

Why Older People Seek Health Information Online: A Qualitative Study

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Abstract—Despite the increasing number of older adults' growing need for health information, little is known about their motivation to seek online health information. This exploratory qualitative study was conducted to examine why older adults seek required health information through online sources. In this qualitative content analysis, we purposefully approached 19 older adults with age in the range between 60–75 (63.78 ± 3.8 years) in Tabriz, Iran. Data were collected via individual, semi-structured face-to-face interviews at a place and time convenient to the study participants from October 2018 to September 2019. We evaluated the content of recorded data until saturation was reached, using MAXQDA 10 software. Subsequently, four central motivational themes were emerged including being self-reliant, achieving a healthier life, seeking reliable sources of health information, and accumulating health information. Older adults seek health information based on their needs and expectations to achieve optimal health status. Our findings provide valuable information for nurses and other health care providers to facilitate older adults' access to trusting and valid online health information. It further suggests that, with the consideration of COVID-19 pandemic, fact-checking skills of elderly in identifying and accessing credible information sources should be addressed in future health literacy interventions.

Keywords: health information, information seeking, adult's health seeking behavior, accessing online information, qualitative research

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INTRODUCTION

Older adults are regarded as the most vulnerable population due to their complicated healthcare challenges [1] and low cognitive ability to perform complex self-care tasks [2]. Older adults use more health care services because many diseases occur during the aging process, especially in the last stages of life [3]. By 2025 the number of older adults will almost double to about 1.2 billion [4]. The increasing longevity and proportion of older adults who live with chronic conditions will exert pressure on the healthcare systems for provision of more appropriate care including availability of reliable health information [3, 5]. This challenge is intensified in developing countries, as by the year 2025 approximately 75% of the older population will live in these countries, which already experience the dispro-

portionate burden of disease and constrains in health services [4, 6].

In making healthcare more accessible, many healthcare organizations use technologies to provide online health information to the population including the older population [7]. Empirical evidence suggest that accessing reliable health information has the potential to improve the users' self-care skills, adherence to treatment, health knowledge, health decision making, quality of life, hopefulness, sense of empowerment, wellbeing, and moreover reduce anxiety in dealing with health issues [8]. However, despite the progressive interest of older adults for health information [9], there is a digital gap in using online health information between younger and older population [2]. The implicating factors include changes in the physical and cognitive conditions of older adults that result in enhanced perceived difficulty, frustration,

and anxiety toward using technology, and developed skepticism toward online information [10]. However, to reach the “Healthy People 2020” goal of increasing the proportion of online health information seekers [11], it is necessary to understand what motivates older adults, in general, to seek online health information.

COUNTRY-SPECIFIC INFORMATION

Similar to global trend, Iran is experiencing an ever-increasing in the elderly population. The proportion of people aged 60 or over in Iran has increased from 7.2% in 2006 to 9.3% in 2016, and it is predicted to reach 10.5% by 2025 and 21.7% by 2050 [1]. The literacy of the population age 65 and over in Iran has had an upward trend from mid-15% in 1975 to nearly 37% in 2016 [12]. Despite the population pyramid showing a reversing trend in Iran, the current healthcare system regards provision of care for the senior citizens secondary to the healthcare needs of the overall population [13]. Inadequate insurance coverage, limited number of elderly care centers, shortage of trained health care providers for the older adults, and inadequate health care structure and processes are some of the challenges of the healthcare system for the older adults in Iran [13]. In addition, there is a negative attitude toward nursing homes in Iranian culture and placing the elderly in a nursing home is considered a social stigma [13]. However, factors such as a treatment-based healthcare system, cultural factors, and lack of necessary infrastructure also hinder the provision of effective home care in Iran [14].

With respect to healthcare delivery, Iran lags behind in normalizing patient-centered practice. The care delivery system in Iran, still, follows the physician-centered approach [14]. Many physicians still hold the parochial thinking that they know what is best for their patients, relegating patients in decision making to low-level supporting roles [14]. Nevertheless, existing evidence shows that patients are eager to play a more active role in health decision-making [15]. Older adults are, also, willing to engage in their care process, sharing information, and searching for online information. Although, low electronic health literacy limits their access [16].

