

A Literature Review on the Socio-Demographic Characteristics of Women Who Seek Web – Based Health Information

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Abstract

The Web has become one of the important sources of health information for most people. This study explored the socio-demographic characteristics of women who seek health information on the Web. Specifically, the study sought to establish the gender gap in Internet usage for health information, the sociodemographic characteristics of women who seek health information on the Web and the situational factors that may affect women to access web-based health information. Literature was reviewed from a variety of sources including Sage journals, Science Direct, BMJ journals, BioMed Central Medical Education Journal, Journal of Medical Internet Research using a range of search terms to retrieve literature relevant to the aims of the review. Additionally, Google was used to search for grey literature on the topic. Only sources published in English were consulted from 1997 to 2017. Also, the chosen sources were those restricted to factors influencing “online,” “web,” or “internet” health information seeking. The findings revealed that women are more likely than men to search for health information on the Web. Age, income, education, occupation, gender and marital status were found to be significant factors in as far as access to web-based health information is concerned. Furthermore, the findings revealed that family care giving role, Internet access, web experience, time, place of residence and primary language

affect women's access to web-based health information. The study recommends that information providers and policy makers should create an enabling environment for all women regardless of their status to access online health information. For instance, making Internet accessible and affordable in both rural and urban areas can assist to bridge the digital divide.

Key words: Online health information behaviour, e-health, e-patient, Internet access, World Wide Web, women's health, information access barriers.

1.0 Introduction

Fundamental policy drivers globally include enhancing peoples' roles in managing their health; focusing services around needs and preferences of individuals; and providing information to support peoples' contributions and choices. In fact, sustainable health in any society should be achieved by the people themselves usually by attaining coping and defensive mechanisms with regard to health care. *"Our health is no longer something we entrust entirely into the hands of others. Individuals are stakeholders in their own health, taking an active role in preventative and curative healthcare in collaboration with health professionals..."* (The EU Health Policy Forum, 2005). Mills and Todorova (2016) also adds that medical practice has moved away from models of interaction where the medical practitioners direct the health management of patients. Current models aim to improve patient participation and independence and allow individuals to take greater responsibility for their health. Similarly, the above entails that individuals including women should take it upon themselves to improve their quality of life. Affirming the importance of maximizing the individual potential to improve one's health, the

United Nations further submits that:

“Women ... are potentially the most powerful agents for improving their own health and achieving prosperous and sustainable societies... Everyone is born with a unique biological potential for health and then acquires potential from education, skills and life experience... (Every Woman Every Child, 2015).

Lifestyle choices and behaviours affect people’s health ((Mills and Todorova, 2016). Seeking health information is a crucial determinant of health behaviour. According to Every Woman Every Child (2015), information and **knowledge** as well as **technological advances** can be at least as important as economic resources in improving health and well-being. The World Health Organisation cited by Morna and Khan (2000), affirms that 40% of [good] health is information. Most health problems can be treated at home or can be prevented by accessing health information. Affirming the importance of women to access health information, Burns et al (1997) add that:

“Whenever a woman has signs of a health problem, she needs information in order to solve it. She needs to know what the problem is, its cause, what can be done to treat it, and how to prevent it from happening again. Some health problems can be treated with skilled medical care. But most health problems can be treated at home or can be prevented by accessing health information.”

Reading current and accurate health information can help individuals to stay up to date and prevent illnesses or reduce symptoms of some conditions. If accessed, health information not only contributes to awareness campaigns, education of women

in self-care but also provides support for health decision making (Surman and Bath, 2013). For instance, individuals can take action when sick by visiting medical experts and not waiting until the condition gets worse. Thus, “information... is a key resource for managing one’s health” (Ruppel and Rains, 2012).

Access to health information is fundamental to the improvement of lives and the creation of human capital upon which the development of societies depends. It increases people’s knowledge and awareness of what is taking place around them, which may eventually affect their perceptions and behaviour (Central Statistical Office et al, 2009). It is the foundation for better health. Millions of lives can be saved with access to relevant, reliable and useable health information from a reputable source / medium. The Health Information for All (2015) contend that ‘tens of thousands of people die every day, often for the simple reason that the parent, carer or health worker lacks the information and knowledge they need to make appropriate decisions and save their lives... Health knowledge of parents and family caregivers can often mean the difference between life and death’. Xiao et al (2014) observed that with the increasing availability of online medical information sources, as well as the desire to take more responsibility for health and controlling costs, a growing number of people are using the Web to find health related information.

