

HEALTH INFORMATION SEEKING BEHAVIOUR OF WOMEN IN A WEB-BASED ENVIRONMENT: A SURVEY OF LITERATURE

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ABSTRACT

The exponential growth of the World Wide Web has been the catalyst for an information revolution. Amid this growth, there has been the obvious benefits to individuals of being able to access information on any given topic from anywhere in the world. Similarly, there has been an incredible growth in health related information on the Web. The growth in health-related information has been so fast and their content so expansive that it is virtually impossible not to find information on any type of illness, regardless of the severity or rareness. It is well known that many individuals with health problems turn to the Web to seek out relevant health information to improve their lives. Notwithstanding the fact that Web-based health information search has turned out to be a common activity for persons with innumerable health concerns, limited attention has been paid to ascertain how women seek Web-based health information. Hence the need for a study to examine how women seek health information in a Web-based environment. This paper is based on a study that investigated the health information seeking behavior of women through a desk research. We examined various literatures that revealed regional and gender gaps in internet accessibility and usage for health information. The study further revealed a number of factors that motivate women to seek Web based health information and the Web-based sources consulted for health information. The paper concludes by recommending that more gender sensitive studies should be undertaken on health information seeking behavior particularly in the African context.

Key words: *Online health information seeking, e-health, Internet access, World Wide Web, women's health, information need.*

1.0 INTRODUCTION

Health information seeking (HIS) is increasingly being recognized as an important activity in today's information age. It is a vital activity toward achieving health behavior change (Lustria, Smith and Hinnant, 2011) and it is a key coping strategy in health-promotive activities and psychosocial adjustment to illness (Lambert and Loiselle, 2007). Consequently, understanding the health information seeking behavior (HISB) of individuals is crucial, especially in today's information abundant age. More importantly, understanding the HISB of women is essentially needed because according to Wathen and Harris (2006), women are active information seekers, particularly in the context of managing health for themselves and their families. Hence, there are

unique challenges and enablers to health information seeking for women. Das and Sarkar (2014) aver that understanding health information-seeking behaviors and barriers to care and access among pregnant women can potentially moderate the consistent negative associations between poverty, low levels of literacy, and negative maternal and child health outcomes.

Lambert and Loisel (2007) submit that researchers and clinicians, alike, are interested in understanding how and why individuals obtain health information, where they go to retrieve such information, what particular types of information they prefer, and how the health information sought is used as this helps to inform policy and health service provision.

Health information seeking behaviour, or health search, according to Lambert and Loisel (2007) is different from search of other information types in many ways. According to their analysis, the broad sense attributed to HISB relates to the ways in which individuals go about obtaining information, including information about their health, health promotion activities, risks to one's health, and illness. This article addresses the subject of women's health information seeking behaviour within this broad context.

The explosion of ICTs has provided users with wider array of sources for searching for health information. The Web has emerged as one of the most important sources of health information globally information such that the number of online health information seekers has grown remarkably (Nolke et al, 2015). For instance, 72% of U.S. Internet users access health information online (Pang et al, 2014). In UK and U.S nearly a fifth (Nuffield Council on Bioethics, 2010) and 48.6% of people respectively (Paul et al, 2013) refer to online resources and services before consulting a doctor, and in Europe, 71% of internet users had used the internet for health purposes (Higgins et al, 2011). The Web is a great resource for one to learn about a specific disease or health condition. Although the Internet is a copious source of health information, how women look for health information on the web remains unclear. More Web user studies, especially in developing countries are needed on women's HISB on the Web to guide the design of Web-based health information delivery systems. Given the need for more studies in this area, this paper examined the studies that have been conducted regarding women's health information seeking behavior in a web-based environment. Specifically, the study attempted to:

- i) review studies on women's access and use of web-based health information
- ii) ascertain the motivation for women to seek web-based health information, and
- iii) investigate the web-based sources used by women to seek health information

1.1 Rationale of the study

It is important to understand online health information seeking behavior as this may help policy makers in designing policies that can improve the allocation of resources to better disseminate quality health information and to inform people about its accuracy (Xiao et al (2014). Information providers may use the findings to gain insights into design of online health information resources and increase the effectiveness of using online health information. Understanding the web channels mostly used by women to obtain online health information may assist information providers to reach out to women with information in appropriate format and content.

