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Malaysian Women's Online Health Information Seeking Behaviour: An Exploratory Study

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There have been many studies about Internet usage for health information. Previous studies reported that women are dominant Internet users in terms of health information. This study tries to explore Malaysian women's pattern of general Internet usage and specifically Internet usage for health information. The study made use of survey research design method. The data were collected using a set of self-administered questionnaire. A sample of 293 non-academic female staffs working at a public university was randomly selected, using proportionate random sampling method. Results showed that most common activities which women do on the Internet were Emailing and information seeking. It was also found that Internet was ranked as the second preferred source of health information after medical experts. Slightly, more than half of respondents reported that they used the Internet for health information less than once a month. Furthermore, the highest percentage of participants tends to search for health information on the Internet using search engines such as Google and Yahoo. Health information topics which have been more frequently searched on the Internet by participants were certain medical treatments and specific diseases or medical problems. The results also showed that women use the Internet to fill the gap in their health knowledge and to communicate for health-related purposes at moderate level.
***[Key Words:** Internet, Malaysia, YouTube, search engine, Telemedicine]*

Statistical data shows the rapid growth and increasing popularity of Internet in Malaysia as one of the Asian country in recent years (Internet World Stats, 2010; Malaysian Communications and Multimedia Commission, 2011). It is reported that Internet subscribers in Malaysia consisted of 93% of urban users (Idris, Laili, & AidaWati, 2011). Malaysian Communications and Multimedia Commission (MCMC) (2011) also reported that about 90 percent of urban individuals utilized the Internet whereas only 10.3 percent of rural people employed the Internet. According to MCMC survey in 2011, there were more male Internet users (53.9%) than female Internet users (46.1%). However, the gaps were relatively small (MCMC, 2011). Malaysian females used the Internet (90.4%) more than radio (70.2%) and television (88.8%) as a source of information (Salman & Hasim, 2009).

Women utilize the Internet to gratify a diversity of informational, communication, and entertainment needs. They use this powerful tool to maintain and broaden social support networks, keep updated with news incidents, search for and use variety types of information to make decisions more efficiently and get involved with different aspects of their own daily lives (Abraham, Morn, & Vollman, 2010). There is evidence showing that Internet has become used as an important source of health-related information by female population (Fox, 2006, 2011; Fox & Duggan, 2013). This is also true for Malaysian women (Komathi & Maimunah, 2009; Salman & Hasim, 2009). For example, Komathi and Maimunah (2009) found that Malay female interviewees were dominant Internet users in terms of health-related information use as compared to males. The study also showed that female Internet users usually look for information on women-related issues like beauty tips, women and family's health, modern and traditional remedies. Internet was also evaluated as a convenient and inexpensive information resource among Malaysian women with breast cancer. This group of women believes that Internet assists them and their care-givers to make decision about their health, to get the answers for their queries, detailed explanation of medical jargons, cancer treatment options, and possible solutions to solve problem (Guan Gan & Lim, 2010; Mazanah, Afshari, & Nor Aini, 2011; Zamri Mansor & Muhamad, 2013).

Patterns and characteristics of Internet usage for health information seeking has become a major scholarly research focus. There are studies examining the pattern and prevalence of Internet usage for health information seeking patterns and behavior among adults in US (Fox, 2006, 2011; Fox & Duggan, 2013), in Singapore (Siow*, et al.*, 2003), Hong Kong (Yan, 2010), and Greece (Delic, Pola, & Kern, 2006). However, there have been no studies to date that examine the online health information seeking patterns, behavior and characteristics exclusively among female online health-seekers in Malaysia. The objectives of this study are to explore characteristics of Malaysian female online health seekers, prevalence and patterns of online health information seeking among this target population.

Methodology

For this study, a questionnaire was used to collect data. It contained questions on demographic characteristics, patterns of general Internet usage and Internet usage for health information adopted from previous studies (Fox & Duggan, 2013; Hale, Cotten, Drentea, & Goldner, 2010; Yoo & Robbins, 2008).

The research participants were selected among non-academic female staffs working at a public university in Malaysia. The identified population for the present research could determine a scope of the problem that was to be researched because health-related Internet users is most often educated, younger, married, from urban areas and has accessibility to Internet from workplace. The survey collected 293 usable responses, after excluding cases that had more than 50 percent missing data and were outlier and did not possess the determined criteria.

As population for the present study was composed of several subgroups (i.e. faculties, colleges, institutes, offices, and centers) that were vastly different in number, proportionate sampling was firstly used to gather participants for the study. The number of participants from each subgroup was determined by their number relative to the entire population. There were 293 respondents who have used the Internet for health-related purposes. Researchers personally proceeded to distribute and collect the questionnaires. This method was considered to be the best way to collect data as the completion rate seems higher than straightforward mail survey. Data collection procedure took almost two months.

