



Original Article

The model of online health information-seeking behavior among older adults

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Abstract

Introduction: Although age-related changes have caused more and different information needs in the older adults, their participation in online search is low. This study aimed to explore the process of online health information-seeking (OHIS) in the older adults.

Methods: The current qualitative study was conducted through applying a grounded theory approach using Corbin and Strauss method in Tabriz from 2018 to 2019. Adopting a purposive and theoretical sampling method 19 older persons, 2 members of their family, a doctor, a psychologist, 4 gerontologists, and a health education specialist participated in this study. In-depth individual interviews were used as the main method of data collection.

Results: This study indicated that the core phenomenon in the OHIS process was “struggling for healthy survival”. Therefore, older people tried to identify and choose strategies to relying on yourself in taking care of their health. Avoidance of dependence as a contextual factor influenced their choice. Finally, this complex process led to OHIS.

Conclusion: This study provides important insights for healthcare professionals and introduces some strategic implications for improving older people’s access to appropriate health information. The OHIS theory presented in this study is a potentially valuable tool for policymakers to take measures to support older people in their self-care.

Keywords: Information seeking behavior, Digital health, Health information management, Internet, Aged, Grounded theory

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Introduction

As the population ages, many sectors of society are faced with challenges, particularly those who lack the required preparations. The healthcare system is one of the sectors that is under pressure due to the increase in the old population.¹ Older adults have a greater need for healthcare services tailored to their needs due to physical changes and age-related illnesses.^{2,3} Therefore, there is a pressing need to reorient the healthcare system to emphasize healthy and active aging.¹

Taking care of physical, mental and cognitive health is important for healthy aging. Old people should try to develop and maintain their functional ability according to age-related changes.⁴ To achieve that, they need to know more about their health status than before.⁵ In this regard, studies have indicated that older people seek health-related information in order to attain the objective of maintaining their well-being, staying active, and making well-informed and independent decisions regarding their health.⁴

Older adults utilize several sources, including healthcare providers, friends and family members, health professionals, radio and television, as well as the Internet, in order to access the necessary health information.^{6,7} In

recent years, the Internet has emerged as a global trend,⁵ and the preferred source of health information for many old people due to provide ease of access, cost-effectiveness, anonymity, and etc.⁸

According to literatures, the searching for health information online among older adults has the potential to enhance their health consciousness, alleviate anxiety pertaining to health conditions,^{8,9} facilitate informed decision-making regarding personal health, enable access to health-related services,³ foster a sense of empowerment in health management, promote self-care practices, facilitate active participation in health-related decision-making,⁹ facilitate knowledge acquisition regarding diverse treatment alternatives, and promote adherence to treatment protocols.¹⁰

Nevertheless, there is a decline in the utilization of the Internet for seeking health-related information as individuals become older.¹ The older population may encounter challenges in managing their healthcare due to a variety of factors that hinder their preference to seek health information online. These factors include limited access to the Internet, inadequate skills and literacy, low self-efficacy, skepticism towards online information, insufficient e-health literacy, conflicting information,



and web design that is not tailored to their needs.³ Consequently, these issues pose a potential concern in terms of healthcare management for this demographic.⁹

Literatures indicate that several factors, including attitude towards utilizing the Internet for health information search, locus of control, perceived susceptibility, health literacy, self-efficacy, and perceived ease and usefulness, have been identified as predictors of the intention to seek health information.^{3,10,11} Indeed, these studies by their utilization of this theoretical frameworks, have posited that the health information seeking is an individual behavior. Individual-based theories primarily emphasize cognitive factors that influence behavior, assuming that action is logical. These theories tend to overlook other non-cognitive factors that may also impact an individual's behavior.¹² However, according to studies, online health information seeking (OHIS) behavior, particularly among older adults, is a multifaceted and complex behavior influenced by a range of individual, demographic, socioeconomic, institutional and systemic factors (such as income, educational level, rurality/urbanity, religion, social support networks, health status, trust, and the political economy of health and healthcare) and the orientations of health system response.^{1,3,6,10,11} Therefore, the development of a comprehensive conceptual framework that encompasses all features of OHIS behavior is deemed essential and advantageous, particularly within the context of Iran.