1.2 Methods

The literature reviewed for this analysis includes journal articles, theoretical and empirical articles on HISB. We found over 3,000 articles about the information-seeking behaviors in many fields different fields but only one potentially relevant article about HISB of women (Marton, 2010). Most of the articles reported on investigations in oral or print environments. The inclusion criteria for the chosen articles was those with a focus on the inclusion of “information seeking,” “online,” “web,” or “internet” in the title or the text, and scholarly works published in a peer-reviewed journal. Journal articles reviewed were from the Sage journals, BMJ journals, BioMed Central Medical Education Journal, Journal of Medical Internet Research. The database for ScienceDirect was also searched for journal articles. Due to use of the words “online,” “web,” or “internet” interchangeably in most searches these searches were insufficiently thorough to find more than half of the available articles on the subject. The search was conducted in Library and Information Science and health science disciplines. The period from 2000 to 2016 was retained, as it represents a period long enough to analyse studies undertaken on HISB of women on the web. In all the searches conducted, online HISB was discussed in the context of both women and men. Therefore, the studies reviewed are not touching upon women alone. The data were extracted from these studies and then summarised qualitatively to obtain an overview of the current state of research in this field.

2.0 LITERATURE REVIEW

2.1 Internet accessibility and usage for health information seeking

The gender gap in Internet accessibility and usage has been observed by several studies (Pew Research Center, 2015; Online Classes, 2014; Penard et al, 2013; Abraham, Mörn and Vollman, 2010). According to Abraham, Mörn and Vollman (2010) observed that as a percentage of global Internet users, women are still slightly in the minority, constituting only 46% of the Internet population globally. On average across the developing world, nearly 25 percent fewer women than men have access to the Internet, and the gender gap soars to nearly 45 percent in regions like sub-Saharan Africa. In most higher-income countries, women’s Internet access only minimally lags that of men’s, and in countries such as France and the United States, in fact exceeds it. For instance, Pew Research Center (2015) found that in U.S, 87% of the Internet users were male while 86% are women. The situation is the same in Africa. For example, a study by Penard et al (2013) in Cameroon revealed that Internet usage is higher for male than female. As many as 70% of a nation’s men have accessed the Web before, compared to just 14% of women in developing countries due to prohibited freedom, lower literacy rates and lack of technological knowledge and in sub-Saharan Africa, Web usage among women drops dramatically (Online Classes, 2014).

Although studies above indicate that women’s use of Internet is limited, literature also demonstrate that women are more likely than men to use Internet to search for health information (Bidmond and Terlutter, 2015; Manierre, 2015; Zschorlich et al, 2015; Fiksdal et al, 2014; Tong, Raynor and Aslani, 2014; U.S. Department of Health and Human Services, Health Resources and Services Administration, 2013; Fox and Duggan, 2013; Higgins et al, 2011; Abraham, Mörn and Vollman; 2010; Lagan, Sinclair and Kernohan, 2010; Bakar and Alhadri, 2009; Larsson, 2009; Plantin and Daneback, 2009).

2.2 Motivation for online health information seeking

Studies have investigated reasons why women look for health information on the web (Fiksdal et al, 2014; Higgins et al, 2011; Powell et al, 2011; Bernhardt and Felter, 2004). The findings of these studies revealed several motivating factors for online health information including wanting to learn more about diagnosing, seeking out a second opinion to challenge other information, treating specific health condition, enhancing a clinic visit, seeking out advice and support, perceived external barriers to accessing information through traditional sources and to help someone else.

With the availability of free, anonymous, and immediate information, many individuals' first stop to learn more about a specific symptom or disease on the Internet. For instance, the study by Prescient Digital Media (2016) revealed that 75% of healthcare searchers have been prompted to go online to investigate symptoms or conditions. The anonymity of web-based health interventions reduces the interpersonal discomfort some people may feel with respect to traditional forms of support such as support groups due to the anonymity they provide (Paul et al, 2013). Depending on the health condition, information drawn on the Internet can help make decisions about whether to consult health professionals (second opinions) for advice or medical attention or not (Prescient Digital Media, 2016 and Lee et al, 2014). This is supported by WHO eHealth survey which revealed that 29% had used information from the internet to decide whether they needed to see a doctor, and of those that did attend, one in four used the internet in conjunction with the doctor's appointment (Higgins et al, 2011).

