication are some of the medical and health information that can be found easily, not only in periodicals, brochures or through word-of-mouth by friends and family, but to a greater extent on the Internet. Information technology (IT) savvy individuals in this technological age can easily access such information any time of the day, every day of the week. Among them are youths who are becoming more active seekers of medical and health information, and are increasingly making independent medical or health-related decisions.

Literature Review

A review of the literature on consumer medical information seeking revealed that several situation-specific studies where the serious health situation of the patient dictated their medical information seeking needs (Dutta-Bergman, 2005). In these studies, researchers have focused mostly on AIDS, cancer and diabetes patients who seek medical information according to their illnesses and respective medical needs. Research on breast cancer patients had shown the interaction of several cognitive-affective units in health information processing had brought about specific medical information seeking behaviors in patients (Albert, Ditkoff, Fogel, Neugut & Schnabel, 2002). These cognitive-affective units were: i) health relevant encodings; ii) health beliefs and expectancies; iii) affects; iv) health goals and values; and v) self-regulatory competencies and skills for generating and maintaining health protective behavior (Miller *et al.*, 1996, as cited by Shaw *et al.*, 2007). In that particular study of rural breast cancer patients, it was found that seeking cancer information was a form of coping mechanism that the patients needed to build up their sense of efficacy to help them in their struggle with breast cancer.

While it had been revealed that healthcare providers, such as doctors and nurses, were still a primary source of medical information, the Internet had become an increasingly important alternative. There has been a dramatic increase in websites devoted to medical topics, containing articles and health

tips, with numerous potential benefits to having such readily accessible and vast information for patients and their family members (Goldner, 2006). Patsos (2001) claimed that patients with rare diseases were a “neglected and vulnerable population” that now have “at their fingertips the tools necessary to relieve fears and answer questions about their specific disease” (as cited in Goldner, 2006).

However, only a few studies have focused on independent medical information seeking whereby the individual’s unique motivations for medical information seeking were researched. Studies that focused on individual-level motivations behind medical information seeking revealed that such behavior was part of the “consumerism” movement in medicine and health (Booske *et al.*, 1999, as cited in Dutta-Bergman, 2005). The patient, under this framework, becomes a participator and a collaborator rather than a passive recipient of health information and services (Brashers *et al.*, 2002, as cited in Dutta-Bergman, 2005). It was found that the antecedent of autonomous consumer medical information search was related to communicative—interpersonal, community, print, television, and Internet—factors (Dutta-Bergman, 2005). Such studies aimed to develop a profile of individuals seeking medical information beyond the doctor’s diagnosis and advice by examining the effects from external communicative factors. It was found that suspicion of the medical community was frequently cited as a reason for information seeking as well, while word-of-mouth from family and friends played the most important role in health education (Manfredi, Matthews, Sellergren & Williams, 2002).

One of the reasons people seek health and medical information was to increase their health literacy, which is defined as having skills and competencies needed to find, comprehend, evaluate and use health information and concepts to make educated choices, reduce health risks, and improve quality of life (Zarcadoolas, Pleasant & Greer, 2003). Research in medicine and psychology also suggested that health-anxious individuals were likely to seek health information and reassurance from medical resources. Such anxiety may be exhibited through visiting a doctor, “doctor shopping”, or visiting multiple doctors in search of reassurance (Eastin & Guinsler, 2006).

Studies had shown that low levels of health literacy were related to problems in completing medical forms, providing accurate health or medical history, understanding instructions for prescription medicine, increased use of health and medical services and consequently higher healthcare costs (Manganello, 2008). There was evidence to suggest that a strong relationship exists between health literacy and health outcomes, not just in older patients and adults, but also youths. Youths, in particular, form a group of IT savvy individuals who

are increasingly making their own decisions related to health and medical information. A study done by the Kaiser Family Foundation (2001, p. 2) reported that more than two-thirds of youths aged between 15 and 24 years had gone online to look for health information. In addition, out of those youths who had gone online to look for health information, half of them searched for information on diseases such as diabetes or cancer, while more than two-fifths of them looked up information regarding sexually transmitted diseases, pregnancy, birth control or HIV/AIDS. Similarly, teens had consistently posted numerous queries on Nemours Foundation's website for "Expert Answers On..." which ranged from nutrition and dieting, sex and pregnancy, and to issues regarding mental health and emotions (Nemours Foundation, 2008). It can be seen that youths were growing more interested and were actively involved in their healthcare and medical needs, which in turn informed their decisions, actions and behaviours (Manganello, 2008).

Medical and Health Information Seeking in Singapore

Singapore is a small island nation in Southeast Asia, where it lies just 3 degrees north of the equator, at the southern tip of Peninsula Malaysia. Despite being a small country, Singapore is densely populated, and houses 3.6 million residents in a land area of around 700 square kilometres. Singapore has shown a total fertility rate (TFR) of less than 2.0 for more than three decades (Saw, 2005), and is heading towards a greying population. The proportion of the population aged 60 years old and above has risen from 4% in 1961 to 11% in 2001 (Seng, 2004), to more than 13% in 2009 (Ministry of Trade and Industry, October, 2009), and is expected to be more than 25% by 2030 (Seng, 2004). More than \$12 million (approximately US\$8 million) was spent on health and medical care services for the elderly in 2007 (Ministry of Health, 2008), which was an increase of \$2 million in 2006, and this figure is expected to increase over the years.