According to the background mentioned, this qualitative study aims to explore Iranian older adults’ motives for seeking online health information. Our findings could contribute in prioritizing the online health seeking needs of older adults and inform health information experts and digital/technology designers in developing online health information that are of quality and age-friendly in design and content.

EXPERIMENTAL

Study Design and Participants

A qualitative design using conventional content analysis approach was conducted in Tabriz, located in northwest of Iran to explore the reason behind older people seeking of online health information.

There were 19 participants aged 60–75 (see Table 1 for their socio-demographic characteristics) who were referred to the urban health centers and other nursing homes in Tabriz, Iran. Participants were invited based on a purposeful sampling method with maximum variation in terms of gender, marital status, level of education, employment and health status. The inclusion criteria were having first-hand experiences regarding the study objectives and being able to articulate their own experiences. Consolidated criteria for reporting qualitative research (COREQ) guided this manuscript [17].

Data Collection

Data was collected by individual semi-structured interviews. Each interview was conducted by the first author using an interview guide. Example of questions were “Why do you search for health information through the Internet?”, “How do you feel about health information seeking on the Internet?”, and “What factors facilitate or inhibit OHIS?” Further explanations were also obtained based on responses of the participants and by asking probing questions such as “would you please explain more about your expression”? The time and place of the interviews were determined by mutual agreement between participants and interviewers. Each interview lasted 60 min on average. All the interviews were recorded using a voice recorder for further analysis. The interviews were continued until data saturation was obtained, where no new concepts emerged [18]. The data collection and analysis were done from October 2018 to September 2019.

Data Analysis

Data analysis was performed concurrently with data collection by using conventional qualitative content analysis. For this purpose, all interviews were transcribed verbatim and then carefully read several times. Next, analysis was begun by identifying units of meaning (codes) that were drawn from the transcripts. The identified codes were compared based on similarities and differences and grouped into the categories and subcategories. Data analysis continued until data saturation was achieved so that no other themes could be drawn. Examples of the content analysis, encoding, subthemes, and main themes are shown in Table 2. MAXQDA 10 software was applied to manage textual data during the coding process.

Table 1. Demographic characteristics of the participants

Participant	Age	Gender	Education	Health status	Occupation
P1	60	Male	Diploma	Patient	Self-employment
P2	60	Female	Diploma	Patient	Housewife
P3	66	Male	Diploma	Patient	Retired
P4	65	Female	Bachelor's	Patient	Retired
P5	75	Female	Bachelor's	Healthy	Health center employee
P6	62	Male	Diploma	Healthy	Retired
P7	65	Female	High school diploma	Patient	Self-employment
P8	62	Male	Associate diploma	Patient	Retired
P9	64	Male	Diploma	Patient	Retired
P10	65	Male	High school diploma	Patient	Retired
P11	62	Male	High school diploma	Patient	Self-employment
P12	60	Female	Bachelor's	Healthy	Retired
P13	61	Female	Bachelor's	Patient	Retired
P14	64	Male	Bachelor's	Patient	Retired
P15	60	Female	Bachelor's	Patient	Health center employee
P16	64	Female	High school diploma	Patient	Housewife
P17	71	Male	Bachelor's	Patient	Retired
P18	61	Female	Bachelor's	Patient	Retired
P19	65	Male	Associate diploma	Healthy	Retired