Research on peoples’ Internet searching habits show that looking for health information is the third most common use of the Internet after email and product research (Fox and Fallows, 2003) and the number of people searching for medical information on the internet is large and continues to rise annually (Nolke et al, 2014; Ardito, 2013). 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.

- In Europe, 71% of internet users had used the internet for health purposes (Higgins et al, 2011).

A number of studies have identified discrepancies in the use of online health information. This is owing to numerous factors (Fiksdal et al, 2014; Xiao et al, 2014; Lee, 2013; Nolke et al, 2015; Higgins et al, 2011; Fox and Jones, 2009) including individual or demographic characteristics and situational factors (Xiao et al, 2014; Lambert and Loiselle, 2007). However, very little if any is known about who has access to web-based health information among women (Kapadia-Kundu et al, 2012; Anken, 2007 and Adam and Lasisi, 2011). Limited understanding of the socio-demographic characteristics of women who seek web-based health information may deny most women access to relevant information that can enable them to make informed decisions about their health. Not only that, system designers may end up developing systems that would not meet the health information needs of the entire women populace. In fact, Albright (2007) argues that one of the general approaches that can be undertaken for disease prevention campaigns is to clearly understand the circumstances of the particular set of individuals or target audience in order to design an appropriate information provision strategy. It is against this background that this study investigates the socio-demographic factors of women who seek web-based health information.

1.1 Rationale for the review

It is universally true that to be useful, information must be relevant, appropriate, timely, up-to-date, understandable and factually accurate. Additionally, it must also be tailored to the needs and

abilities of specific target groups, and be accessible (easy to understand and to use/act upon) and people must know where to go if they are trying to find good quality information and how to assess the reliability of the information they find (EU Health Policy Forum, 2005). Goossens et al (2016) is in agreement with this and established in their study that international literature reveals that individuals like tailored interventions; and read, remember and discuss the content of tailored interventions more often than standardized interventions. Therefore, tailored interventions are more effective and efficient than standardised interventions in promoting good health among women. Otherwise, continuing to develop delivery mechanisms for health information, according to Wathen and Harris (2006), without first understanding the needs of various types of users as part of the delivery system, only exacerbates the problem. Higgins et al (2011) also established that summaries of existing knowledge can provide a powerful resource for practitioners and policymakers. Such reviews also enable researchers to focus their attention on identified gaps in knowledge. They may also assist policy makers, system designers and information providers to put in place appropriate measures in order to achieve equity in web-based health information access or health-related Internet use. According to Lee (2013), reducing the inequality of access to health information is linked to reducing and preventing an unequal burden of disease. Thus, to increase the number of online health information seekers and reduce the disparities in access, the characteristics of individuals who search health information via the Internet need to be understood and identified.

1.2 Objectives of the review

This literature review provides an overview of socio-demographic factors of women who seek web-based health information. Specifically, the study investigated the:

- (i) Gender gap in Internet usage for health information,
- (ii) Sociodemographic characteristics of women who seek health information on the Web, and
- (iii) Situational factors that may affect women to access web-based health information.

2.0 Methodology

Literature was reviewed from a variety of sources including Sage journals, ScienceDirect, BMJ journals, BioMed Central Medical Education Journal, Journal of Medical Internet Research using a range of search terms to retrieve literature relevant to the aims of the review. Additionally, Google was used to search for grey literature on the topic. Only sources published in English were consulted from 2000 to 2017. Also, the chosen sources were those restricted to factors influencing ‘online,’ ‘web,’ or ‘Internet’ health information seeking. Therefore, the terms ‘online’, ‘web’ or ‘Internet’ have been used interchangeably in this study. In terms socio-demographic characteristics, the study’s focus was on age, income, education, occupation and marital status of web-based health information users while family care giving role, Internet access, web experience, time, place of residence and primary language where the situational factors studied.