With youths between the ages of 20 and 39 years making up approximately 30 percent of the population (Ministry of Trade and Industry, September 2009), it must be recognised that this group of people should not be neglected where health information literacy was concerned, as they would determine how much money needed to be spent on their healthcare and medical needs some 20 years into the future. In addition, it had also been determined that fewer economically active Singaporeans were supporting each elderly Singaporean, with the figure registering at 8.4 in the most recent census. Hence, it is

important to ensure that Singaporeans are health information literate as they enter their golden years, so that the financial burden on the economically active young would be kept to a minimum. However, not much research has been done on health information literacy in Singapore. One small-scale qualitative study found that more than half of the youth respondents claimed that they understood what their doctors tell them only 'sometimes' or 'most of the time', but would need to look up more information regarding their health or medical ailment in order to understand them better (Mokhtar, Majid & Foo, 2006). More significantly, these respondents supported the idea of using IT to promote health information literacy, such as through having a local medical information online portal, healthcare information online discussion forum, or corresponding with online medical experts.

Study Objectives

It was also found that there was a lack of knowledge about medical or health information seekers, especially among youths in Singapore. The current study focuses on this group of people mainly because they have grown up in the technological and information age and are used to having information available at their fingertips, specifically through the Internet. As Singapore is a highly networked city-state, taking fourth place in a recent poll (Straits Times, Singapore, March 26, 2009), we assume that youths would prefer looking up medical or health information through the Internet to consulting their doctors or other medical practitioners. This exploratory study aims to find out:

- a. What are young people's attitudes towards medical or health information seeking
- b. What are their attitudes towards medical or health information seeking from the doctor
- c. Whether there are differences in the attitudes between female and male youths.

This study would find out how and why young people search for health information as well as their motivations to do so. Consequently, their attitudes towards health information seeking could be gauged, and in particular how they use such information to shape their health outcomes and look after their general well-being.

Methodology & Data Collection

The data analysed in this study was a result of a survey questionnaire answered by 84 respondents. The questionnaires were given out mainly as online surveys (www.surveymonkey.com), although printed questionnaires were also used for respondents who had no easy access to the Internet.

Respondents were identified through a combined method of convenience sampling and snowball sampling. Convenience sampling was used as the study was meant to focus on young adults and selected respondents, mainly within the age group of 18 and 24. Respondents were mainly recruited from two local tertiary institutions, while some were recruited from areas with high youth traffic such as shopping malls and Mass Rapid Transit (MRT) stations. Snowball sampling was also implemented whereby identified respondents were requested to invite their friends to participate in the survey.

The survey questionnaire consisted of 27 questions in total, including questions on demographics, attitudes towards doctor's consultation, attitudes towards medical information seeking beyond the doctor; and levels of health-consciousness.

Measures

a. *Demographics*

Respondents were categorised according to four questions on age, gender, education level and household income.

b. *Level of health-consciousness*

Likert-type scales were used to measure the level of health-consciousness in respondents by asking them whether they agreed or disagreed to statements such as "I am concerned about my health" and "I read health magazines" to assess the relationship between a respondent's level of health-consciousness and their likelihood to seek medical or health information.

c. *Attitudes towards doctor consultations*

Likert-type scales were used to measure respondents' attitudes towards consulting a doctor. Respondents were asked whether they agreed or disagreed to statements such as "I feel that minor illnesses do not require medical expertise/doctor's consultation" which measured their reluctance to see a doctor and "I only see a doctor when I have a prolonged illness"

which measured their attitudes to the degree of necessity in consulting a doctor when unwell.

d. *Attitudes towards medical information seeking beyond the doctor*

Likert-type scales were used to measure respondents' attitudes towards medical information seeking beyond the doctor. Respondents were asked to rate statements such as "Having information about my illness before seeing the doctor will result in a more effective diagnosis and methods of treatment" which measure their tendency to research on medical or health information before consulting a doctor and their activism in seeking treatment for their ailments.

Data Analysis & Discussion Part I

Demographics

As mentioned earlier, respondents mainly came from the age group of 18 and 24 years old, with the majority of them being female (58 respondents or 69.0%). The majority of respondents, 76 respondents or 90%, had tertiary or post-graduate education (see Table 1).

Table 1: Level of Education of Respondents

Highest Level of Education	No. of Respondents	Percentage
Post-graduate	6	7.1
Tertiary	70	83.3
Secondary school	2	2.4

Levels of monthly household income were asked to determine if different income levels affected the respondents' autonomous motivation for seeking medical or health information (see Table 2). It can be seen that almost three-quarters of the respondents came from the middle- to upper-income bracket (i.e. more than S\$3,000).

Table 2: Monthly Household Income (S\$)

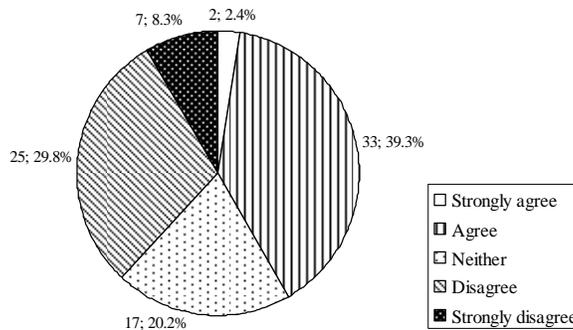
Household Income	No. of Respondents	Percentage
> S\$8,000	22	26.2
S\$5,001 – S\$8,000	17	20.2
S\$3,001 – S\$5,000	21	25.0
S\$1,001 – S\$3,000	10	11.9
< S\$1,000	14	16.7

Level of Health Consciousness

Respondents’ levels of health-consciousness were measured with several questions. These questions aimed to find out if there existed a relationship between these levels of health-consciousness and respondents’ subsequent attitudes towards consulting a doctor and seeking medical information on their own. Of the 84 respondents surveyed, it was found that 75 respondents (89.3%) either strongly agreed or agreed that they were concerned about their health.