According to Fiksdal et al (2014) internet searching is used as a valuable tool in preparing for the clinic visit. Studies by Fiksdal et al (2014) and Karianne and Wijngaert (2003) found that information gathered on the Internet is used as a preparation for a doctor's visit as this information help prepare them to ask more questions of their doctors (Prescient Digital Media (2016). Fiksdal et al contend that patients would want to enhance a clinic visit by being more well-prepared and well-informed before visiting their health providers. Such preparation according to Fiksdal et al facilitates "a more enriched experience and allows patients to become more knowledgeable and ask better questions to provider, thereby increasing communication and education and building the patient/provider relationship as there is so much information and the doctors do not get it all". For others, the information they access prompt them to ask questions of the doctor or seek a second opinion (Higgins et al, 2011). Internet searching is further used to clarify/verify information discussed during consultation in order to be more informed, understand the medications prescribed by health professionals (Lee et al, 2014) or decide on how to treat an illness (Prescient Digital Media, 2016). It also helps in gaining emotional support including reading about experiences of others with the same condition(s) (Lee et al, 2014).

Research shows that a growing number of patients bring health information resulting from their own searches to their doctor appointments and that online health information searches conducted before consultations with doctors had a reassuring effect on patients and helped ameliorate patient confusion as a result of information overload (Lustria, Smith and Hinnant, 2011).

Searching to replace a clinic visit due to perceived external barriers to accessing information through traditional sources is another motivation for seeking online health information. Karianne and Wijngaert (2003) found that information gathered on the Internet is used as replacement of a

doctor's visit or decide whether to use therapeutic products prescribed by the doctor or not (Lee et al, 2014). According to Prescient Digital Media (2016), their study revealed that 41% resorted to the Web to self-diagnose or self-treat a condition. Contrary to Karianne and Wijngaert (2003), Rose, Jenkins and Fuller (2002:234) in their study observed that, "most people use the Internet as an additional source of information rather than a substitute for visiting a health professional." Findings further show that people engage in online searches on behalf of others. One of the reasons why people look for information on behalf of others, according to Fiksdal et al (2014) is computer literacy, as some people may not know how to use computers or Internet or just have technophobia.

Studies have also examined the kinds of health information women search for on the web (Fox & Duggan, 2013; Huntington et al., 2003). The findings of these studies are that women search for information about: (i) specific medical conditions, (ii) symptoms and diseases, (iii) treatment and drug, (iv) healthy lifestyle, (v) weight loss, (vi) nutrition and diet, (vii) general body fitness, (viii) people with similar symptoms, (ix) support groups, (x) health specialists, and (xi) health services and facilities. Numerous studies demonstrate that women benefit from online health information in various ways. Tonsaker, Bartlett and Trpkov (2014), Fiksdal et al (2014); and Geller et al (2006) demonstrate that women benefit from online health information in various ways such as:

- i) *Timeliness and currency*: The web provide easy, inexpensive and rapid means of generating, accessing, updating, storing, disseminating, transmitting and communicating huge amounts of information.
- ii) *Interactivity*: An increasing number of sites have interactive features which makes it possible to provide instantaneous transmission of information to and from individuals, organisations and nations at large.
- iii) *Availability: Information access is* not limited by time and location and access can be at any time anywhere in the world, simultaneously by multiple users and heavily used resources can help ensure its availability to users unlike in print environment.
- iv) *Vast amounts of information*: Web sites contain extensive information that addresses many different aspects of women's health concerns
- v) *Quality and reliable information*: Apart from quantity, the quality of health information available on the Internet as well as its reliability and affordability has increased substantially
- vi) *Privacy and anonymity*: Web-based resources including sensitive health information can be conveniently searched for in greater privacy.

2.3 Web-based sources consulted for health information

Numerous studies demonstrate that women consult various web-based health information sources (Bidmond and Terlutter, 2015; Gavгани, Qeisari and Jafarabadi, 2013; Higgins et al, 2011; Marton, 2010; Nuffield Council on Bioethics, 2010; Bakar and Alhadri, 2009; Cline and Haynes, 2001). Some of the sources highlighted in these studies include homepages or websites, social networks, blogs, discussion groups/forums, online databases, e-mail, chatrooms, e-books/journals, search Engine, Web-based listservs and newsgroups, Web-based bulletin boards, etc. These have been broadly categorized by the researchers into four main categories and discussed briefly as follows:

Health Websites: There are several tens of thousands of health websites devoted to health and wellness from which consumers can access health information directly. These websites have been created by both individuals and organisations. Websites published by individuals may, according to Familydoctor.org editorial staff (2014) offer support and advice about coping with certain conditions and their treatments.