Table 2. An example of analysis process

Meaning units	Code	Sub themes	Themes
<i>"After getting retired, most my peers visit each other, and they usually talk about their health problems and different types of illnesses; someone says s/he has a kidney stone and the other says s/he has gallstones! Then I get obsessed and check the internet to see what the causes are and what I should do to avoid them"</i>	Getting curious about the heard information from friends	Curiosity about health information	Accumulating health information
<i>"You get stressed and worried when you don't know anything about your disease. And you wonder if it is something serious. Then you check the internet and realize that it's not a major problem, or it's something common among the elderly, and start to feel relaxed. In addition, sometimes your physician tells you about the name of a strange illness and you start to have butterflies in your stomach! But when you check the internet for that, you understand that it's not something serious. When you are familiar with the type of problem, you feel more relaxed"</i>	Achieve peace of mind after OHIS	Satisfaction with obtaining health information	
<i>"I don't know about the problem or I know a little! Or my knowledge is dispersed, and I don't have enough info about that. I don't know anything it cause and where it takes me. So, I try to collect info to prevent it"</i>	Unaware of some health issues	Lack of adequate information on health issues	

Table 3. Summarizing the main results including: main categories and sub-categories

Main categories	Sub-categories
Being self-reliant	Soteriophobia (fear of dependence on others) Staying active and productive Making better treatment choices
Achieving a healthier life	Valuing healthy lifestyle Having a choice in selecting healthcare provider/services
Seeking reliable sources of health information	Lack of confidence in health care providers To validate the acquired health information
Accumulating health information	Curiosity about health information Satisfaction with obtaining health information Lack of adequate information on health issues

Trustworthiness

This study applied the criteria suggested by Guba and Lincoln (1985) to evaluate the data credibility [19]. Peer debriefing was conducted to improve the quality of the data. Hence, the research team checked the interview data and findings at each step of the study by checking and re-checking the analytical codes, categories and interpretations. Additionally, analytic categories, interpretations, and conclusions were reviewed by the research team members. Moreover, conformability was achieved by keeping notes about the raw data, field notes, and categories. To provide the transferability of the data a detailed description of the inquiry was used.

Ethics

The ethics committee of Tabriz University of Medical Science approved the study protocol. The aim and process of the study was explained to the participants and written informed consent was obtained before the interview. The interviews were recorded anonymously using code numbers.

RESULTS AND DISCUSSION

In total, we extracted four categories and ten sub-categories to illustrate the older adults' motivation for seeking online health information. These categories include being self-reliant, achieving a healthier life, seeking reliable sources of health information, and accumulating health information (Table 3).

Being Self-Reliant

Our participants stated they worried about losing independence as a result of aging. They seek online health information to stay tune to healthy tips in order to avoid depending on others, by adopting a healthy

lifestyle. We grouped participants' motivation for living in a self-reliant manner as following.

Soteriophobia (fear of losing independence). Older adults worry that they may burden their family if they get sick. This concern motivates them to do their best to stay healthy. One of the participants stated "...I search the internet to understand how I can protect myself from diseases and avoid risk factors. This way I won't be bothering them now or a burden in the future." (p. 23).

Staying active and productive. Our participants explained that finding online health information helps with improving their health so that they could remain active and engaged with family and societal activities. This was reflected in the statements of one of the participants as follow:

"... When you get old you don't want your family or society abandon you due to your frailty and health problems. I know that I am welcome to my family activities and could commit to my societal obligations if I stay healthy and active. Nobody likes an ill person around. So, I search the Internet to find out how I can stay healthy and active and be useful" (p. 26).

Making better treatment choices. Older adults seek online health information to achieve and keep their independence, in part by participating in the process of decision making about their care plan. They believe that acquiring health information enables them to interact and communicate with their provider more effectively, which could result in a better outcome. In this regard, one of the participants stated why he seeks health information on the Internet "...I read about my health problem in the internet because I don't wanna blindly accept whatever my physician prescribes. I accept that the physician's diagnosis is important, but this is my body, after all! And I should get involved in my treatment" (p. 25).

Achieving a Healthier Life

In the midst of experiencing a decline in their physical abilities, older adults try to stay as healthy as possible by adopting a healthy lifestyle via seeking and accessing online health information. Sub-themes under this theme included.

Valuing healthy lifestyle. Several participants believed that adopting a healthy lifestyle is vital for healthy and happy aging. It enables them to control or delay many physical problems of aging and avoid a wide range of diseases that could accelerate this process. One of the participants said “...I check the internet to read about a healthy diet for healthy aging. I also check internet to know what diet is good for me to prevent, for example, hypertension and cardiovascular diseases in me” (p. 26).