Respondents were also asked whether they did specific things to keep themselves updated about their well-being. For instance, some 47 respondents (56.0%) indicated that they tried to avoid food that was considered unhealthy. Hence, more than half of the respondents were seen to be conscious about what they ate as they saw it as being related to their health. For the statement ‘I read health magazines’, it was seen that 35 respondents (41.7%) agreed or strongly agreed and 32 respondents (38.1%) disagreed or strongly disagreed that they did so (see Figure 1).

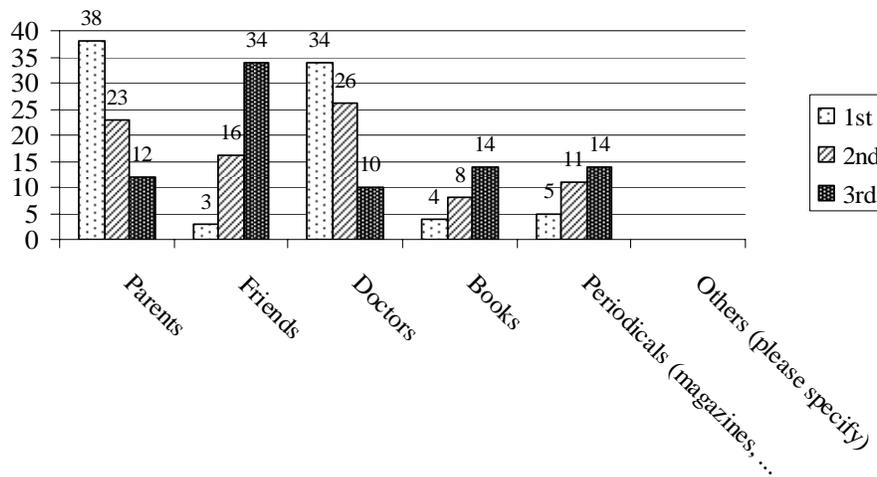
Figure 1: I read health magazines



Attitudes towards Doctor Consultations

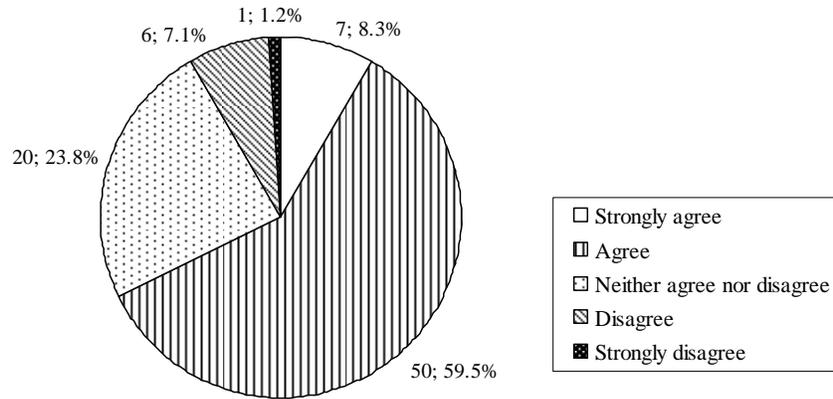
From Figure 2, most of the respondents (38 or 43.9%) preferred to consult their parents first when they fell sick. Doctors ranked next (34 respondents or 40.5%), followed by periodicals (5 respondents or 6.0%), books (4 respondents or 4.8%) and friends (3 respondents or 3.6%).

Figure 2: Medical or Health Information Consultation Preference



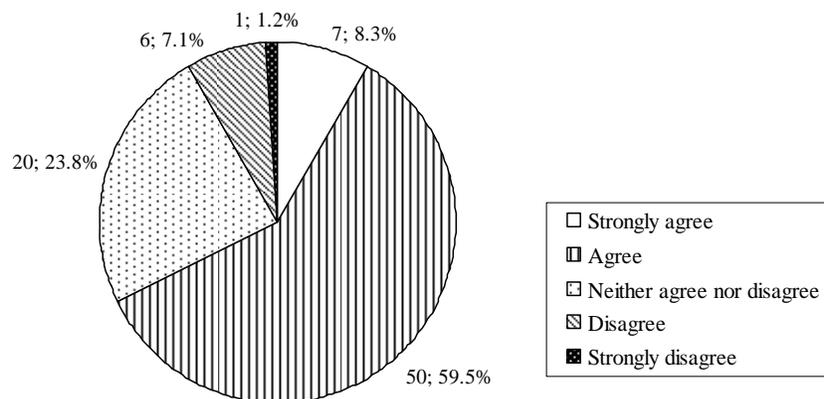
It is worthy to note that none of the respondents agreed to the statement “I do not trust doctors”; while 72 respondents (85.7%) disagreed or strongly disagreed. This showed that respondents generally trusted the medical community and were largely dependent on doctors for their medical or health information. It was also found that more than half of the respondents (52 respondents or 61.9%) disagreed or strongly disagreed that consulting a doctor was not worth the cost (see Figure 3).