In order to comprehend the various reasons and motivations a complicated and multifactorial behavior, it is beneficial to commence by individuals' perspectives. Researchers suggest that to better understand people's health behaviors, in-depth studies that focus on people's perspectives and experiences can be more effective. Furthermore, it is acknowledged that gaining access to individuals' experiences is crucial in order to explore the thought processes behind the development of behaviors.¹³ Studies on OHIS behavior believe that qualitative research has made it possible to learn more about users' search behaviors and to comprehend participants' experiences, internal motivations, thoughts, and feelings—a deeper understanding that is frequently impossible to obtain through quantitative methods.^{14,15} The grounded theory approach seems a suitable qualitative research method for investigating the phenomenon of OHIS behavior in a comprehensive manner. This approach is particularly relevant in the context of exploring areas where limited research has been conducted, as it allows researchers from diverse subject areas to develop and construct theories rather than relying solely on existing ones. Grounded theory is a research methodology employed to acquire knowledge pertaining to a particular subject of investigation, particularly in cases when complete exploration has not been previously conducted, and our understanding within that domain remains constrained.¹³

Hence, given the limited understanding of specific structures and their interrelationships in the context of OHIS behavior, particularly among older adults, as well as the dearth of comprehensive studies employing suitable theoretical frameworks to examine this behavior, the present study employed the qualitative methodology of grounded theory. Therefore, this study aims to explore how OHIS behavior is developed in the older adults by adopting a grounded theory approach.

Material and Methods

Study Design and Participants

This research employed a qualitative methodology, specifically the grounded theory approach to explore the development of OHIS behavior in older persons residing in Tabriz, Iran. A purposive sampling method, then theoretical method was applied to select the participants. Nineteen participants aged 60–75 who seek health information online, two members of their family, one physician, one psychologist, four gerontologists, and one expert in the health education and promotion field engaged in the study (see [Table 1](#) for their socio-demographic characteristics). The inclusion criteria for older adults were having first-hand experiences regarding the study objectives and being able and willing to explain their own experiences. Participation was entirely voluntary, and the participants were provided with a consent form to express their satisfaction with their involvement. Consolidated criteria for reporting qualitative research (COREQ) was used to report this manuscript.¹⁶

Data collection

Data was collected at urban health centers, nursing homes, parks, the homes of the participants, and their workplaces via individual, face-to-face, and in-depth semi-structured interviews. The first author contacted the participants via telephone to verify their interest, assess their eligibility, and carry out interviews. The interview guide was tested to confirm the appropriateness of the questions with two eligible older adults. The questions were designed to be exploratory to allow participants to express their views and experiences during the interviews. Some of the questions included “Why do you seek health information through the Internet?”, “Why did you choose the Internet to search for health information, and “What factors facilitate or inhibit OHIS?”. If the participants were non-older adults, questions such as “Why do you think the older adults use the Internet to search for health information?” were asked. Participants determined the time and place of the interviews. All interviews were audio-recorded for further analysis with the consent of the participants. Each interview lasted 65 minutes on average. The interviews continued until data saturation was achieved. The data collection and analysis were done

