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Online Health Information and female users; Needs, Usages and Effects

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Abstract

The use of internet for health information is on increase particularly among females. Although as a determinant of the effectiveness of health information, the role of "Information seeking" is recognized as much important as the "content" of the source. Little research, however, has investigated online health information (OHI) seeking behavior among female users. Present study attempts to contribute in bridging this gap. Due to the exploratory nature of the study, focus group was found most appropriate tool .Eight focus groups were conducted from October 2019 to March 2020, bracketing a total of 70 females, who reported to use online sources for their personal health or the health-related issues faced by their dear ones. The participants were asked to converse about the needs for which they seek online health information, the techniques they use to search and select a source , the extent to which they found the acquired information as useful and the effects(if any),they had experienced. Discussions were converted into transcripts and thematic analysis was performed. Significant information patterns were identified and categorized. The findings identified Internet as to be the initial and most frequently used source of information, and guidance regarding health related issues among female users. In most of the cases, the use was need- oriented and participants reported to practice similar searching patterns i.e. use of key words and giving preference to preliminary results. Website was reported to be the most frequently visited and most trusted source of OHI followed by YouTube ,particularly among middle age users whereas young age users consult diverse sources including websites, you tube, instagram and blogs. However, in making health related decisions, the role of online health sources was found that of a supplementary source. The information collected was used either to get an idea or to self-diagnose a health issue based on symptoms. Many reported to use online sources in order to seek reassurance after consulting medical professionals. Socio-demographics and personality traits were found significant determinants of the decisions related to content selection and source credibility. Both positive and negative effects of this convenient and easily accessible source of health information were reported. Young participants were found to have Cyberchondria due to extensive use of OHI. OHI is mainly used by females to gratify informational needs and to get immediate relief from anxiety. Their health related decisions, however, are still physician and medical professionals dependent.

Keywords: *, Online Health information (OHI). Socio demographics, information seeking female user, Cyberchondria*

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INTRODUCTION

We are witnessing an era in which information revolution is progressing at a very fast pace. Internet rather than physician is becoming the first source of information for many (Tonsaker, Bartlett, &Trpkov, 2014; Hesse, Nelson, Kreps, Croyle, Arora, Rimer, &Viswanath, 2005).Due to the developments and increased accessibility to the World Wide Web, the consumption of internet for both Curative and Preventive health information has increased. From Curative Health information(CHI)perspective, access to reliable disease online health information (OHI) has been reported to benefit the users by reducing their anxiety (Arora, Johnson, Gustafson, McTavish, Hawkins, &Pingree, 2002), increase feelings of self-efficacy and decrease in utilization of ambulatory care (Killen, Robinson, Telch, Saylor, Maron, Rich& Bryson, 1989). Helping people to take better care of themselves (Susannah&Rainie, 2000) and increase their understanding of health issues (Baker, Wagner, Singer&Bundorf, 2003)are some other reported benefits of OHI.Similarly as a source of preventive health information(PHI) that includes healthy life style,exercise, and nutritional information, the use of internet is also on increase. The significance of health-related internet use and internet health services has been boosted due to ubiquitous access,quick and easy information retrieval (Tonsaker, et al., 2014) and the interactive nature of content, medium and creator of content (Kim, Eng, Deering&Maxfield, 1999). Numerous functions of internet as a source of health information have been identified.However, researchers have classified them into three broad categories which include Content(looking for health information),Community (participating in an online support group) and Commerce (purchasing medicines or vitamins online) (Eysenbach, 2009).The role of the Internet as an Information source for users, particularly those experiencing illness and its comparison with other media has also been a significant area of research and has gained attention of scholarly community(Eysenbach, 2009 &Raupach& Hiller, 2002). Many have focused on use of internet among patients suffering a specific disease like prostate cancer (Smith, Devine, Jonesa, DeNittis, Whittington& Metz, 2003),lung cancer (Peterson &Fretz, 2003), or health issues related to their dear ones like pediatric information by mothers (Bernhardt &Felter, 2004). Studies have attempted to identify the reasons of using internet as a source of health information(Brashers, Goldsmith & Hsieh, 2006). In the 2000 survey 91% of the information seekers were searching for a specific illness and 26% for mental illness (Rice,2006).Others have found varying degrees of participation in health related online communication activities and role of demographics and other variables like health status and illness experience (Atkinson, Saperstein &Pleis, 2009) on attitudes and behaviors of users regarding health related information. Researches on Online health information have been conducted to understand the ways people retrieve health information on the Internet , how that information is assessed and used and have found differences across cultures in this regard. Jannet Morahan (2004).