Having a choice in selecting health care providers/services. For the participants it was important to search, find, and select suitable, trusting providers or clinics. Several participants stated they search internet to find a complementary and alternative therapy for their health issues. One of the participants described “...I go to hospital to receive medication for kidney stone. So, I check the internet to see if there is a better and safer intervention for my problem” (p. 8).

Seeking Reliable Sources of Health Information

This theme refers to older adults' need to achieve credible sources of health information due to having low confidence in their health care providers. They found internet to be a credible source.

Lack of trust in health care providers. A few of the participants questioned their providers' competencies due to their past experiences in receiving wrong diagnosis and treatment. One participant expressed this concern as the following.

“...I don't trust physicians. Once my wife fell and she couldn't walk. Doctor told us that she needed an operation. We visited another physician. He prescribed 15 sessions of physiotherapy. My wife got well after the physiotherapy sessions. So, why the first physician told us that her leg needed an operation?! If he had operated her leg, she wouldn't have been able to walk again.” (p. 1).

Participants who were unhappy with their clinician's level of communication, and those who experienced adverse outcome relied on online platforms to obtain health information; for example, “...I believe that physicians are simply businessmen nowadays! They don't devote enough time to patients and only try to visit more patients. So, s/he never wastes his/her time by explaining to me what “Atelectasis” is, for example! I had to search the internet to read about my illness” (p. 8).

To validate acquired health information. The study participants doubted the accuracy of health information they obtained from family members and friends, therefore, they searched internet for information verification. One of the older adults mentioned “...I usu-

ally get a stomachache and I take herbal medicine for relief. I heard from a family member that a special herbal medicine is good for digestive problem, so I used it. However, when I check the internet I realized that I shouldn't have taken it because it may interact with a medication I am taking. Then I stop” (p. 10).

Moreover, the outdated and insufficient information of media such as the television, radio, print resources, etc. motivated several participants to search internet for updated information. One of the participants mentioned that “...Some medications are new or re-formulated. For example, I can't find information on some pharmaceutical products that were marketed in 2017 in the medical brochures printed in 2016. So, I need to check the internet to read about that specific medicine” (p. 3).

Accumulating Health Information

Participants perceived health information as a necessary requirement. They were regularly trying to learn and expand their information about the needed health topics. This theme was illuminated further through the following three subcategories.

Curiosity about health information. They stated that sometimes they search internet because they watch, hear, or read something on television, radio, or newspapers. Or they hear something from their friends or peers that urge them to use internet and seek more information. One participant noted “...My peers usually talk about their health problems and different types of illnesses; someone says s/he has a kidney stone and the other says s/he has gallstones! Then I get obsessed and check the internet to see what the causes are and what I should do to avoid them” (p. 5).

Satisfaction with obtaining health information. Several participants felt relieved from stress by obtaining online health information. In this regard, one of the participants explained “...I get stressed and worried when I don't know anything about my chronic condition or illness. And I wonder if it is something serious. Then I check the internet and realize that it's not a major problem, or it's something common not to worry about, and start to feel relaxed” (p. 8).

Lack of adequate information on health issues. Participants explained that not knowing much about the nature, causes, and ways of treating, and prognosis of an existing disease motivated them to use internet to obtain health information. One of the older adults mentioned “...I don't know about this problem I have or I know a little! I think because I don't have enough information. I don't know what caused it, how can I prevent its recurrent, what is the best treatment? So, I search internet to find out” (p. 16).

Our study explored older adults' motivation for acquiring online health information. To our knowledge, this is the first in-depth study to explore reasons for seeking online health information in Iranian older

adults. According to our findings, “being self-reliant” was one of the main motivating factors for seeking online health information. The natural process of aging increases the risk of frailty and physical disability [20], which consequently leads to be dependent on others [21]. Losing one’s independence with aging is also depressive for older adults and they dread burdening their family and relatives [21]. Empirical evidence suggest that seeking online health information can increase patients’ knowledge of disease and illness, competence with health decision making, and engagement in treatment strategies, especially for those who live alone and are homebound, this can enhance their independence [22].