Web 2.0 tools: Web 2.0 tools and methods have attracted considerable attention as a means to improve health care delivery (Hughes et al, 2009). Web 2.0 tools allow individuals to share information, ideas, personal messages, images, and other content. Web 2.0 tools provide a variety of features that serve different purposes for the individual user. Among the many web 2.0 tools used to communicate health issues include social networking sites (e.g. Twitter, MySpace, Facebook, LinkedIn, WhatsApp, del.icio.us, QQ, WeChat, Google plus, Facebook Messenger, Qzone, WeChat, Tumblr, Instagram, Skype, Viber, Snapchat, YY, etc), multimedia sharing sites, wikis (e.g. Wikipedia) and Blogs.

- i) *Social networking sites:* According to Newbold and Campos (2011), social media is being used for spreading health messages, providing support related to chronic illness and connect healthcare consumers with providers. Social media sites allow users to build profiles and extensive networks with other users. Often users share updates about themselves, links to external content, photos and videos.
- ii) *Multimedia Sharing Sites:* Various multimedia technologies are being used for learning, particularly for health care. Video and photo-sharing sites like these are most popular among younger women (Abraham, Mörn and Vollman (2010). A study by Keller et al (2014) found that 54% had used YouTube to share health information on medications, symptoms, and diagnoses and by patients to share personal cancer stories (Moorhead et al, 2013).
- iii) *Wikis:* A wiki is a collaborative Web site whose content can be edited by anyone who has access to it. A study by Laurent and Vickers (2009) shows that Wikipedia is a prominent health information Web site based on its position among search engine results for health-related queries as Wikipedia ranked among the first ten results in 71–85% of search engines and keywords tested. With now more than 2.5 million articles (Laurent and Vickers, 2009), Wikis can be used as a source for obtaining health information and knowledge, and also as a method of virtual collaboration, e.g., to share dialogue and information, or allow learners to engage in learning with each other, construct health knowledge or be part of a virtual community of practice (Boulos, Maramba and Wheeler, 2006). While not a specific medical Internet encyclopedia like MedlinePlus or NHS Direct Online, Wikipedia contains articles on many medical topics as results by from Laurent and Vickers' study showed that Wikipedia's good results for rare diseases compared to other online health resources was an indication that it has articles on a wide range of conditions. It is used to convey information and express opinion. Comments are also allowed.
- iv) *Blogs:* There are many health blogs covering diverse health related concerns from which women access health-related information. Wikipedia (2016) broadly classifies these health blogs into personal *journal type* or an *information site type* of blog with a wide range of health blog sub-niches such as *weight loss/diet blogs, training and exercise blogs, disease and disorder blogs, and healthy living blogs.*

Electronic Databases/e-books: Several electronic databases are being searched for health information on the web.

Online support groups: According to White and Dorman (2001), online social support most frequently takes the form of a listserv or mailing list whereby members communicate with each other around a specific health-related topic and while they do not share a physical space, they do share common interests and experiences. There are various kinds of interactions women engage in in an online support group. Kim, Kreps and Shin (2015) looked at the role of social support and social networks in health information-seeking behavior among Korean Americans. The findings revealed that friends, church members, and family members were the important network connections for KAs to obtain health information online. KAs looked for a broad range of health information from social network members, from recommendations and reviews of hospitals/doctors to specific diseases or health conditions. These social networks were regarded as important for KAs because there were no language barriers, social network members had experiences similar to those of other KAs, they felt a sense of belonging with those in their networks, the network connections promoted increased understanding of different health care systems of the U.S. system, and communication with these network connections helped enhance feelings of being physically and mentally healthy.