This is an established fact that from among the factors which define the ways an individual interacts with the world ,gender is the central one. People's vision/ perceptions about the world including technologies like internet are determined by their gender. (Cho and Hong 2013; Moss and Gunn 2009). Meta-analysis of studies

have found effects of gender differences on health information seeking from online sources. (Ann Hally).

Studies on health communication have also identified women as major gatekeepers for health and have reported higher proportion of women as compared to men with reference to the usage of internet regarding health related information. (Fox, Rainie, 2002&Shen, Wang, Chu, Wan, Viswanath, Chan& Lam, 2017). They are considered more concerned about their health and actively look for services which may help them maintain good health as well as prevent them from diseases (Baker, Wagner, Singer &Bundorf, 2003; Navarro& Wilkins, 2001;Calabretta 2002). A number of explanations for this relatively higher usage among women can be found in the report of World Health Organization (WHO) on women and health. Though natural life span of women is longer than men but they become deprived of this natural and behavioral advantage due to many factors which include discriminations on gender bases, notably in developing regions like Asia. Furthermore conditions such as pregnancy and child birth are associated with women only, which greatly affect their physical health. These conditions cause threats to their health and demand more health care, which unfortunately lacks in low income countries like Pakistan. Social and economic factors which women experience also not only affect their health but restrict their access to health facilities. Due to social and cultural taboos, women and particularly young girls feel hesitated to share their intimate health related issues with others. This may cause hinder or delay in their badly needed health care. For the user of OHI belonging to a traditional society like Pakistan, the availability of and quick and easy access to health information from diverse sources makes internet a useful alternative source of health related information.With a fast growing number of internet connections the Pakistani woman has a great tool at her disposal to gather vital knowledge about her well-being. This information has the potential to be private and accessible at all times wherever a net connection is available.

Also traditionally women are caretaker of their other family members. This factor also enhances the usage of internet regarding health related information for their dear ones among women.Women not only are active seekers of health information, but they also do extensive search and consult various sources than men (Rowley, Johnson&Sbaffi 2015). Beside usage, level of trust in OHI has also been found higher among female users who reported to feel more special and more satisfied in a computer mediated communication(CMC) environment (Lind 1999). The judgment regarding the usage of OHI is also based on the usability of OHI which again is reported to be higher among women(Bidmon&Terlutter, 2015).One of the possible reason of the greater trust of women in OHI is explained by Corrarino(2013) who found women to possess high eHealth literacy as compared to men, on average. eHealth literacy which refers to the ability of the user to search, discover , choose and evaluate health related information from electronic sources to deal with health issues and take steps based on acquired information and guidance (Norman & Skinner, 2006).eHealth literacyis a identified as a significant predictor of perceived trust in OHI.The useand trust is higher not only for their common health related needs for themselves and their dear ones, but also in needs related to their specific conditions like pregnancy and taking care of new born. During these conditions,

they have been reported to access a no. of OHIS including websites, health apps discussion forums, blogs and social media(Lupton, 2016).One of the reported reason is that women perceive internet as a forum where they can seek support and interact with those who are facing same kind/type of health issues. Furthermore it facilitates interaction among those with similar background (Chu, Wang, Shen, Viswanath, Lam & Chan, 2017). More engagement, greater acceptability of Web 2.0,a great extent of social motives and pleasure make women as frequent uses of OHI and enhances their engagement in internet for health related needs (Bidmon&Terlutter, 2015).