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	-	Female	PhD	-	Faculty Member
P10	64	Male	Diploma	Patient	Retired
P11	65	Male	High school diploma	Patient	Retired
P12	62	Male	High school diploma	Patient	Self-employment
P13	60	Female	Bachelor's	Healthy	Retired
P14	61	Female	Bachelor's	Patient	Retired
P15	-	Female	PhD	-	Physician
P16	64	Male	Bachelor's	Patient	Retired
P17	-	Female	PhD	-	Gerontologist
P18	-	Female	Master of Science	-	Older adults' child
P19	-	Female	Bachelor's	-	Older adults' child
P20	-	Female	PhD	-	Gerontologist
P21	60	Female	Bachelor's	Patient	Health center employee
P22	-	Male	PhD	-	Gerontologist
P23	64	Female	High school diploma	Patient	Housewife
P24	-	Male			Gerontologist
P25	-	Male	PhD	-	Psychologist
P26	71	Male	Bachelor's	Patient	Retired
P27	61	Female	Bachelor's	Patient	Retired
P28	65	Male	Associate diploma	Healthy	Retired

from October 2018 to September 2019.

Data analysis

Data analysis was conducted concurrently with data collection, in line with the tenets of Corbin and Strauss's (2008) approach. Transcripts were imported into MAXQDA 11 for data coding. All interview transcripts underwent a process of open or initial coding. The data was analyzed, and disaggregated into meaningful units, and labeled for concept generation. At the same time, the first analysis of data memo writing began and continued throughout the analytical process. As analysis progressed, memos were regularly updated on individual concepts and thereby evolved into memos of greater depth and complexity.

In order to further develop emerging concepts and categories, the researcher constantly asked questions about the data. Concepts that needed further investigation in each interview were developed in the next interview. In fact, these concepts determined who to go to in the

next sampling to be able to explain that concept. The next interview, in addition to providing further insights into these concepts, also yielded new concepts.

By looking closely at what participants described themselves as doing, feeling, and being, we attempted to code data based on underlying psychosocial processes. To this effect, we asked how participants acted in response to different contexts.¹³ In this way, we identified the conditions that shaped the participants' experiences and then elicited different or similar contexts that could give meaning and add diversity to the categories. Finally, researchers identified a core category that incorporates other categories. The relationship between categories constituted substantive theory.

Results

In the current study, we aimed to explore and identify the main concern of the older adults that shapes their approach to OHIS. The data analysis revealed that contextual and environmental factors have the potential

to impact older people’s ability to continue and maintain a healthy life. The participants were concerned about how to adopt strategies in spite of their health-affecting contextual conditions so they may continue living their lives and handle the obstacles in their route to healthy survival. The results of this grounded theory analysis led to the extraction of the theory of the struggling for healthy survival: the application of self-reliance strategies in healthcare. According to this theory, “struggling to healthy survival” plays a key role in the older adult’s OHIS behavior. Older adults are motivated to maintain and continue a healthy life by the contextual concept (category) of avoiding dependence. The participants’ strategy to attaining healthy survival and overcome the problems that hurt their healthy life is the OHIS as the final outcome, which explains the concept of self-reliance in healthcare of this process (Figure 1). These categories are as follows:

Struggling for healthy survival

Even though older people feel that they are nearing the end of their lives and their physical capacities have declined, they still want to be in control of the factors that negatively impact their health and live a life free from disabilities and full of health. They attempt to slow down the aging process and approaching death in an effort to live longer and healthier by searching the Internet, for helpful information. Sub-themes under this core category included.

Trying to live a longer life

The participants’ statements indicate that one strategy to maintain good health and prevent death in old age is to look for information to help find answers that will lead to greater health and, consequently, a longer life.

One of the participants brings up the fact that, as people age, they become increasingly sensitive to their health, and they do whatever possible to extend their lives:

“... We are aged and aware that our time is running out. Our health has become more important to us. We love ourselves. We cherish life. We do whatever it takes to live longer” (Participant 11).

One of the older adults’ children stated:

“...They reach the end of their lives and they want to control their blood sugar, fat, etc. For this reason,

they seek information on the Internet...People do not care about their health when they are young, as they get older, they become more sensitive to their health” (Participant 18).