2.3.1 Searching Strategies and Techniques on the Web

Regardless of the underlying motivations for searching (Fiksdal et al, 2014), studies revealed that when searching for health information online, people primarily begin with commonly used search engines (Briscoe, 2015; De Choudhury, Morris and White, 2014; Fiksdal et al, 2014; Fox and Duggan, 2013; Higgins, 2011; Plantin and Daneback, 2009) such as Google (Fiksdal et al, 2014; Fox and Duggan, 2013;), Bing, or Yahoo (De Choudhury, Morris and White, 2014; Fox and Duggan, 2013). According to Fox and Duggan's study (2013), eight in 10 online health inquiries start at a search engine. This is supported by Zschorlich et al (2015) who, in their study on health Internet searches established that women are the ones mostly searching for health information on the Internet and the most common starting point is a search engine. Fox and Duggan (2013) further submits that others specialize in health information, like WebMD while others start their research at a more general site like Wikipedia. Additionally, scholars have observed that some individuals start at a social network site like Facebook, Twitter, Yahoo, etc. (De Choudhury, Morris and White, 2014; Fox and Duggan, 2013). Briscoe (2015) however, found out in his study that Google was followed by the meta-search engine Copernic, Google Scholar and Dogpile.

2.3 DISCUSSION

The findings above from various studies suggest that the numbers for female Internet users are low and the distribution limited especially in developing countries. Most women Internet users in almost all developing countries are not representative of women in the country as a whole, but rather are part of a small, urban educated elite. However, literature revealed that once online, women are more likely than men to use Internet to search for health information. This finding is supported by Plantin and Daneback (2009), who concluded in their study that when it comes to searching for information about health and parenting, women's online behaviour confirms their offline behaviour as they most often take the main responsibility for the hands-on healthcare of

the family. In fact, the study by Tong, Raynor and Aslani (2014) also demonstrated that women and men differ in their frequency of usage of different channels on the Internet for health-related information searching. In comparison to men, women report a higher frequency of using health forums and blogs and search engines as well as search engines. Affirming the fact that women frequently seek health information, Bakar and Alhadri (2009) submits that regardless of location [or medium], women tend to be the primary seekers of health information for their children and other family members, as well as for themselves because in addition to taking care of nutrition for the family, women are expected to know a basic health care to ensure that first aid on ill family member can be performed before asking further treatment in a health center. Fox and Duggan (2013) claim that many women have now added the internet to their personal health toolbox, helping themselves and their loved ones better understand what might be ailing them. Thus, their health Internet searches includes searches related to serious conditions, general information searches, and searches for minor health problems.

The studies have revealed that many factors motivate women to look for online health information. Further, the findings of the study further suggest that several web-based sources are consulted for health health information sources. This confirms other findings, for instance by Prescient Digital Media (2016), who reported that:

- 59% resort to Internet-based resources (including Web sites, search engines, online advertisements, blogs, forums, and social networks) for health- and wellness-related information (versus 55% who ask their physician)
- 24% named Internet resources (including Web sites, search engines, online advertisements, blogs, forums, and social networks) as their most-trusted source when asked to name the top three sources they trust for information about health- and wellness-related information
- 49% of respondents considered Internet resources (including Web sites, search engines, online advertisements, blogs, forums, and social networks) as being very or extremely important in their decision not to take a prescription medication.
- 34% of respondents use social media resources to research health and wellness topics, with Wikipedia, and online forums and message boards as the most important tools.

As such, the researchers established that the web-based health sources that are consulted for health-related information by women can be broadly grouped into four main categories including (i) health Websites; (ii) Web 2.0 tools (iii) Electronic Databases/e-books, and (iv) Online support groups. Is it important that health information is sort from a variety of sources in order to have completed information to make appropriate health decisions? Abraham, Mörn and Vollman (2010) confirms our findings that health sites have long been visited by women: 22.8 percent of women visited a Health-Information site in April 2010, compared to 17.4 percent of men. Pharmacy sites are also 36 percent more likely to be visited by women than their male counterparts. Health has one of the largest overall differences in male and female reach, with a 6-point gap between global males and females aged 15+. For instance, community and Lifestyle sites, traditionally aimed at women, continue to attract this audience, according to Abraham, Mörn and Vollman, especially with parenting, food and home-related content. Health sites continue the trend of attracting primarily female audiences. Plantin and Daneback (2009) also observed in their study that there has been a phenomenal increase in the number of such sites and today many sites are entirely dedicated to parents and parents-to-be. These sites often contain a

mix of activities and offers, ranging from commercial products to health-related information and the possibility to establish social contacts. For instance, women can use web sites as places to "shop, socialize, and research a wide range of topics". Information on health-related websites, according to Nuffield Council on Bioethics (2010) comes in many formats including data, text, audio and video. For instance, the general health information provision site identifies medical writers and editors, physicians and health educators amongst its editorial staff while other sites take a more user-orientated, 'Web 2.0' approach, whereby content is user-generated, and collaboration, information-sharing and interactivity is paramount, for example in the case of patient sites which are often developed and run by people with a particular condition (Nuffield Council on Bioethics, 2010).