Researches that specifically focused women as the user of OHI, have aimed at exploring the degree to which factors like health consciousness(HC) influence online health information seeking and perceived usefulness of OHI. Ashraf,Saeed Pahlevan Sharif ,Fon Sim Ong (2018).The study found health consciousness(HC) as an moderating factor in perceived usefulness of online health information . Similarly a positive association between health consciousness and attitude towards online health information seeking was reported. On the basis of these findings, the researchers proposed to utilize health conscious women who, according to them ,can work as opinion leaders to publicize health-related information .

A large amount of literature is available on online health information, addressing different aspects like consumption, credibility of source and content and role of eHealth literacy. The importance of Information seeking or "the purposive acquisition of information from selected information carriers, as Johnson defines it, (Johnson &Meischke, 1993) is recognized equivalent to the content of that information.

However, those who seek online health information and particularly women as seekers of health related information, have not been the major focus of studies in most of the cases. Therefore, the amount of available information about their characteristics is not very rich (Möller&Oertel, 2008). Furthermore, little is known about the disparities regarding access and usage among sub groups of a specific population.

This gap in the area raises the need to study the major characteristics of online health information seekers so that their needs can be identified. Furthermore, to identify and emphasize improvements that may be made in the field of online health information in terms of the availability and quality of the contents. There is the need to create a profile of users that will also be advantageous by giving an understanding of the factors affecting the user (Ybarra & Suman, 2006). On the other hand, details about what people do with information found online and as a result, what impacts specifically the psychological ones, the acquired information has on users, is an important yet unreported aspect of the emerging e-health movement. Previous researches however, have not broadly taken into account the needs or factors which motivate women to seek online health information, nor has women's awareness of specific health and medical resources been sufficiently examined (Warner&Procaccino, 2004). Furthermore, no specific study addressing the consumption patterns, utilization and impacts of online health information

on users was found while reviewing literature. In the context of the shortageof research in female perspective, particularly in developing countries, it is of high significance to study their perceptions regarding health related information seeking and other aspects that are linked to this process. Ybarra & Suman (2006) have also highlighted the need of making such profile;

"given the number of patients arriving at the physician's office armed with information found on the Internet (Cline& Haynes, 2001), it is important to create a profile of people who are likely to utilize healthcare services because of information found online. Characteristics beyond demographics, including Internet usage, perception of the Internet, and reasons for using the Internet as a resource, are all important aspects of such a profile".

The major objectives of study, therefore, were to explore needs, consumption patterns, and usages of online health information among female users in Pakistan.

The increased trend of using online sources for health related information has opened many avenues to be explored. The motivations, needs and effects of exposure to health related information are among the significant ones.

Patterns of use, consequences and expectations among users have also been a continuous concern, both at macro and micro level. While some studies were broad enough to cover a whole continent and directly collected data from users, (Andreassen, Bujnowska-Fedak, Chronaki, Dumitru, Pudule, Santana, Voss & Wynn, 2007), others found it more appropriate to do secondary analysis of available data in order to explore motivations and consequences of access to health information from online sources from respondents belonging to specific geographic location (Rice, 2006). In a qualitative analysis, Lupton (2016) sought to investigate in detail how women use the diverse range of digital media available to them and what types of information they valued .The study found that many women in countries in the global North were accessing digital media information sources during pregnancy and the early years of motherhood. These included websites, blogs, online discussion forums, apps and social media platforms.

The degree to which OHI gratifies the needs of users is a significant predictor of its usefulness. Researchers therefore have also shown concern in identification of the reasons for which people turn to online source. One such study was conducted by Shen et al. (2017) in Hong Kong that found internet as the first source of information for health related issues. Convenience, coverage of vast information, self-awareness, and being able to share experience and form support groups were reported benefits of OHI by the participants of this qualitative study. The most extensive usage reported was to get an understanding of some health related topic followed by the decision making i.e. whether to visit health professional or not?