3.0 Results

3.1 The gender gap in Internet usage for health information

Previous studies have found that gender impact HISB (Anker et al 2011; Weaver et al, 2010) both online and offline. Thus, studies have found out that women are more likely than men to use Internet to search for health information online (Bidmond and Terlutter, 2015; Manierre, 2015; Zschorlich et al, 2015; Nolke et al, 2015; Fiksdal et al, 2014; Tong, Raynor and Aslani, 2014; U.S. Department of Health and Human Services, 2013; Lee, 2013;

Fox and Duggan, 2013; Higgins et al, 2011; Abraham, Mörn and Vollman, 2010; Turgut, 2010; Lagan, Sinclair and Kernohan, 2010; Yan, 2010); Cohen and Adams, 2011; Bakar and Alhadri, 2009; Plantin and Daneback, 2009; Tong, Raynor and Aslani, 2014; Karianne and Wijngaert, 2003). The Average 15 plus female spends 8% more time online than her male counterpart. They spend 24.8 hours on average per month online compared to 22.9 hours for men (Abraham, Mörn and Vollman, 2010).

According to Plantin and Daneback, it is generally possible to conclude 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 (Plantin and Daneback, 2009) due to socialization and learned gender roles (Nolke et al, 2015). 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 an ill family member can be performed before asking further treatment in a health center. The authors continue to argue that if a family member is sick, for instance, a partner, parent or child, a woman usually acts as a nurse if not as a doctor. This, according to Nolke et al (2015) might especially apply to the nursing of relatives as the majority of informal caregivers are women and they are more health-conscious than men. 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.

3.2 Socio-demographic characteristics of women who seek health information on the web

Individual or demographic characteristics of health information seekers on the Web include both socioeconomic and psychological characteristics (Xiao *et al*, 2014). Socioeconomic and psychological characteristics among others pertain to age, gender, marital status, education level, income level and occupation (Xiao *et al*, 2014; Fiksdal *et al*, 2014; U.S. Department of Health and Human Services, 2013; Lee, 2013). Age, to start with, has been found to be a critical factor to online health information access. Internet use for health information vary by age whereby young women are most likely to use the Internet for health information (Fiksdal *et al*, 2014; Penard *et al*, 2013; Nolke *et al*, 2015 Plantine and Daneback, 2009; U.S. Department of Health and Human Services, 2013; Nikoloudakis *et al*, 2016; Pew Research Center, 2015; Kontos *et al*, 2014; Lee, 2013; Fox and Jones, 2009; Plantin and Daneback, 2009). Internet users tend to be as young as below 30 (Penard *et al*, 2013). Specifically, Nolke *et al* (2015) observed that people over 30 are slightly less likely than those aged 18–29 to seek health information on the Internet. Similarly, Plantine and Daneback (2009) point out that although user demographics vacillate over time, the vast majority of parental Internet users are women with the mean age of less than 35 years.

Income: An adequate income is an important factor in being able to access web-based health information and services (WHO, 2013). Several studies show that women with high income levels are more likely than those with low levels of income to use Internet to seek web-based health information (Nikoloudakis *et al*, 2016; Zschorlich *et al*, 2015; Fiksdal *et al*, 2014; Nolke *et al*, 2015; Shahab, Brown, Gardner, & Smith, 2014; U.S Department of health, 2013; Marton, 2010; Cohen and Adams, 2009; Cotten & Gupta, 2004; and Fox and Jones, 2009). For example, two-thirds of women with household incomes above the poverty line

used the Internet for health information compared to less than one-third of those with incomes below the poverty level (U.S Department of health, 2013). Women with low incomes hardly access health information online due to cost (Karka *et al*, 2011; Mulauzi and Albright, 2009).