Establishing and maintaining a healthy lifestyle

Adopting a healthy lifestyle is crucial for seniors, as it can prevent or delay many issues brought on by the inevitable aging process. The information available on the Internet helps them achieve this goal:

“...I search online to learn how to improve my diet to reduce the risk of digestive disorders. Or, for example, I don’t get cancer. I don’t get stomach ulcers.” (Participant 2); *“...The internet has helped us avoid unnecessary drug usage by providing us with information about available alternatives”* (Participant 3).

Access to safer healthcare services

Some of the reasons why older people look for health information to achieve healthy life include seeking and choosing qualified and efficient healthcare professionals, looking for medical facilities that offer high-quality care specific to the health issues of the older adults, and finding less dangerous and non-pharmacological alternative therapies.

Regarding locating a reputable physician, one participant stated:

“...In a city of this size, it can be challenging to locate a qualified medical professional. Rather of seeing multiple doctors and taking multiple medications, everyone wants to find a good one” (Participant 16).

Another participant mentioned alternate herbal remedies, saying:

“...Instead of taking pharmaceutical drugs, I search online to see if there are any herbal remedies for my condition” (Participant 10).

Value of health

The participants experience a shift in priorities as they transition from middle age to old age, placing greater value and importance on their health compared to other personal values. This change is prompted by the experience of disease, weakness, and disability related to aging, which motivates individuals to seek information pertaining to their health actively. In this context, an

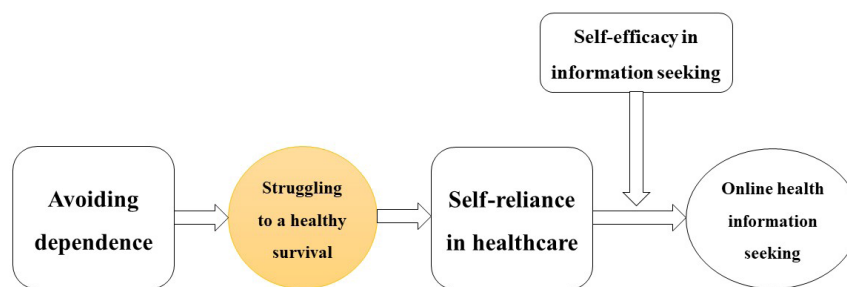


Figure 1. The model of online health information-seeking behavior among older adults

older adult said:

"...Young people are less likely to go to the internet to look for their health and medicines. Because their pain is not as bad as ours. They do not value health as much as we do" (Participant 3).

Avoiding dependence

Remaining independent at this stage of life and carrying out their pre-old age roles is important to older adults. A senior person places a high priority on personal independence, which is what drives them to OHIS. This behavior allows them to avoid the weakness and incapacity that come with old age and deal with consequences like separating themselves from previous social positions and becoming a burden on the lives of their children and those around them. Fear of burdening others and a tendency to continue previous social roles and functions are two sub-themes of avoiding dependence.

Fear of burdening others

Infirmity and weakness owing to diseases and changes of old age, according to the participants, create a terrible feeling of being a burden. Participants' fear of becoming incapacitated and a burden on their loved ones motivates them to take better care of their health; thus, the desire to alleviate this burden motivates the elderly to seek out information that can help them live healthier lives. One of the participants expressed his concerns in the following ways:

"...Many seniors dislike the idea of becoming a burden on others. They make an effort to take care of themselves. They prefer to be self-sufficient and use their skills. For this reason, elderly individuals look up health-related information online in order to avoid becoming a burden" (Participant 12).

Tendency to continue previous roles and social function

Feeling left out of society due to one's age or infirmity is one viewpoint that drives people to the Internet in search of information. This is particularly true for senior citizens who desire to be useful in society and maintain their social participation.

"... the older adults do not like to be excluded from society because of illness or age. They present evidence that they are still capable of performing independent duties and engaging in social activities. For this reason, they search for health information" (Participant 17)

Self-efficacy in information seeking

This component refers to older persons' belief in their ability to carry out their online health information-seeking behavior successfully. This theme has four sub-theme: sufficient technological literacy, confidence in their abilities, and the access to internet connection facilities.