METHODOLOGY & PARTICIPANTS PROFILE:

Since, the study was exploratory in nature, focus group was found to be the most appropriate method. Focus group on one hand, provides an opportunity to the

participants to interact with each other and share their experiences, and on the other hand, it facilitates the researcher to get information that would be difficult to obtain through any other method like individual interviews. In total, eight focus groups were conducted. Saturation theory was applied to determine the no of focus groups and the research was wrapped up when focus group were found to be generating new understandings. Each focus group comprised of seven to ten participants. Participants were educated, urban female users of internet ,(age bracket 18 to 50 yrs)who reported to use online sources for their personal health –related issues or as a care-giver to their dear ones or dependent family members. To assure the free-flowing conservation among participants, the focus groups were kept homogeneous. Homogeneity was achieved by including participants of similar age and educational background in each group. The researcher herself moderated the focus groups and took minutes of the discussion. Beside taking notes all focus groups were audio recorded and some were both audio and video recorded to assure that not even a minor response is left unnoticed. The medium of Focus groups was bilingual, including both English and Urdu languages as participants were educated and internet users and therefore were able to understand and express in both languages. All focus group discussions were later converted into transcript in English language and were analyzed thematically. Inductive thematic analysis was used to identify the needs, consumption patterns and effects of OHI. This implied several readings of the transcripts in order to identify themes that repeatedly occurred during the discussion.These themes are discussed in the light of previous researches, where possible.

RESULTS& DISCUSSIONS

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A thorough analysis of focus group data is mandatory in order to have in-depth exploration of the problem little known earlier. This section documents the needs for which women go online for their health related needs, the searching techniques they opt to access their intended information, the role of demographics on their communication behavior toward OHI, and psychological effects of OHI. These categories are based on identified themes afteranalysis of focus groups.

A) Needs: The following needs were identified;

1. To have an idea of the nature and severity of the health issue, based on the symptoms and thus decide whether they needed to visit a health professional or not?
2. To get Information about medicine/s prescribed by the physician. This information included the composition of medicine, remarks about it by the patients and professionals, possible side effects and availability of substitute/ alternate medicines with same composition formula in case of the shortage or non-availability in market. To check if the medicine contains any such chemical user is allergic to. Some even changed dose and timing after reading on internet about the medicine. If had some allergy after taking some medicine, checked on internet to see if the prescribed medicine could have cause it. “I once had severe vertigo and internet search revealed that it was due to the medicine prescribed by the doctor for my skin allergy and the dose he had suggested was very heavy” Namra.

3. To know about the need and procedure of a prescribed test was another identified need. A couple of participants shared their experience of watching you tube videos on the procedure of the medical examination they themselves or some close family member was advised by the doctor.
4. To get information about seasonal diseases and pandemics was the need that was particularly reported by middle aged participants. Who mostly seek OHI for home remedies rather than for medical information.
5. Middle aged women also reported that they use internet when they were in need of a trustworthy and competent medical professional to consult. "I check the online rating and reviews and decide to consult" Dur e Ajam. To trace the availability of competent doctors in their proximity was another relevant need among users. "I mostly use to search for a good doctor or medical institute (Clinic or hospital) in my locality and my decision that whether to visit or not is based on the comments written" Sadaf Iqbal.

B: Search Patterns:A significant no of users prefer Google as search engine. Few reported Yahoo. The preference of search engine, however, was due to their pre-selectionas homepage of the device by the user. Majority of the participants in all focus groups reported to confine to initial three to four websites that appeared on screen as a result of their online search.

1. **Key words:** The use of key words was most common technique not only to search information but also in deciding the relevancy of information.
2. **Question:** Second most common search technique which participants from both age groups reported to search their health related information was writing their query in the form of a question. Use of key words, however was, the technique that was extensively applied not only to search information but also in deciding the relevancy of information. Many believed that the top results contain more key words and thus are more relevant . As you proceed with the results the no of relevant words decreases, they believe.
3. **"Top ones are most viewed and most relevant"** Maheen (Under graduate student/ 22 Yrs). Having been placed on the top also determines the credibility of the source and information. Users belonging to young age do not even consider it necessary to check the credibility of initial results. Those with more age and more education read the few lines under the title, before deciding to open the page or website. "This description provides summary of the content and works as a guideline for me" Saima Butt (PhD./35 yrs). Websites were found to be most frequently and most extensively used source of OHI followed by YouTube.