Respondents' Profile

As indicated in Table 1, respondents' age range is between 20 to57 with mean of 33.51 (SD= 7.9). A majority of the respondents (42%) belonged to the 30 to 39 age group, followed by those (38%) who were in the 20-29 age group. The age group of 40-49 years old constituted 15.5 percent of respondents whereas the age group of 50 and above represented 4.5 percent of respondents. Ethnic background of the sample is not very diverse. Table 4-2 also presents that most respondents (66.5%) were married, while about 31.5 percent were single. Regarding the participants' educational attainment, less than half of them (47.5%) had a college or university degree, followed by 46.5 percent who reported that they had secondary school degree. About 6 percent of the respondents had primary school degree. Around 59 percent of the participants held clerical positions, while about 30 percent of them were working as administrative staff. About 6 percent were secretary and the rest were engaging in other job positions. The range of respondents' monthly household income was from RM 1000 as the minimum to RM 10000 as the maximum with mean RM 3428 (SD= 1824). A majority of respondents (45.5 %) fell in the RM 1000-2999 income range, followed by those (41%) within the 3000-5999 income range. Those who came from the RM 6000-8999 income group constituted about 13 percent of the respondents. Meanwhile, the participants with RM 9000 income and above were the smallest group with 0.5 percent.

Table 1: Descriptive Statistics of Demographic Characteristics

	Frequency	**Percentage**
Age (years) (n=286)		
20-29	109	38
30-39	120	42
40-49	44	15.5
≥50	13	4.5
Marital Status(n=292)		
Single	92	31.5
Married	194	66.5
Others	6	2

Education Level (n=291)		
Primary school	18	6
Secondary school	138	47.5
College/university	135	46.5
Job Title (n=285)		
Administrative staff	85	30
Clerical staff	168	59
Secretary	18	6
Others	14	5
Household Income (RM) (n=282)		
1000-2999	128	45.5
3000-5999	116	41
6000-8999	37	13
≥ 9000	1	.5

Patterns of the Internet Usage of Respondents

Regarding the Internet-related activities, Table 2 shows that respondents mostly do on the Internet, Emailing (92.5%) and information seeking (87%) were the most common activities done on the Internet, followed by using YouTube (68.2%), doing online social networking (65.8%), and downloading video, music, software etc (59.2%). Almost 39.7 percent reported that they do transaction including online banking, shopping, investing, etc and 35.6 percent of respondents showed to enjoy Instant messenger. As indicated the activities with the least frequency were watching movie (35.3%) and playing games (25%).

Table 2. Respondents' Internet Activities

	Frequency	**Percentage**
Internet activities*		
E-mail	271	92.5
Information seeking on the Web	255	87
Instant messenger	104	35.6
Downloading (video, music, software, etc)	175	59.9
Social networking (like face book, Google+)	192	65.8
Playing games	73	25
Transactions (online shopping, Online banking, etc)	116	39.7
Using YouTube	199	68.2
Watching movie	102	35.3

*Percentage is related to more than one answer

As indicated in Table 3, majority of respondents (87%) use the Internet at their workplace, followed by 61 percent which used the Internet at home. Using the Internet at public places was the option with the least frequency percentage (38%). Wi-Fi (44%) was the most widely used method to access the Internet among respondents, followed by Wireless Broadband with 39 percent. Only 15 percent of respondents used the Wired /Local Area Network (LAN) to connect the Internet. The most common used hardware to access the Internet was mobile phone with 58 percent, followed by desktop with about 52 percent. Laptop and tablet were the third and fourth most common hardwares to use the Internet with 34 and 27 percent respectively.

Table 3. Places and the Ways of Internet Access

	Frequency	**Percentage**
Place(s) of Internet access*		
Home	179	61
Workplace	255	87
Public places	109	38
Access the Internet mainly through using		
Wired /Local Area Network (LAN)	42	15
Wireless Broadband	111	39
Wi-Fi	125	44
Other	4	1
Hardware mainly used to access the Internet*		
Desktop	147	52
Laptop	96	34
Tablet	76	27
Mobile phone	164	58

***Percentage is related to more than one answer

Pattern's of Internet Usage for Health Information

As demonstrated in Table 4, there are different types of resources that women use when they need medical or health information. The Internet was ranked the second source with 74.5 percent after medical professionals (78%). The percentage of Internet use as a health information source was higher than family and acquaintance (73%), publications across book, magazine, etc (48%) and the mass media such as newspaper, TV, and Radio (49%).