Education: Education, either for degree or training for knowledge and skills enhancement affects the information needs and seeking behavior of individuals. In fact, Silke (2005) claims that education and income appear to be the most important variables to digital exclusion. A number of studies show that women with education are more likely than the illiterate to use Internet for health information (Nikoloudakis *et al*, 2016; Penard *et al*, 2013; Higgins *et al*, 2011; Turgut, 2010; Cohen and Adams, 2011; Anker *et al*, 2011; Weaver *et al*, 2010; Fiksdal *et al*, 2014; Shahab, Brown, Gardner, & Smith, 2014; Cotten & Gupta, 2004; Penard *et al*, 2013). For instance, the U.S Department of Health and Human Services (2013) established that healthy choices for diet and exercise could not be as accessible as to those with lower levels of education and income. As such, the Department found that fruit and vegetable consumption increased with educational attainment and that women with a college degree were more than 5 times as likely as women who had not finished high school to have used the Internet for health information. The Department concluded that the proportion of low information seeking was highest among those whose mothers never received a primary school education.

Occupation: Internet accessibility and affordability are also important factors for Internet adoption. Studies have found that Internet users tend to be in employment as they can afford access and have some skills to use the Internet (Penard *et al*, 2013; Fiksdal *et al*, 2014; and Cohen and Adams, 2011). In fact, they claim that people in occupation are more exposed to the Internet at their

workplace as many companies provide free Internet access and employees are required to use it for some tasks. Concerning *marital status*, studies established that being married or being in a de facto relationship is closely related to online health information behavior than for singles (Nolke et al, 2015 and Xiao et al, 2014; Karka et al, 2012; Hallyburton & Evarts, 2014). This could be due stronger social ties in relationships, as people in a relationship seek health information on the Internet not only for themselves but also for their spouses or partners.

3.3 Situational factors that may affect women's access to web-based health information

Literature shows that access to web-based information is also affected by situational factors. The situational factors that were explored include, family caregiving role, Internet access, web experience, time, place of residence and primary language and the family care giving role women play in society. To start with, Marton (2010) identified the *family caregiving role* to be positively related to frequency of seeking health information on the Web. Women are the health guardians of society. Because of their socially embedded role as family caregivers, women, in particular, middle-aged women, are likely to be involved in health information seeking on behalf of those they provide care to, such as children or aging parents. They are overwhelmingly the caregivers for sick and/or aging family members because of social norms. Thus, they look for health information not only for themselves, but also for others.

Internet access has also been considered as a key factor in the adoption of online services and use of online technology. Although the Internet is transforming all aspects of our lives, the digital inequality of Internet access remains (Xiao et al, 2014 and Higgins et al, 2011). Hesse et al (2005) and Atkinson, Saperstein and Pleis (2009) discovered that persons who used the Internet

for health or medical information tend to have access to Internet either at home or elsewhere. According to Xiao et al, a user has more access to the Internet if he or she has Internet connectivity, especially broadband, at home. Users with a broadband Internet connection tend to perceive the Internet as useful; they spend more time online and are engaged in a variety of online activities. In addition, users who have access to high-speed Internet are likely to have more computer skills, more online experiences and better self-efficacy. Therefore, they use more online services. On the other hand, limited access to the Internet could be a barrier to adopting online services. Low or no Internet access may lead to users' inabilities, inefficiencies and lower propensities to search for information online.

Previous studies have found that the frequency of visiting the Internet to look for health information is strongly associated with having *Internet or Web experience* (Karka et al, 2011; Marton, 2010; Warren et al, 2010; Karianne and Wijngaert, 2003). Web experience embraces e-skills and e-health literacy. E-skills include media-related skills (navigating through the WWW) and information-related skills such as search strategies, browsing, finding, selecting, comparing and evaluating information as well as interacting and transacting with the online firm (Penard et al, 2013; Van Deursen and Van Dijk, 2010). Whereas health literacy encompasses the cognitive and social skills required to access, understand and use health information effectively to promote good health (WHO, 2013). Lee (2013) argues that access to health information does not mean that individuals can understand and utilize health information. Online health information seekers need to have a certain level of e-skills and health literacy to understand and utilize health information safely, even though situations of reported use of risky Internet health information are uncommon. E-skills and health literacy improves peoples' access to web-based health information and knowledge, informed consent and

negotiating skills and good utilization of health care and people with such skills tend to be more active consumers of all types of information on the Internet (Neter and Brainin, 2012). Individuals with e-skills and health literacy can further not only merely locate health information but also use more search strategies, and scrutinize information more carefully than can the less health-literate by carefully selecting, analyzing and using the right health information on the Web. Web experience is important generally to all types of Internet ventures competing for the attention of the online public. Women with little Web experience may be inherently less adept at technology.