Sufficient technological literacy

Participants identified sufficient e-literacy as one of the determinants that can significantly impact an individual's capacity to regulate OHIS behavior. According to the older adults, computer literacy and internet proficiency are necessary to find the health information they require via the Internet and tackle the perceived barriers. One of the elderly participants said:

"...Those who use smart phones should be comfortable surfing the web in order to find information quickly and easily. Even every day this technology is improving. We should be able to progress with its progress" (Participant 10).

Confidence in their abilities

Participants believe that self-confidence necessary in successfully conducting online searches and using technologies: *"...One should be confident in everything and have a little courage. If I underestimate my ability in using the internet, I definitely can't do it. But if I say that I can do it, then I will."* (Participant 2).

Access to internet connection facilities

The ability to access Internet connection facilities is one of the other factors that increase a person's self-belief in successfully performing OHIS behavior. An older adult said in this regard: *"...One of the most crucial factors in encouraging someone to search for any desired information is having access to a computer, smartphone, and the Internet"* (Participant 10).

Self-reliance in healthcare

This theme refers to solutions taken by the older adults to deal with the obstacles to a healthy survival. Self-reliance in healthcare is the practice which the older adults try to manage one's health and those around independently and by relying on their individual knowledge, skills and capabilities. The following are sub-themes of self-reliance in healthcare:

Willingness to participate in treatment decisions

Older patients want their healthcare providers to listen to and value their input on key healthcare decisions. Therefore, older adults try to equip themselves with the knowledge to voice their opinion at the doctor's office by searching and finding information. One of the participants said:

"...I always check online for indications of a sickness before making an appointment with a doctor. When my throat hurts, for instance, I look up possible causes online. I take the initiative to educate myself on the illness and see the doctor well-prepared. This makes it simple to describe my condition to the doctor." (Participant 10).

Another participant stated:

"...When I go to the doctor, I don't want to sit there

and be treated like an observer, so I do my own search online first. A patient need to be well-informed about his condition so that the doctor's advice is not forced upon him. Some physicians routinely recommend surgery to their patients. An informed patient won't accept the doctor's diagnosis without further investigation." (Participant 1)

Acquiring more health-related knowledge

One of the main solutions for helping the older adults manage diseases that can impair their struggle to survive was to increase the amount of health information available to them. This concept referred to senior citizens' ongoing efforts to study, broaden their knowledge of their own health, and satisfy their keen interest in health-related subjects and conditions. The views of the participants in this regard were presented as follows:

"...I have limited knowledge regarding medication and my illness. With the intention of preventing the condition, I endeavor to acquire relevant information." (Participant 16).

Relying on your ability to obtain health information

When the older adults do not get a proper answer to health problems after referring to information sources such as doctors or other printed media, they feel helpless and dissatisfaction. Therefore, they seek out answers to health issues by depending solely on their own resources and knowledge. Attempting to increase and access health-related information without the help of others is actually a motivator to OHIS among the elderly. A participant expressed his opinion in this regard as follows:

"...In most circumstances, the doctors only worry about generating a profit. No one in our society thinks about other one. You can't wait and hope someone will come up with a solution for you; you'll have to come up with your own." (Participant 8).

Discussion

Our study explored a grounded theory to the clarification OHIS behavior in the older adults. This behavior is influenced by their experiences, perceptions, and lifestyle during this stage of life. An integral part of this behavior is older adult's struggle for a healthy survival. The avoidance of the old people to depend on others stems from their struggle to survive healthy in today's society, and stimulates their self-reliance in healthcare. This compelling them to search for information on their own that will help them survive healthy. As a result, older adults who have a high degree of self-efficacy will tend to choose the Internet while seeking for the health information they require. This is how older adults' OHIS behavior is developed.