Figure 3: I do not see a doctor because it is not worth the cost



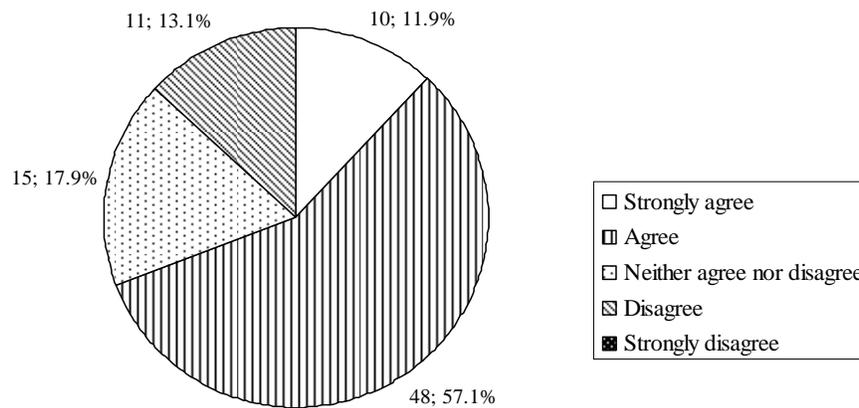
In addition, 49 respondents (58.3%) disagreed or strongly disagreed that doctors do not provide sufficient information and only 15 respondents (17.9%) felt that doctors do not provide sufficient information, while another 21 respondents (25.0%) could not decide. Despite the recognition that more information should be provided by doctors, 57 respondents (67.8%) felt that this information exceeded what they would have been able to find out on their own (see Figure 4).

Figure 4: Doctors provide more information than what I can find out by myself



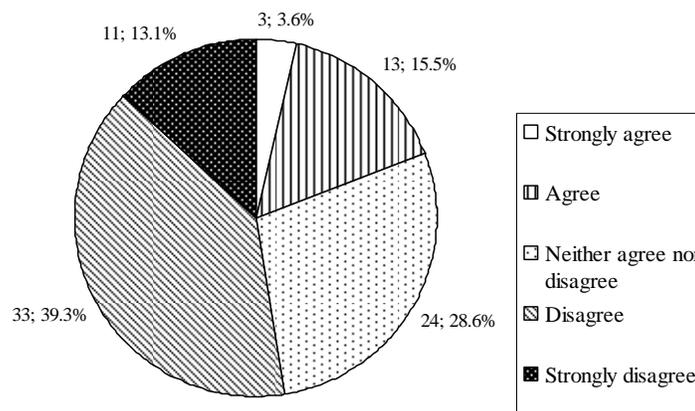
Respondents were asked for their opinion regarding seeking medical or their doctor's help when they had minor illnesses, and 58 respondents (69.0%) agreed or strongly agreed that minor illnesses did not require medical expertise or doctor's help (see Figure 5).

Figure 5: Minor illnesses do not require doctor consultation



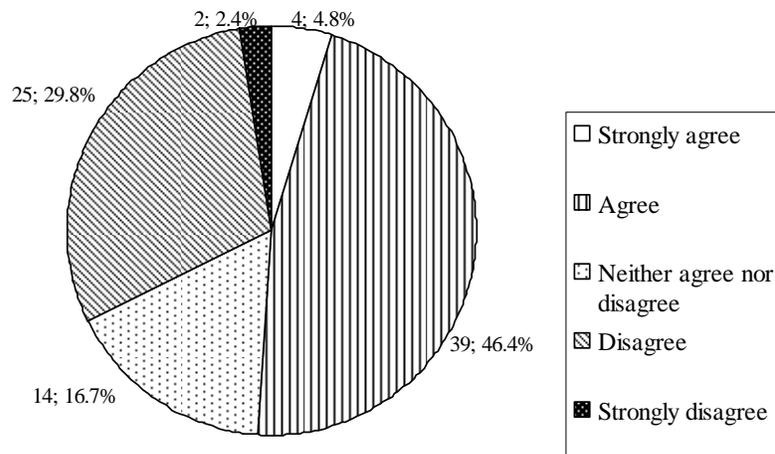
Similarly, when respondents were asked whether they consulted their doctor if they were down with the flu or cold, 44 respondents (52.4%) disagreed or strongly disagreed. Only 16 respondents (19.0%) indicated that they would consult their doctor for such an ailment (see Figure 6).

Figure 6: I consult the doctor when I have the flu or cold



Likewise, 43 respondents (51.2%) indicated that they would see a doctor only when they had a prolonged illness (see Figure 7).

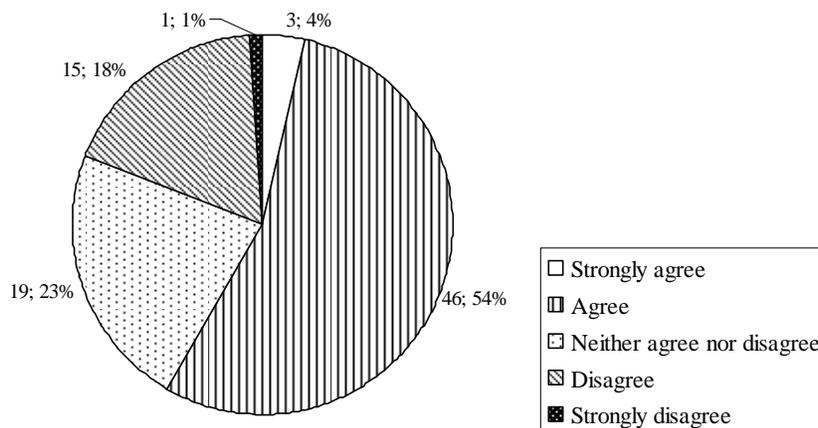
Figure 7: I only see the doctor when I have a prolonged illness