In as far as *time* is concerned, studies have established women may choose to use the internet-based information as a way to circumvent the time and effort involved in obtaining health information through traditional sources. Especially, women who face greater time pressures in their daily lives will turn to the internet as a source of health information (Pandey, Hart and Tiwary, 2003; Savolainen, 2006; Zoontjes, 2015). Thus, time is a significant context in information seeking as in most cases, it is a scarce resource for information seekers. Hence, the time available for information seeking usually permits people to access and use only a limited set of information sources and channels. The Internet epitomizes instant access to information and overcoming of spatial and temporal barriers of information seeking. Studies reveal that the motives for some individuals of using an online source instead of a physical library indicated available time and place of residence to a source as important variables. Further, Nolke et al (2015) and Savolainen (2006) argue that with respect to *place of residence*, most studies show that people in urban areas are more likely to search the Internet for health information than people in rural areas. Contrary to the above findings, Ruggiero et al (2011) found that living outside of an urban area is associated with health information seeking online. In terms of *primary*

language, Penard et al (2013) found that the probability of using the Internet is higher for English-speaking individuals (including women) and this could be due to the greater availability of English language content on the Web. Primary language can result in barriers to women's access to health information necessary in making informed health decisions.

4.0 Discussion

4.1 The gender gap in Internet usage for health information

It evident from literature that women are more likely than men to use Internet to search for health information online (Carpenter *et al.*, 2011; Hallyburton & Evarts, 2014; Powell, Inglis, Ronnie, & Large, 2011; Stern, Cotten, & Drentea, 2012; Thackeray, Crookston, & West, 2013). Women use the Internet as a productivity tool (Abraham, Morn and Vollman, 2010), that is, for more serious purposes such as searching for health information on behalf of their children or other family members (Turgut, 2010). They are more engaged, more involved, more attentive and apparently better informed decision-makers concerning health matters for themselves and their family members. Therefore, they tend to be more pro-active and engaged in seeking, gaining and discussing health-related issues. Zschorlich *et al* (2015) affirms this by stating that women most often search for health-related information on the internet - either on their own behalf or on behalf of others (Zschorlich *et al*, 2015). They pay more attention to potential worldwide pandemics and were much more attentive as to how the goods they purchase in everyday life affect their health than men did in all the studied age groups (Ek, 2013). Additionally, literature shows that women are more susceptible to diseases and are the main carers in families throughout the world. On the whole, gender roles influence women's exposure to health risks, health outcomes, health care response, the social

and economic consequences of disease and ill-health and above all, access to health information and services.

A serious observation has been made by Ek (2013) that little seem to have been changed since 1960s. Now as then, 'responsibility for knowing about health seems to be part of the woman's role in the family.' Women, according to Ek are thus, by tradition and upbringing expected to take the role of gatekeepers and custodians of the health of others and act as the primary brokers of health care within families. Ek further argues that the disparities in favour of women in the engagement in health-related information have also been suggested to have their deepest roots in culturally ascribed gender characteristics and behaviours. Consequently, men mostly use the internet for entertainment because they depend on their wives or children to look for health information on their behalf (Turgut, 2010). Moreover, Ek (2013) claims that men are often unwilling and lack the motivation to engage in health-related information searches. Due to gender role strains and social constructions of masculinity, men tend to be unaware of sources of health-related information and have inadequate competency to search for them because of either pure ignorance or reluctance of seeking out what they do know to be available.