Avoiding dependence was a contextual concept in the development of OHIS behavior in older adults. The

aging process naturally raises the elderly's risk of physical incapacity and weakness and increases their dependence on others.¹⁷ However, the elderly tend to maintain their independence in life with aging and not become a burden on others.⁴ For the aged population to remain independent, their health and well-being are crucial.¹⁷ Research in this area suggests that patients who actively seek out health-related information online are better informed about their status and more likely to take an active role in their care and decision-making processes.⁴ Access to health information can increase a person's level of independence, particularly for older adults living alone or with disability.^{4,17} Therefore, in order to preserve their health and avoid dependency on others, older people attempt to OHIS.

The older people in this study want to live a long and healthy life, so they are looking for solutions rely on themselves to take care of their health. Health information seeking behavior can help achieve this goal. As people age, their priorities shift from just wanting to live to caring about living a full, healthy life. As a result, they believe that obtaining accurate information in this area is essential to improving their health and overall quality of life.

Survival and the drive to live are basic instincts and inherent motivators for all living beings. For humans, this existential motivation is influenced by each person's personality and socio-cultural surroundings. This urge is usually not as strong in youth as it is in older people. The urge to live comes when people recognize they are nearing the end of their lives; this occurs more frequently in old age. This yearning is triggered when a person encounters the age-related changes or is diagnosed with a life-threatening disease.¹⁸

Chronic illnesses, infirmities, and other physical issues are frequently associated with aging. Even with age's physical changes and fragility, people in their later years appear to appreciate life and health. In a study of Finnish seniors, one in three older citizens expressed a desire to celebrate turning 100 years old, provided they are in good health during this time. The oldest participants in this survey clearly want to live healthy lives.¹⁹ Another study involving 1,138 Israelis 70 years of age and above revealed that a person's decision to take care of his health during a serious sickness is significantly influenced by his desire to survive.¹⁸

The older adults' struggling to healthy survival is heavily influenced by healthcare. In this regard, the importance of information and communication technology in facilitating access to data regarding health rehabilitation and healthcare cannot be overstated. This technology is particularly advantageous for the elderly due to the fact that the physiological changes linked to aging can progressively result in diminished strength, incapacitation, and even isolation.¹⁷ In this regard, the

experiences of older persons with chronic health disorders have indicated that they feel should take responsibility for their health or the health of others close to them^{4,17} and seek out strategies to health promotion. As a result, health information for the elderly is crucial. The provision of information to the elderly enables them to engage in healthcare decision-making, expand their understanding of their health conditions, effectively managing their own health, and ultimately enhance their overall health.^{15,17}

According to studies, those who have been diagnosed with a medical problem or have multiple chronic conditions are more likely to seek health information online, and those who regularly take prescription drugs after visiting doctors are especially interested in learning about side effects of medications on the Internet^{20,21} in order to manage and improve their health conditions.

Research in this field suggests that people who actively try to maintain or improve their health are more likely to look up relevant information online prior to seeing a doctor, increasing their ability to participate in their health decisions actively.²² The patient's comprehension of their health status and their ability to manage it are both enhanced by health information gained from the Internet prior to and following the doctor's visit.^{20,22} Indeed, according to Kivits, humans have a "healthy self" ideal, and becoming health-aware and actively seeking health information is one method to realize this ideal.²³ People who are aware of, or concerned about their health, are the most likely to search for health-related information online.¹⁵ The Internet has empowered individuals to control over their own health and healthcare and become proactive caregivers of their health.¹⁴ Actually, an individual's knowledge, attitudes, and beliefs regarding particular health behaviors can be influenced by the extent and type of health information they receive.¹⁵ The Internet as a medium has the potential to aid in the promotion of healthy lifestyles and the achievement of the health ideal.¹⁵