Table 4. Current Status of Online Health Information Use

	Frequency	**Percentage***
Sources preferred when looking for health information		
Publications across book, magazine, etc.	138	48
Medical expert (i.e. doctor, nurse, pharmacist, etc.)	226	78

The mass media such as newspaper, TV, and Radio.	142	49
Close acquaintances like parent, family, friend, etc.	212	73
Internet	216	74.5

*Percentage is related to more than one answer

Table 5 presents the results of the respondents' Internet use for health information seeking. Of the 311 of women who responded that they use the Internet in their daily life, 94 percent said that they have used Internet for health information. Table 4.8 also showed that the majority of the users (52%) said they used the Internet for health information less than once a month and 23 percent reported that they use Internet for finding health information a few times a month, followed by 15 percent that said they used Internet for health information 1-2 times a week. Meanwhile, about 10 percent used the Internet to get information on health more than 2 times a week.

When asked about the amount of use, most participants (83%) responded that they have used Internet for health less than 30 minutes and 14 percent between 30 minutes to 1 hour. Those who have used the Internet for health information between 1-2 hours constituted 2.5 percent of respondents followed by those (.5) who used the Internet for health information 2 hours and more.

Table 5. Frequency of and Time Spent on the Internet for Health Information

	Frequency	**Percentage**
Frequency of Internet use for health information seeking (n=286)		
Less than once a month	149	52
A few times a month	66	23
1-2 times a week	42	15
More than two times a week	29	10
Hour (s) spent on the Internet for searching health information when using Internet for health information (n=288)		
Less than 30 minutes	239	83
30 min to 1 hour	41	14
1hour to 2 hours	7	2.5
≥2 hours	1	.5

When asked how you search health information on the Internet, as Table 6 shown about 87 percent of online health seekers said that they use search terms (keywords) on web search engines such Google and Yahoo while less than half of them (48 %) reported that they use authority based Websites like website of Ministry of Health, Hospitals, and MyHealth portal, followed by

31 percent of those who use Youtube to find health information. About 30 percent of online female health seeker used social networking sites like face book for health information searching, followed by forum and blog and health-specific search engines like Google Health and Yahoo Health with 16 and 11 percent respectively. Online Medical Journal like Medline and Medspace were used by only 9 percent of online female health seekers.

Table 6. The Ways of Health Information Seeking on the Internet

	Frequency	**Percentage***
How do you find out health information on the Internet?		
Use of search terms (keywords) on web search engines like Google and Yahoo	254	87
Authority-based Websites (e.g. Ministry of Health, Hospitals, MyHealth portal)	139	48
Health-specific search engines (e.g. Google Health, Yahoo Health)	32	11
Online Medical Journal (e.g. Medline, Medspace)	25	9
Forums and Blogs	47	16
Social Networks (e.g. Facebook, Twitter)	68	30
YouTube	89	31

*Percentage is related to more than one answer

Table 7 demonstrates the nature of the health information Malaysian women look for on the Internet. It is clear that a large variety of health information is accessed through the Internet. Certain medical treatment (86%) and specific disease or medical problem (77%) is the most required information. Also information on prescription or over-the counter drugs (51.5%), how to lose or control weight (50%), experimental treatment and medicines (43%), information on diet, nutrition, and vitamin (41%) and exercise and fitness (30%) were sought after. Furthermore, the Internet seems to be a good way to learn more about sensitive topics such as sexual health problems (29%) and depression, anxiety, stress and mental health problems (17.5). are also reasons for people to go online. People that want to know about alternative treatments and medicines (21%), dental health (24.5%), immunization (30.5%), Medicare or Medicaid (24%), a particular doctor or hospital (26%) also find their way to the Internet. The online health information that is least popular is information on health insurance (17%), environmental health hazards (14.8%), how to quit smoking (4%) and problems with drugs or alcohol (1.5%).

Table 7. Distribution of Health and Medical Topics Searched on the Internet

Health and medical topics usually searched on the Internet	Frequency	Percentage*
Specific disease or medical problem	224	77
Certain medical treatment	249	86
Diet, nutrition, vitamins	119	41
Exercise or fitness	89	30
Prescription or over-the-counter drugs	126	51.5
A particular doctor or hospital	75	26
Health insurance	48	17
Alternative treatments or medicines	60	21
Depression, anxiety, stress, or mental health issues	50	17.5
Environmental health hazards	40	14
Experimental treatments or medicines	123	43
Immunizations or vaccinations	87	30.5
Dental health information	70	24.5
Medicare or Medicaid	69	24
Sexual health information	83	29
How to lose weight or how to control your weight	143	50

*Percentage is related to more than one answer

Mean of health-related Internet Use

Based on the recorded mean score of items related to Internet usage for health-related purposes, it can be seen that the respondents use the Internet to fill the gap in their health knowledge at moderate (medium) level. Similarly, respondents tend to moderately use the Internet to communicate for health-related purposes (see Table 8).