4.2 Socio-demographic characteristics of women who seek health information on the web

Results from literature have revealed that young women are most likely to use the Internet for health information. The results are not surprising, according to Penard et al as young people are usually more technologically savvy, tend to favor leisure usage (games) (Penard et al, 2013), are often first-time parents, are more accustomed to the daily use of the internet compared to older parents (Plantin and Daneback, 2009), have greater health awareness (Yan, 2010), are far more sensitive to peer role models, whereas the support of close family members becomes

more important than peer influences for older people. While older generations are more likely to use the Internet to search (local and international) information than use it for entertainment, (Penard et al, 2013), they mostly trust “living sources” of information, rather than the Internet (Fiksdal et al, 2014; Yan, 2010), as these are more accessible (Yan, 2010). Parallel to the findings above, Ek’s (2013) study argues that the old have higher health consciousness and awareness; are people with greater sense of responsibility for their own health; and people who, quite naturally, are more concerned about their health status, and thus, tend to seek health information more than the young. In fact, Turgut’s (2010) study found that there was no significant difference among ages of information seekers and non-seekers. This could mainly be due to the fact that the sample in his study included older women. This finding concurs with a recent study by Nolke et al (2015) who found that middle-aged people were more likely than younger people to search for health information on the Internet.

In as far as income is concerned, this study has established that women who earn more are much more likely than those earning less to look online for health information. Those who earn less lack disposable income to pay for Internet access especially as it concerns equipment and connectivity. High income people, according to Turgut (2010) are able to get the necessary equipment such as fast internet connection and personal computers which are necessary for time and place independent information searches. Turgut (2010) further claims that low income people get satisfied with health care professionals’ explanations and go online if a surgery or unknown medicine is advised and according to Fiksdal et al (2014), may have difficulty distinguishing between low and high quality information.

This study has established that educated women are more likely to access web-based health information than the illiterate. According to WHO (2013), the education of women and girls is

the single most important factor in improving a nation's health as it is an essential determinant of her to access health information and services critical for her future autonomy and status. Education can enable a woman to enter an occupation which can give her economic power such as income to access web-based health information and services and generally be able to participate effectively in the information society. In other words, education, is a key source of knowledge and information and has been proven to be an important predictor of female life expectancy. Education determines the kind of web-based health information and services a woman can access. Turgut (2010) claims that more educated people are aware of information sources other than health care professionals and do not hesitate to use them especially when they are not satisfied with the information given by a health care professional. Additionally, they access a wider pool of information, can interpret what they read on the internet and make a conclusion by using this new information in order to discuss with their health care professionals. They also have a clear conception that enables them discuss information they find online with health care professionals.

Furthermore, educated women have been shown to have greater knowledge power in exercising their rights to information and in making choices which affect their own health and reproductive outcomes while those with less education hardly exercise these rights. According to WHO (2013), it is not a coincidence that the lowest maternal mortality rates in the region are found in those countries where there is greater gender equity in access to education. This is so because educated women are more likely to access maternal web-based health information and services than illiterate women. This information can enable them to have greater reproductive autonomy. Infant and child mortality rates tend to be lower among children whose mothers are highly educated. Similarly, contraceptive and condom usage

are common among educated women than the less educated. Educated women are unlikely to bear children at a young age, which in terms of health outcomes is favorable for both maternal and child health. Education helps women to make appropriate health decisions. An educated woman, for instance, is likely to understand the information provided than uneducated women. It is also more likely that an educated mother will not only depend on health workers' advice on health matters (Banda, 2010) but also depend on other sources like the Web.

This study has further revealed that Internet users tend to be in employment. This could be due to the fact that people in employment earn an income which can be used to for equipment, maintenance and connectivity. It is also possible that people in employment have some skills to use the Internet. In fact, studies have established that people in occupation are more exposed to the Internet at their workplace as many companies provide free Internet access to their employees (Penard et al, 2013; Fiksdal et al, 2014; and Cohen and Adams, 2011). This study has also established that being married or being in a de facto relationship is closely related to online health information behavior than for singles. This could be due to stronger social ties in relationships, as people in a relationship seek health information on the Internet not only for themselves but also for their spouses or partners.