Our participants stated that having a healthy lifestyle and feeling happy and well was important for staying independent and active [23]. Older adults, more than ever, want to be conscious about their health condition and act proactively about access to needed health information [24]. According to literature a health-conscious person constantly would be involved in the activities that help better health [25]. Therefore, it seems that older adults obtain online health information to stay healthy, active, and make informed and independent health decisions [21, 26]. Others argue that older adults’ online health seeking behavior is an indication of their sense of responsibility towards their health and valuing their independence [26–28].

We also found that older adults’ distrust in, and lack of communication with health care providers influenced their online health information seeking behavior. They argued that accessing online health information makes them feel empowered in making health care decisions and treatment strategies for themselves. This is similar to the findings of others arguing that older adults obtain online health information to stay active, and make informed health decisions [21, 26], especially those who live alone and are homebound [22]. In other studies, authors reported that online health information seeking behavior was associated with experiencing unfavorable doctor-patient relationship and dissatisfaction with health care providers’ services [28]. Participants who had unsatisfactory interpersonal communication with their providers try to search internet to find needed health information.

Another major motivator for seeking online health information was to “accumulate information.” The study participants tended to use online health information to learn more about their condition and identify their symptoms so that they can have a two-way conversation with their physician, as reported by others [29]. Additionally, Caiata-Zufferey et al. (2010) have reported that people’s intention for obtaining health information is tied to their desire to have meaningful and effective communication with their providers and be conscientious of their health status [28]. On

other hand, Alzougool et al. (2008) reported that some people may not seek health information even if they recognize the need for it, because information may increase their anxiety [7]. The issue which we did not explore in the current study.

Overall, the internet has transformed the way, information is shared and accessed, online health information has inherent shortcomings. For one thing, it is difficult to regulate its production, i.e., controlling the quality of online health information is challenging [30]. Also, consumers of online health information vary in degree to which they are health literate [31], therefore, use of misleading or inaccurate health information can be detrimental to one’s health [32]. Further studies of similar topic should assess how user of online health information evaluate its accuracy and trustworthiness.

Limitation

Our study has several limitations. Our sample is not representative of the Iranian older adults since they were predominantly from Tabriz, Iran. Second, we translated data from Turkish-Azeri to Persian in data transcription and from Persian to English. Therefore, it is possible some meaning was lost in translation. Third, only individuals who signed informed consent participated in the study, therefore, the sample might be biased toward those older adults who were willing to share their perspectives. Fourth, we did not triangulate the results of our study with quantitative approaches.

CONCLUSIONS

Our findings support and extend previous reports on older adult’s use of online health information and offer additional insights on the motivation that drives this behavior. According to our qualitative findings, older adults are willing to use online health information to be self-reliant, to achieve a healthier life, to seek reliable sources of health information, and to accumulate health information. Our findings provide valuable information for health care providers to facilitate older adults’ access to trusting and valid online health information. It further suggests that fact-checking skills of older adults in identifying and accessing credible health information sources should be addressed by future health literacy interventions. Such skill could help the users of online health information to refute myths and misinformation, especially, in the context of critical public health crisis caused by COVID-19 pandemic.

Implications for Practice

Given the older adults’ desire and motivation to seek online health information especially in the COVID-19 era, it is important that health care providers address information seeking behavior of their

patients. This will give the providers an opportunity to clarify misleading and inaccurate information. Providers could also be proactive and recommend legitimate and trustworthy websites for patient use [33].

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COMPLIANCE WITH ETHICAL STANDARDS

Conflict of interests. The authors declare that they have no conflicts of interest.

Statement on the welfare of humans or animals. All applicable international, national, and/or institutional guidelines for the care and use of animals were followed.

AVAILABILITY OF DATA AND MATERIALS

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

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