Self-efficacy is important to consider because of its influence on individual thoughts, emotions, and actions. Confidence in one's own abilities to accomplish a task or behavior is known as "self-efficacy."³ People with the same set of skills can respond very differently to the same set of circumstances depending on their level of self-efficacy. Thus, self-efficacy is acknowledged as the primary driver of behavior and serves as the basis of intrinsic motivation and achievement among individuals.³ Previous research has also shown a relationship between self-efficacy and OHIS,^{3,11} which is in line with the results of the current study. One of the most critical factors in determining health-related behaviors in the older adults.^{3,24} With a strong belief in their ability to achieve health-related goals, the older adults are able to strengthen their efforts to overcome obstacles and improve their health status.³ As a result, it is expected of older adults with high self-

efficacy to cope with the numerous chronic illnesses they may have and adjust to age-related changes by looking up health-related information online.

Limitations

Several limitations exist in the present investigation. Due to the fact that Turkish was the primary language of the majority of the participants, it was challenging to maintain the details of the content in the translated interviews. Given that human behavior is influenced by the context in which research takes place and all of our participant is of Turkish descent and hails from the city of Tabriz, their language and culture differ from those of other Iranian ethnic groups; thus, our study sample does not represent the geriatric population of Iran as a whole. It is recommended that future research pay particular attention to cultural and ethnic variety in their sampling.

Implications for practice

This study offers valuable insights for healthcare professionals and presents advice for the formulation of initiatives targeted at enhancing the accessibility of relevant health information for older individuals. The grounded theory proposed in this study about the formation of OHIS behavior offers a potentially helpful resource for policymakers seeking to assist elderly individuals in managing their health. Policymakers and health professionals must implement strategies that promote the adoption of OHIS behavior among the senior population since this plays a crucial role in the effective control and management of their health.

Extensive research has been conducted regarding mortality, anxiety, and death phobia. However, research on a desire to live a longer and healthier life has been comparatively limited. This may be attributed to the perception that it is an ordinary human necessity that fails to pique the interest of scholars. As a result, expanding the number of studies examining the desire for healthy life among the elderly may contribute to the body of knowledge concerning this population.

Conclusion

The present study's results offer recent conceptual and practical frameworks for medical practitioners, researchers, and theorists who are interested in investigating the OHIS behavior of elderly individuals. This study is a pioneering investigation into the formation of OHIS behavior among elderly individuals in Iran, utilizing a grounded theory approach. The findings from the data analysis support the proposition that the theory of "struggling for healthy survival: application of self-reliance strategies in healthcare" is an appropriate framework for comprehending and elucidating the OHIS behavior by older adults. The contextual concept of dependency avoidance, which is influenced by the core

category of individuals' struggling for healthy survival through self-reliance in healthcare describes OHIS of older adults. Indeed, certain older individuals were motivated to actively seek health information as a means to manage their health concerns, maintain and improve their well-being, extend their life, avoid becoming dependent on others.

Authors' Contribution

Conceptualization: Sara Pourrazavi.

Data curation: Sara Pourrazavi.

Formal analysis: Sara Pourrazavi.

Funding acquisition: Sara Pourrazavi.

Investigation: Sara Pourrazavi.

Methodology: Sara Pourrazavi, Shahrzad Bazargan-Hejazi.

Project administration: Sara Pourrazavi.

Resources: Sara Pourrazavi.

Software: Sara Pourrazavi.

Supervision: Shahrzad Bazargan-Hejazi.

Writing—original draft: Sara Pourrazavi.

Writing—review & editing: Shahrzad Bazargan-Hejazi.

Competing Interests

Authors declare that they have no competing interests.

Consent for publication

All respondents permitted publication, provided anonymity was ensured.

Ethical Approval

This study was approved by Ethical Committee of Tabriz University of Medical Sciences, Ethical Number: IR.TBZMED.REC.1397.303). Informed consent was obtained from all participants in the study. The study was performed in line with the principles of the Helsinki Declaration.

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