4.3 Situational factors that may affect women's access to web-based health information

A number of situational factors affect women's access to Web-based health information. These include family caregiving role, Internet access, Internet or Web experience, time, place of

residence and primary language. In terms of family caregiving role, women are generally responsible not only for their own health but also that of other family members. As a result, they frequent the Web or health facilities for health information. Secondly, Internet access has been established in this study as a key factor in women's access to online health information. Thus, women with Internet access, according to the findings, are more likely to access online health information than those without connectivity. This study is also in agreement with previous studies (Lambert and Loiselle, 2007, Weaver et al 2010) on web experience, that women with higher level of e-skills and health literacy are more likely to seek health information on the Web. As summarized by Fiksdal et al (2014), e-skills and health literacy enable individuals including women to:

- Identify appropriate and reliable sources; assess quality of information
- Use effective information retrieval strategies
- Understand complex technical language
- Interpret and use health information appropriately for self-care activities
- Obtain and evaluate evidence-based information
- Evaluate and weigh evidence to make an informed decision (i.e. Understanding risk and uncertainty)
- Participate effectively in discussions in online support or chat groups (i.e. Communicating ideas clearly; adhering to online social etiquette and group norms)
- Effectively share information without compromising one's privacy

Low health literacy negatively affects safety of health care delivery and treatment outcomes (Raj et al, 2014). Persons with limited e-skills and health literacy can be at serious social disadvantage in terms of their ability to search for the right health information,

read and understand written medical instructions, including medication dosages and understanding results of medical tests and diagnosis, locate health providers and services offered, share personal information such as health history, provide self-care in chronic illnesses, understand how to take medicines (Neter and Brainin, 2012) and are more likely to suffer from diseases (Lee, 2013), have a higher risk of hospitalization, have longer hospital stays, less likely to comply with treatment and are more likely to make medication errors (Raj *et al*, 2014).

The study has further found out that because of the ease with which Web-based health information can be accessed as compared to traditional sources, women prefer the Web as a source of information. Since access to traditional sources of health information is usually far away, and because of the multiple roles and heavy domestic responsibilities, mobility, distance and time tend to limit women to use the web to obtain health information. The Web has added advantages such as support groups, experts and the like. With respect to place of residence, most studies show that people in urban areas are more likely to search the Internet for health information than people in rural areas. This could be due to the fact that Internet connectivity is more in urban than rural areas. Additionally, majority of rural people lack education as well as e-skills and health literacy to access web-based health information. Finally, English-speaking, according to the findings, are more likely to look for health information online. This is because the language that dominates particularly on the web is English (Mulauzi and Albright, 2009).

5.0 Summary of Findings and Conclusion

The findings on the gender gap in as far as access to health information is concerned, have shown that women are more likely than men to search for online health information. This could be due to the family caregiving role and the fact that they are more vulnerable to diseases. Consistent with much previous research

Higgins et al (2011), this study has revealed that information seeking is associated with a wide variety of socio-demographic factors such as age, income, education, occupation and marital status. The study has also established that significant factors such as family care giving role, Internet access, web experience, time, place of residence and primary language affect women's access to web-based health information.

5.1 Recommendations

Based on the findings above, this study makes the following recommendations:

- (i) Information providers and policy makers should create an enabling environment for all women regardless of their status to access online health information especially by making Internet accessible and affordable in both rural and urban areas in order to bridge the digital divide especially among women.
- (ii) All stakeholders should widen choices for free online content access to generate interest and lower the initial obstacle for those unable to use the Web, perhaps by making content available free of charge through the mobile Internet, while recognizing that such content is not a substitute for unrestricted access on fully functional platforms.
- (iii) Information providers should develop and share more content relevant to women's health.
- (iv) Stakeholders should also consider reducing the cost of hardware, software, connectivity, training, and ongoing support/maintenance so that even the marginalized women have access to web-based services.
- (v) Stakeholders should integrate digital and health literacy into existing programs targeting women and girls

5.2 Gaps in literature

There is a dearth of literature from developing countries on online health information behaviours, particularly on the African continent. This study attempts to fill this gap. This study has established that most studies provide some insight into the characteristics of online health information seekers overall. There are few studies that focus on women alone. With a growing number of women populace in the world, it is important to meet their health information needs in all their different stages of life. This is an important consideration, given that current evidence overwhelmingly suggests that men and women exhibit different patterns of help seeking in the community, in part due to different influences on their behavior and health (Nikoloudakis et al, 2016).

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