C: Factors associated with User:

1. **Age /Position in family:**Variation in needs was found among participants due to demographic factors like age, socioeconomic status, (psychographics) and personality traits which were reported to determine the selection and use of any OHIS. The study confirmed the effect of antecedent factors included in comprehensive model of information search (CMIS) proposed by Johnson &Meischke, 1993). CMIS is a blend of Uses and gratification theory, Model of media exposure and appraisal and Health belief model and is widely used

to explain the information seeking among cancer patients. (Han, Wise, Kim, Pingree, Hawkins, Pingree, McTavish & Gustafson 2010). The current study also explored a new important factor i.e. Position of the user in family that affect the communication pattern of users. Age and position in family were found two interlinked demographics antecedent factors in most cases with reference to information needs. For example, women aged 30 and above were more likely to have acquired the status of mothers and ultimately having more no of people who rely on them for health related issues. Their information seeking and selection, therefore, comprised of both personal needs and the needs of their dependents. This also resulted in higher level of dependence on internet among this particular age group. Middle age women use both for personal health issues (either chronic or temporary). Related to their health problem they are permanently having like muscular pain and other family members dependent on them like kids due to their position in family. Young age users though mostly turn to online sources for exercise and fitness. Other major needs among this age group included information related to their intimate issues like menstruation cycle about which they feel hesitated to discuss due to social stigma. Temporary issues like pain in breast, irregular periods and weakness were also reported by many. "My sister has issues with her menstruation cycle .She has downloaded an App named FLO from Playstore .This App has a function called "period tracker" and it helps her a lot predict her periods" Zainab/ Undergraduate/18 Yrs).Other needs among young users included the medical and nutritional information for their parents, having chronic health issues like Diabetic and Hypertension. The findings were in accordance with previous studies that have shown demographics of both health seekers and support seekers to cause diversities in information needs and internet use (Ybarra & Suman, 2006). Differential patterns of health information sources due to demographics like age, race and education (Ybarra & Suman, 2006) and health status (Castrén, Huttunen&Kunttu, 2008) have also been identified. Rice, (2006) reports "those most likely seeking online health information were women, those under 65, college graduates, those with more online experience and those with broadband access".The trust of OHI among users also varied due to their age. Elderly females expressed low trust in internet as compared to their younger counterparts.

2. **Education level:** A difference in pattern of consumption was also identified due to education. Although, internet was reported to be the first source approached in case of health – information need, however, the participants with educational background in pure sciences used it as a secondary source while making decisions related to their health (but they do use it).Similarly those having people in health – related professions in their peer and family, though, reported to use internet as the foremost information source, they had approached, their decisions regarding health related issues were made after consultation with the medical professionals. Participants with higher level of education (post graduated) showed relatively less dependence on internet in making health related decisions, though their prioritize source was Google. (Hesse et al, 2005),after a secondary analysis of HINTS also found that though people reported to prefer physician over online sources, but their actual reported statements showed that they used to search online information before talking to their health care providers.