Attitudes towards Medical Information Seeking beyond the Doctor

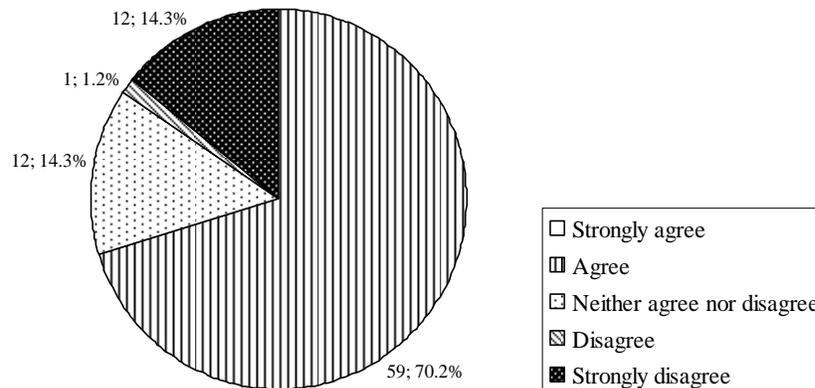
Meanwhile, more than half of the respondents (49 respondents or 58.3%) agreed or strongly agreed that seeking medical information on their own was a means of keeping healthy (see Figure 8).

Figure 8: I search for information as a means of keeping healthy



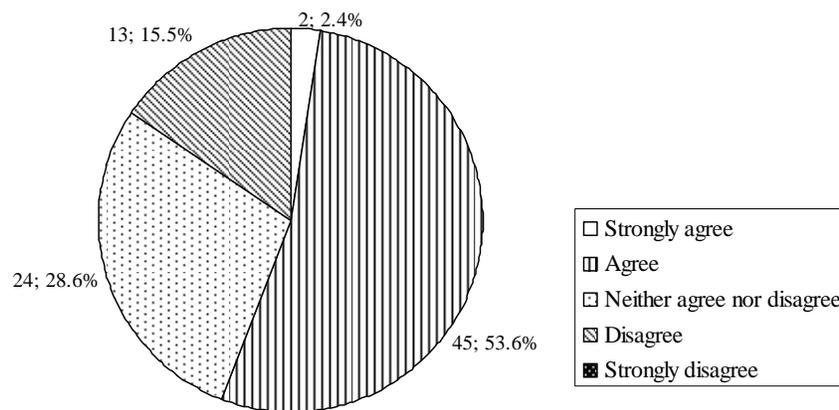
In addition, a vast majority of respondents (59 respondents or 70.2%) agreed that it was their responsibility to find out more information about their own health (see Figure 9).

Figure 9: I see it as my responsibility to find out more info about my health



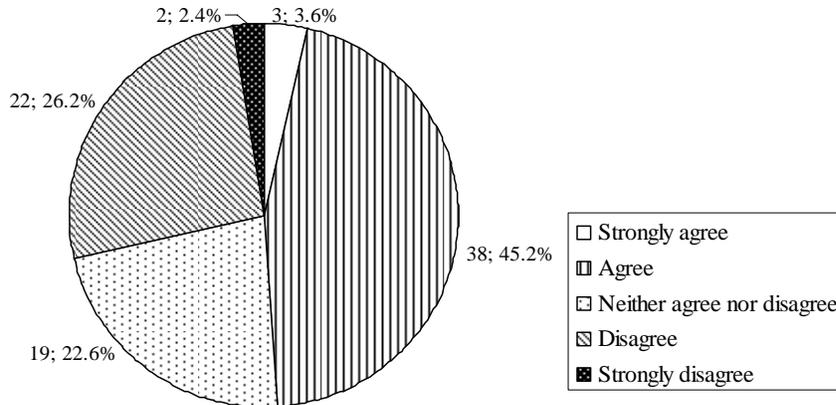
It was also seen that 47 respondents (56.0%) agreed or strongly agreed that seeking medical or health information had an important impact on their health outcome (see Figure 10).

Figure 10: Seeking health information has an important impact on my health outcome



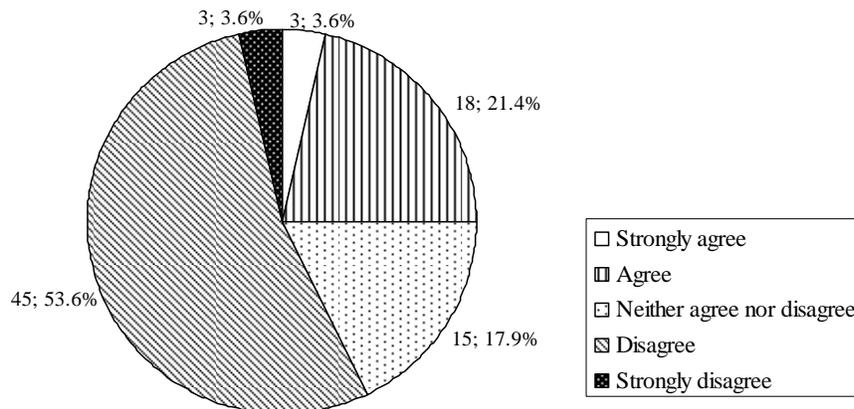
This is supported by the 48.8% that searched for information as a precautionary measure against illnesses (Figure 11).

Figure 11: I search for health information as a precautionary measure against illnesses



When finding out why people searched for information online, it was clear that the respondents were not doing so to avoid consulting doctors (Figure 2 and 3). In fact, 48 respondents (57.2%) disagreed or strongly disagreed that searching for medical or health information on their own was more convenient than consulting a doctor (Figure 12).