Table 8. Mean of Health-related Internet Use

Internet usage to communicate for health-related purposes (n=293)	Mean score	Standard Deviation
I use Internet to get social support from other users via bulletin board, chat room, or conference.	3.03	1.06
I use Internet to get online medical consultation from medical professionals.	2.89	1.12
I use Internet to interact with people with similar health conditions.	2.75	1.13
I use Internet to use mail to communicate with a doctor or a doctor's office.	3.08	1.04
I use the Internet to share and exchange experiences about health and diseases.	2.99	1.01

Internet usage for searching health information (n=293)		
I use Internet to get general health information.	3.25	.90
I use Internet to get description of various diseases	3.43	.82
I use Internet to get information on medicine/drug.	3.26	.96
I use Internet to be equipped with information before/after doctoral appointment.	3.47	.88
I use Internet to decide about whether or not visit a doctor.	3.16	.97
I use Internet to decide about how to treat an illness.	3.28	.98
I use Internet to understand how to deal with an illness.	3.43	.92
I use Internet to get information on treatments/therapy/ diagnosis.	3.29	.91
I use Internet to get information on hospitals/clinics/other healthcare facilities.	3.41	.91
I use Internet to get information for health management (exercise, abstinence from drinking, smoking, diet, nutrition, stress, mental health, etc.).	3.33	.96
I use Internet to get information on how to care for oneself.	3.44	.80

Discussion and Conclusions

The findings of the study indicate that most of respondents do online health information seeking activity less than once a month. Since a woman holds the greatest responsibility for the well-being and health of all her family members as well as for herself and responsibility for determining the status of conditions that affect health such as nutrition and food security, she needs to be fully equipped with health knowledge to effectively manage her own and her family members' wellness. Internet as the largest online health information library has the potential to be the first source of health information. Therefore, health policy makers should develop strategies to promote the women' willingness level and the degree of compliance with the Internet as a health information source to maintain, promote and manage health.

The study found that a high percentage of respondents use the Internet to search for information about specific diseases and medical treatments. These findings show that female online health information seekers reactively use the Internet for health and medical information in response to a concern about a particular medical condition and a wish to learn more about the medical problems and proper medical therapies for treatment.

Results showed that a majority of respondents use their mobile phones to access the Internet. This could be a golden opportunity to design applications for this device to encourage healthy living. The Ministry of Health Malaysia validated the tremendous potential for information and multimedia communication technologies to contribute to the area of healthcare and

implemented Telemedicine blueprint. One of the key aims of Telemedicine blueprint is to change people's attitudes towards health management from concentrating on seeking post-diagnostic treatment to active prevention. Combination of Internet and mobile technology could facilitate the fulfilment of this proactive approach to health and disease management.

Findings also showed that respondents mostly use search engines like Google and Yahoo to search for health information they need. When using a search engine, they are likely confused by the information they find online simply due to the overwhelming volume of data on health issues that the Internet provides. In addition to online health information overload, due to the lack of oversight or regulation governing online health content online health seekers probably find inaccurate, misleading and dangerous information threatening their health and living. Therefore, health policy makers should provide infrastructures to equip public with E-health literacy to successfully navigate Internet to find information they need.

The current study showed that using the Internet is a useful and easy way for respondents to satisfy their health information needs and to manage their health. It was also found that both perceived usefulness of Internet and perceived ease of Internet use shape women's positive affective feeling about the Internet usage for health information which in turn directly influences health-related Internet use. This suggests that any difficulties and obstacles in creating favourable cognitive beliefs about Internet usage for health information should be reduced to promote health-related Internet use. These results could be helpful for health webpage designers or online health information providers to minimize hindrances of perceived ease of health websites usage discouraging women to use the Internet for health information.

Study also revealed that participants utilize the Internet for health-purposes at moderate level. These findings could be resulted in respondents' cognitive beliefs and affective feelings concerning Internet usage as a health information source. Malaysian health policy makers and health care professionals should do a comprehensive study to recognize the factors positively influencing health-related Internet use and encouraging women to use the Internet as a tool for health management and more importantly prevention and diagnosis of diseases.

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