3. **Personality Traits:**Beside consumption, demographics were also found to have an effect on the attitude of users towards health information. Personality traits in this regard were found the most significant one. While OHI helped users to prepare to face any possible extreme outcome of the illness,it also caused fear and even trauma among some. This fact is supported by many researchers who found personality features as important predictors of the emotional processes people go through daily life (Komulainen et al, 2014, p. 1) and that individual differences in information behavior and personal characteristics of users influence information interest and cause differences in communication behavior like whether they avoid or monitor health information (Stefan &Heinstro¨m, 2011).
4. **Illness experience:**Participants shared many personal experiences where they had approached online sources while they themselves had some sickness or had to look after some family member as a caregiver. Among the participants, middle age participants who had personally suffered from some disease or had illness experience of some family member were found heavy users of OHI and had done more extensive search, either themselves or through their young age children. Their search needs included the information about the disease, pre and post-surgery precautions,collection of information to discuss with the physician and to get more information about the prescribed medicines. Even one participant reported to maneuver the doctor's advice, after directly accessing information about the medicine. "Once the medicine prescribed to my husband for Stomach fungus turned out to be ineffective. Internet search about that medicine indicated brought out that the wrong timing of taking medicine was the reason. It was supposed to be taken half an hour before meal whereas for some reason, Dr. had advised to take it half an after the meal. To avoid the lengthy procedure of taking new appointment and paying visit to doctor, we changed the timing on our own".(Muneeba /PhD scholar/.42 yrs)
5. **Young participant reported to use online sources as an immediate source of self-diagnosis in case of illness.** While realizing to be affected by some, based on their symptoms, to avoid visiting the physician with the fear of being diagnosed with some serious disease.This fact is supported by many researchers who believe that health status or illness experience are important predictors of the health related information seeking behavior of the user. (Johnson&Meischke, 1991; Kealey & Berkman, 2010; Han, Wise, Kim, Pingree, Hawkins, Pingree, McTavish & Gustafson, 2010).

D) Psychological effects:

Although OHI was reported to be usefulsource of information but from psychological perspective, it was found to cause both positive and negative effects on users. Major reported advantages included emotional support in times when the user or some dear one was diagnosed with major health problem. OHI helped to get relief from anxiety and reduce stress in such situations. OHI prepared middle age users to accept the possible extreme results of their personal illness or the illness of their dear ones.Exceptionally, it enhanced the morale of user in situation when even doctor was not very hopeful. "Knowing through internet about high survival rate of the cancer type, my sister in law was suffering from, boosted up our morale,

although the physician was not very hopeful. When you read survival rates of diseases you become hopeful".One of the participants from middle aged group told. "You tube videos were the major source of information for me during my pre and post-surgery which I had to undergo due to breast cancer. Information from internet did not cause any fear to me, rather it helped me in coping with this disease as well as to move through thistraumatic phase of my life".(RahatAjmal/ Mphil/48 Yrs).
The negative psychological effects such as fear and anxiety were also reported due to the easy access to OHI mostly by the young age users. The results of their searches based on symptoms appeared to manifest some serious illness or disease but after consulting the physician it was explored that there was nothing serious. This phenomenon termed as Cyberchondria was mostly experienced by youngage users. Since all sort of health related information is easily accessible on internet, and does not require any specific technical qualification by the user to access. This results in, the increased tendency among user to steadily check Internet sources for health-related information about conditions they fear they might have (Asmundson& Taylor, 2005). Amundson describes that the intention of accessing health information is that it provides relief from the health-related anxiety. "This relief, however, is temporary", he explains and "as soon as the person goes away from the computer, the anxiety returns," Amundson explains.

Although for most of the middle age users' exposure to OHI did not cause any significant distress. A couple of them, however, also experienced fear and panic."After the decision of Cesarean delivery of my first baby, by the gynecologist I watched the video of the procedure on YouTube and got extremely scared.However, my experience did not turned out that muchterrifying as I had feared"(Hadia Bilal/ MS/36 Yrs).

Limitations:

The study lacks the element of generalization. The participants were recruited from a population that belonged to urban area, had educational background and internet access. Furthermore, the age bracket 18 to 55 yearsolder age (those above 60 years of age) users were not included in the study.

CONCLUSION:

Findings drawn from this study provide insight into why online sources are valued for health related information among female users. It further highlights distinct aspects of their communication behavior towards OHI.Findings show that females' users from both age groups i.e. young and middle age, mainly use online sources for informational needs. Socio-demographics were found to cause variation in consumption and effects of OHI.Young age users were found more vulnerable to the negative psychological effects of exposure to OHI. Health is a sensitive area, and thus requires formulation and implementation of more systematic ways that assure content- credibility and standard of information.To enhance the more positive and constructive usage of OHI, and to reduce the unintended psychological effects, eHealth literacy of users should be focused.This can be achieved by incorporating media literacy course at the very early levels of studies. Efforts should be made

and both academicians and professionals should make their due contribution in this regard.

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