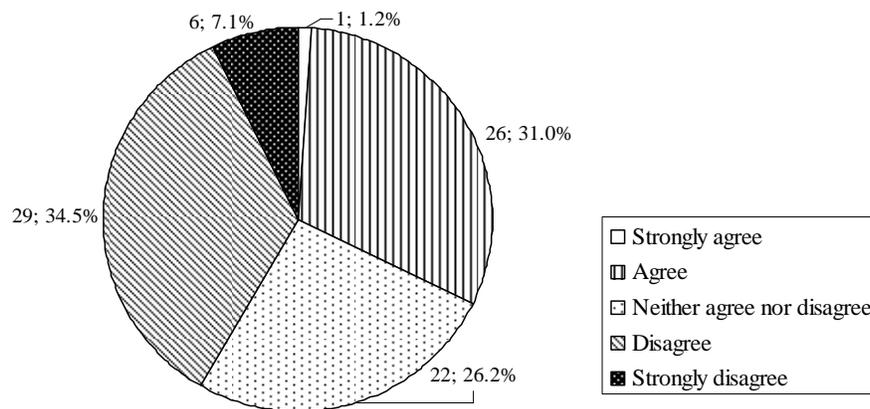
Figure 12: Searching for health information on my own is more convenient than consulting a doctor



Convenience was more of a deterring factor than cost when it comes to consulting a doctor, as more than half of the respondents disagreed or strongly disagreed that consulting a doctor was not worth the cost (Figure 3).

Respondents were asked whether they searched for more medical or health information in addition to consultation with their doctors, and 35 respondents (41.6%) disagreed or strongly disagreed to this statement, while 27 respondents (32.2%) agreed or strongly agreed (Figure 13).

Figure 13: I search for more health information in addition to doctor consultation



Data Analysis & Discussion Part II

Health Consciousness Indicators

This study attempted to determine if a relationship exists between gender and degree of health consciousness of respondents. Degree of health consciousness (from Strongly Agree or ‘SA’ to Strongly Disagree or ‘SD’) was measured based on how concerned respondents were about their health and the likelihood that they would watch what they eat or read up on their health and well-being (see Figure 1). A cross-tabulation of their responses against sex was made in Table 3.

Table 3: Gender & Health Consciousness Indicators

Sex	SA	A	N	D	SD	Subtotal
I am concerned about my health						
Female	15	33	5	2	3	58
% of row	25.9	56.9	8.6	3.4	5.2	
Male	11	15	0	0	0	26
% of row	42.3	57.7	0.0	0.0	0.0	
I try to avoid food which is considered unhealthy						
Female	1	30	13	11	3	58
% of row	1.7	51.7	22.4	19.0	5.2	
Male	1	15	6	4	0	26
% of row	3.8	57.7	23.1	15.4	0.0	
I read health magazines						
Female	2	25	9	19	3	58
% of row	3.4	43.1	15.5	32.8	5.2	
Male	0	8	8	6	4	26
% of row	0.0	30.8	30.8	23.1	15.4	

It was seen that males (100%) were more likely to be concerned about their health compared to females (82.8%). It was interesting to observe that males (61.5%) were more likely to avoid food that they consider unhealthy compared to females (53.4%). On the other hand, females (46.5%) were more likely to read health magazines compared to males (30.8%). However, it is seen that both males and females were equally likely not to read health magazines (females: 38.0% and males: 38.5%).

Although it was not elicited further as to what were the reasons for the agreement to these statements, it can be interpreted that female youths are more likely to follow trends or fads with regard to staying healthy that may be presented in health magazines, advertisements or hearsay on dieting, although they are also less likely to avoid unhealthy food. It can be interpreted that male youths are less likely to be influenced by what they read in health magazines and instead prefer to take the realistic approach of watching what they eat.

Attitudes towards Doctor Consultations

Attitudes towards doctor consultations were indicated by statements such as whether respondents would consult a doctor for what were considered minor or common illnesses (such as the common cold or influenza). Generally, results reveal that both female and male youths equally felt the need for medical expertise to treat minor illnesses (see Table 4).

Table 4: Educational Level & Attitudes towards Doctor Consultations

Sex	SA	A	N	D	SD	Subtotal
Doctors do not provide more information than what I can find out by myself						
Female	0	6	13	34	5	58
% of row	0.0	10.3	22.4	58.6	8.6	
Male	1	1	7	15	2	26
% of row	3.8	3.8	26.9	57.7	7.7	
I feel that minor illnesses do not require medical expertise/doctor's consultation						
Female	9	30	11	8	0	58
% of row	15.5	51.7	19.0	13.8	0.0	
Male	1	17	5	3	0	26
% of row	3.8	65.4	19.2	11.5	0.0	
I consult the doctor when I am down with the flu or cold						
Female	2	11	15	21	9	58
% of row	3.4	19.0	25.9	36.2	15.5	
Male	1	2	8	12	3	26
% of row	3.8	7.7	30.8	46.2	11.5	
I only see the doctor when I have a prolonged illness						
Female	3	28	10	15	2	58
% of row	5.2	48.3	17.2	25.9	3.4	
Male	1	11	4	10	0	26
% of row	3.8	42.3	15.4	38.5	0.0	

It is seen from the results that the majority of both females (67.2%) and males (65.4%) felt that their doctors were able to provide more information regarding their illnesses than what they would be able to find on their own.

As a result, both females (51.7%) and males (57.7%) would not consult their doctors when they faced minor illnesses such as the common cold or the flu. On the other hand, they would consult their doctor when faced with prolonged illnesses, with females (53.5%) being more likely to do so than males (46.1%). It could be seen that males were less likely to consult their doctors whether they have minor or prolonged illnesses, compared to females. Although it was not elicited further what were the reasons for these, it can be interpreted that males were more likely to self-medicate or leave their illnesses alone compared to females. It could be the case that male youths feel less comfortable when dealing with their doctors compared to female youths. It has been discovered that female patients generally have better relationships with their doctors compared to male patients (Lunn, Williams, James, Winman & Newman, 1998; Stewart, 1983), as female patients were more likely to be more open and less inhibited in asking health or medical related questions or share such information with another person, in this case, the doctor. Male patients were more likely to withhold such information for fear of appearing weak and vulnerable. Hence, this may explain why male youths in this study were also less likely to consult their doctors irrespective of suffering from mild or prolonged illnesses.