Web 2.0 tools have become popular for health information and communication over the years. The study by Newbold and Campos (2011) for instance, suggest that the use of social media is growing exponentially, and extending into the health field especially among women. Abraham, Mörn and Vollman (2010) submit that:

“Regardless of how much you believe that women are primarily communicators, networkers and facilitators, it is clear they are embracing social networking in a way that men are not. Furthermore, the rise of social networking has prompted women of all ages to engage in a host of associated online activities, such as photo - sharing, gaming, video viewing and instant messaging. All of these activities have benefited from their linkage with Social Networking sites in terms of their ability to attract new female users.”

Generally, advantages of Web 2.0 include improved interfaces, interactivity, user-generated content and 'collective intelligence' (Nuffield Council on Bioethics, 2010), making the tools richer as more people use them (Hughes et al, 2009). Users from all walks of life can create and share content online (Prescient Digital Media, 2016). This implies that patients have the ability to go beyond just researching health facts on the web to actively sharing their experiences with each other – not only for emotional support but also to benefit from collective intelligence and gain clinical knowledge from each other (Prescient Digital Media, 2016). Additionally, with increased participation in use of Web 2.0 tools, there is a great potential for patients to have more control and play a larger role in the management of their own health (Prescient Digital Media, 2016). For example, AskDrWiki is a site upon which anyone with a proven medical background can provide information (without being a member of the editorial staff) (Nuffield Council on Bioethics, 2010). Despite awareness of information credibility risks with Web 2.0 content, according to Hughes et al (2009), it has a role in information seeking for both clinical decisions and medical education and this is enabled by the ability to cross check information and the diverse needs for background and non-verified information.

- i) Enhancing patient compliance with therapies
- ii) Providing preventative health information
- iii) Enhancing doctor-patient communications

Women also actively search electronic databases for health information. The findings by Cline and Haynes (2001) on online support groups concurs with our findings that most women join online support groups. Social support groups provide mutual aid and self-help for people facing chronic disease, life-threatening illness and dependency issues (White and Dorman, 2001). This

information can be received in “own language” and tailored to personal needs. The benefits that accrue from use of social support groups include enhanced quality of life, improved decision making and increased survival time (White and Dorman, 2001). The convenience and accessibility of online support may have strong appeal to these women (White and Dorman, 2001).

For most women, however, our findings revealed that Google is by far the most popular search engine. Google was described as an ease to use search engine and that it has the ability to retrieve quality results and that it is capable of bringing up the most variety of answers (Fiksdal et al, 2014). However, Zschorlich et al (2015) noted that although Google is by far the most common first step to searching, its main use is simply as a tool to reach other sites. Once Google supplied a list of relevant sites to visit, participants reported visiting many sites in order to satisfy their searching demands.

2.4 GAPS IN LITERATURE

Findings show that women’s HISB is ignored largely and there are very few studies that have explored the HISB of women particularly in a Web-based environment. Again, most studies are confine to specific health condition of such groups of people as students, engineers, academicians, etc. existing studies are more oriented towards information needs on sectors such as agriculture (i.e. farmers), industry (i.e. traders, journalists). Few studies have been conducted outside these fields. More still, there are very few studies conducted in developing countries and Africa to be specific. Statistics on internet accessibility and usage in most cases not gender specific on Internet usage and accessibility.

2.5 CONCLUSION AND RECOMMENDATIONS

The study has shown that women, use the web to access health information to a larger extent than men. The study has also shown that several factors motivate women to access web-based health information. Several kinds of health information are searched for ranging from specific medical conditions to health services and facilities. A number of web-based sources are used to find health information on the web including websites, web 2.0 tools, electronic databases and e-books and support groups. Google is a common search engines used to initiate searches. Based on the findings above, the following recommendations are made:

- i) Information system designers should develop services and information systems that meet the health information needs of women who access health information on the internet.
- ii) Considering the fact that more women are active in their use of the internet as a source of information, and that the Internet is an effective medium for providing support to a large number of women, institutions and organisations should reach women with information or various interventions in places where they are found on the internet
- iii) There is need to conduct more studies on women on HISB of women in a web-based environment

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