Medical Information Seeking beyond the Doctor

This study also attempted to determine if there were differences in perceptions of self-efficacy between females and males (see Figure 9). An individual who perceives seeking health information as beneficial is more likely to do so. Accordingly, those with higher self-efficacy should have a greater sense of an ability to utilise relevant health-related information in treating and managing their illnesses (Becker & Rosenstock 1989; Korsch, Gozzi & Francis, 1968; Lichter, 1987). Out of 84 respondents, 47 respondents (56.0%) felt that seeking information had important impact on their health's outcome (Figure 10), while 59 respondents (70.2%) agreed that it was their responsibility to find more information about their health (Figure 9). These responses cut across both sexes (Table 5). Interestingly, it was found that females were more likely (58.6%) to feel that seeking medical or health information has important impact on their health outcome compared to males (53.8%). Similarly, females were more likely (87.9%) to see it as their responsibility to find more information about their health as males (76.9%). Looking up such information not only empowers patients with knowledge about their general well-being, but also increases awareness of possible treatments and medication for their

illnesses. This supported previous studies which suggested that patients who were adequately informed about their illnesses were able to maintain a sense of control (Felton, Revenson & Hinrichsen, 1984; Janis, 1984; Lerman *et al.*, 1993; Viney & Westbrook, 1984), which in this context, is self-sufficiency and the informed decision not to consult a doctor when faced with minor or common illnesses. However, it was not determined what sort of medical or health information would females look up compared to males.

Regardless, it is important for relevant and authoritative medical and health information to be available for youths to look up as they feel that they should do so and that by doing so, it would have an important impact on their well-being. The more important issue, however, is to ensure that such information, when available, should be pitched at the right level for youths with varying educational backgrounds (Mokhtar *et al.*, 2006) and of different sexes.

Table 5: Educational Level & Medical Information Seeking beyond the Doctor

Sex	SA	A	N	D	SD	Subtotal
Seeking medical or health information has important impact on my health outcome						
Female	2	32	17	7	0	58
% of row	3.4	55.2	29.3	12.1	0.0	
Male	0	14	6	6	0	26
% of row	0.0	53.8	23.1	23.1	0.0	
I see it as my responsibility to find out more information about my health						
Female	9	42	7	0	0	58
% of row	15.5	72.4	12.1	0.0	0.0	
Male	3	17	5	1	0	26
% of row	11.5	65.4	19.2	3.8	0.0	

This study also reveals that respondents trusted doctors for sufficient information regarding their illnesses, although 15 respondents (17.9%) felt that doctors do not provide sufficient information, while another 21 respondents (25.0%) could not decide if this was so. However, it is also found that a majority of the respondents (57 respondents or 67.8%) felt that the information already provided by doctors was more than what they could

possibly find out for themselves. This finding may be somewhat peculiar because since Singapore is a highly networked city-state with easy access to the Internet, it is expected that youths would quickly and easily obtain medical or health information online. The Internet offers unlimited resources, where abundant medical and health information may be elicited. Therefore, the lack of resources cannot account for this “passivity” in looking up medical and health information from the Internet. A possible explanation could be due to this precise point though – that the Internet, being as vast as it is, would make the task of searching for relevant medical or health information be akin to searching for a needle in a haystack. Youths may simply not know where to start. Perhaps the credibility of information found on the Internet may also be in question, and future research is warranted to explore this aspect.

These findings suggest two implications:

- a. Doctors and other medical experts can do more in providing sufficient information to their patients
- b. Doctors and other medical experts can do more in ensuring that relevant and authoritative information is available for young adult patients that can be accessed through convenient sources such as the Internet

While previous studies (Gray, Klein, Noyce, Sesselberg & Cantrill, 2005; Skinner, Biscope, Poland & Goldberg, 2003) had demonstrated that the Internet and periodicals (such as health magazines) were a dominant source of medical and health information, this study seemed to suggest otherwise for the respondents involved. Even though there had been a dramatic increase in websites devoted to medical topics, including detailed medical opinions and health tips, this study found that respondents preferred to consult their parents first where their health was concerned (38 respondents or 45.2%). However, this figure was comparable to the number of respondents who would approach their doctors straightaway (34 respondents or 40.5%). Few would approach other sources of information first (see Figure 2). A study by Agosto and Hughes-Hassell (2005) as well as the survey by the Kaiser Family Foundation (2001) also demonstrated that youths regarded other people as their preferred information source, specifically family and friends, and doctors or medical practitioners.

Recommendations

In this study, measures were implemented to determine the cause of autonomous medical or health information seeking among youths. Factors were categorised under several 'push' and 'pull' factors. Several 'push' factors that were considered:

- a. doctor's consultations provide insufficient information
- b. respondents are reluctant to consult doctors for minor illnesses;
- c. respondents' attitudes towards doctors
- d. costliness of doctor's consultations
- e. inconvenience of doctor's consultations

The main and perhaps the most important deciding factor in not consulting a doctor seemed to be minor illnesses that do not merit a doctor's attention (58 respondents or 69.0%). The least important 'push' factor was having a negative attitude towards doctors. More than four-fifths of the respondents disagreed or strongly disagreed with the statement '*I have a fear of doctors*', and similarly disagreed or strongly disagreed with the statement '*I do not trust doctors*', indicating either neutral or positive attitudes towards doctors. Previous studies found that suspicion of the medical community was frequently cited as a reason for information seeking (Manfredi *et al.*, 2002). It was apparent that the results of the current study differed from these previous studies. While previous studies mainly focused on Western communities, young adults in Singapore were the focus of the current study. Probably due to the still conservative Asian culture in Singapore, it was likely that respondents regard figures of authority, in this case doctors and other medical experts, with a lot of trust and respect. As shown in Figure 14, more respondents (35 respondents or 41.6%) disagreed or strongly disagreed that they search for other information in addition to a doctor's consultation. It can be inferred from here that a majority of respondents consider information provided by doctors as sufficient and reliable enough, such that additional information beyond the doctors are not searched for to back-up doctors' diagnoses.

Other than that, the findings of this study seemed to suggest that youths still look up to figures of authority where medical or health issues were concerned, in this case, parents and doctors. Hence, another implication was that parents also needed to be involved in ensuring that youths had access to relevant and authoritative medical and health information. For a start, doctors and other medical experts could work more closely with parents to equip them with

relevant information on medical or health issues that concern youths, such as dieting and nutrition, mental health or depression, sexually transmitted diseases, and sex and sexuality. However, as Eysenbach (2008) explained, this area of youth-parent-and-doctor relationship in medical or health information seeking was still largely unexplored and served to be a potentially rich area for research. It would be timely to find out what sort of medical or health information youths seek from their parents and from their doctors, so that parents or doctors can be better equipped to manage this relationship with medical or health information seeking youths.

It seemed that neither cost nor convenience were important 'push' factors, as 52 respondents (61.9%) disagreed or strongly disagreed with the statement '*I do not see doctors because it is not worth the cost*' (Figure 3), while 48 respondents (57.2%) disagreed or strongly disagreed with the statement '*Searching for information on my own is more convenient than seeing the doctor*' (Figure 12). These figures made up the majority of people surveyed, while an average of 15 to 16 respondents (18.5%) per question had no opinion on either issue. This could be attributed to the fact that the sample surveyed consisted of mostly middle-class university-educated students or young working adults who could afford the fees. Convenience would not be an issue as polyclinics and private clinics are ubiquitous in Singapore and within easy reach.

The 'pull' factors that caused young adults in Singapore to autonomously seek for medical information were:

- a. respondents' levels of health-consciousness
- b. respondents' sense of responsibility over their health's outcome
- c. respondents' increasing desire to participate in medical matters concerning their health

This study revealed that respondents' levels of health-consciousness had a positive relationship with their tendency to independently seek medical information. Health-consciousness was determined by a respondent's attitude in caring for their own health. For instance, it was found that autonomous seeking of medical information acted as a protective mechanism for health-conscious individuals, where 41 respondents (48.8%) search for information as a precautionary measure against illnesses (Figure 11). This finding coincided with previous studies which found that people seek health and medical information to increase their health literacy (Zarcadoolas *et al.*, 2003).

Meanwhile, this study also helped to provide an insight into why young adults in Singapore view seeking of medical information beyond the doctor as their own responsibility. It was seen that respondents believe such practices have a positive impact on their health's outcome, since 49 respondents (58.3%) agreed or strongly agreed that they searched for information as a means of keeping healthy (Figure 8). As health-consciousness rose, there were increasing numbers of young adults in Singapore who seek medical or health information to complement what was provided by their doctors or health advisors. Research suggested that this was done by health-anxious individuals in order to seek reassurance from medical resources (Eastin & Guinsler, 2006).

Health-conscious individuals were found to be more likely to participate and play an active role when seeking treatment for illnesses. Forty-seven respondents (56.0%) agreed that being active in the search for medical or health information would result in better outcomes with regard to their health (Figure 10). Consumers' search for additional health information beyond doctors' consultations has been made easier with the proliferation of the Internet, which has allowed health information to be more democratised and health care consumers to be more empowered (Ziguras, 2000). Similarly, the current study showed how young adults in Singapore might be moving gradually away from being completely reliant on the medical community, towards being more involved in their role as a partaker in medical matters concerning their own health, especially in a knowledge economy like Singapore.

Conclusion

Analyses in this study were approached with some caution because of the uncertainties due to self-reported measures of health consciousness among respondents, as well as attitudes towards doctor's consultation and seeking of medical information itself. Also, since a questionnaire survey method with many variables for various demographic data was elicited in this current study, only cross-tabulations could be made for possible correlations between variables. On the other hand, causality was inconclusive and future related research could consider using longitudinal methods of survey.

Due to time and manpower constraints, only 84 respondents were surveyed and this must be kept in mind when percentages were considered. Also, because of the narrow scope of the survey, the findings of this current study

cannot be generalised to the entire youth population in Singapore. It would be ideal if a larger number of respondents were sampled in future research.

This study helped to shed some light on how young adults in Singapore managed their health by examining the motivations behind autonomous medical information seeking, and the active processes that individuals engage in. The findings of this study seemed to suggest that youths were not novices in the autonomous search of health information and instead, were increasingly competent in this area, and could be one of the reasons why many see no need to consult doctors for minor ailments. The health-consciousness of these individuals suggested that doctors and health practitioners should acknowledge this information-gathering behavior and create their own easily accessible, reliable and accredited information for their own patients, to forge better doctor-patient relationships, especially in the “consumerism” movement in medicine and health (Booske *et al*, 1999, as cited in Dutta-Bergman, 2005) where patients become participants and collaborators instead of passive recipients of health services. In addition, perhaps doctors could also work more closely with parents so that they were both better able to manage their relationship with medical or health information seeking youths.

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