

Studying Health Information Behaviors of People with Cancer

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Abstract

Aims: The purpose of this study is to investigate the health information behavior of people with cancer who referred to Shahid Bahonar Hospital and Jawad Alameh Clinic in Kerman city between 2017 and 2018 years. **Materials and Methods:** Descriptive method was used, and the data were collected through Longo's information behavior questionnaire. To test the research hypotheses, independent *t*-test and one-way ANOVA were used. **Results:** According to the data analysis, 99 (28.3%) respondents were poor, 157 (44.9%) had a moderate level of life, 65 (18.6%) had a good living standard, and 29 (8.3%) had a high level of living. According to the data analysis, 73 (20.9%) respondents were in the village, 188 (53.7%) lived in the small cities, and 89 (25.4%) were resident of the provincial capital city. **Conclusion:** The findings show that younger patients are more likely to seek health information and use information sources such as the Internet, social media, and medical journals. The results also proved that the male patients in comparison to the female patients receive their information more actively. The highly educated patients receive their health information actively and on the Internet. Patients with a high standard of living are actively engaged in the process of finding their health information, and poor and moderate levels of well-being receive their health information through doctors and interpersonal interactions.

Keywords: Information behaviors, information behaviors of people with cancer, information resources, interpersonal interactions

INTRODUCTION

Wilson first used information behaviors in 1983 as a problem-solving model in research. In his global model, he states that information behavior includes both active and inactive search behaviors. This means that practically, actively searching for information (for example, watching TV and getting information about the programs without the previous intention) is a type of information behavior as well as passive attention (without previous intent) and continuous search. Wilson's information behavior model includes the following components: information needs, intervening variables, information behavior, and information processing and use. Information is the infrastructure for all activities in various fields of science as well as among ordinary people.^[1] It can also be used to combat disease; reduce stress, distress, and uncertainty; gain control; and improve self-care.^[2] After World War II and with increasing scientific and technical

knowledge in various fields, the behavior of information was first introduced in a congress in 1948 held by the Royal Society for Scientific Information. This event was the beginning of a new approach to the study of the information behavior of human beings.^[3] The complex patterns of human behavior and interactions while searching any kind of information are known as information behavior.^[4] Information searching is conducted by specific groups for specific purposes. If the search behavior is initiated by patients with the goal of gaining health information, it is considered as a component of decision-making process of health behavior.^[5] Health information behavior is the act of seeking and using the relevant information regarding different diseases, health-threatening factors, and other related health acts.^[6] Many people are

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actively looking for health information,^[7] yet others do this inactively. They accidentally get the information, for instance through viewing television programs or reading newspapers while doing their routine activities. It should be noted that the environmental, physical, and personality characteristics affect seeking health information, and on the other hand, the patient's health information behavior affects active search, passive search, and ultimately his/her health outcomes.^[8] Today, two incidents of a dramatic increase in the use of global health care due to increased nondeveloped diseases such as cancers^[9] and the broad access of people to a variety of medical information from sources other than health-care providers, the need to understand and review the search behavior, and the patient's health information have become necessary.^[6] Despite the variety of available information sources that can be easily used to prevent chronic diseases, many people still lose their lives in the event of such a disease.^[10] In addition, the complications and disabilities caused by such diseases and impose heavy burdens on families, communities, and governments.^[11]

Cancer is one of the most fatal diseases worldwide. More than six million people die from cancer every year. Furthermore, cancer is a disease with a multidimensional effect on life.^[12] Providing adequate information is considered an important factor in reducing the level of anxiety and depression among patients.^[13] Despite the increased concern about information disclosure over the past decades in the health sector, many people with cancer across the world are still unaware of this fact.^[14] Studies done in different countries show that the vast majority of people with cancer try to gain accurate information and to manage their illness.^[15]

Today, emphasis is on the role of an individual as a central factor in health management. Keywords such as patient centering, lifestyle, patient actions, and empowerment, all of which emphasize that the individual plays a more critical role than health-care provider in his health control. The individual must play an informed role in health decision-making process.^[16] Some factors, including drug advances, the production of new drugs, the growth of chronic diseases, the continuous movement toward a client-centered and disease-based system, and access to health information through the Internet are important factors of convergence that have increased the demand for individual participation in decision-making and health management over the past two decades. They have also increased the importance of health literacy.^[17] Health literacy is a key to empowering people. It acts as a tool for addressing health inequalities and improving the knowledge and skills of society members. It has a fundamental role in social health. Its impact on the society can be compared with the impact of age, income, employment status, level of education, and race, which are all strong health factors.^[18] Despite the huge importance of information in different aspects of life, especially among people with cancer, and the role that information plays in the improvement of the disease process, it has been majorly ignored in Iran. The information behaviors of people with cancer have not been taken into account, and

there is an urgent need for research on this issue. The results of this research can be used by people with cancer, treatment centers, cancer treatment clinics, and information centers in order to plan, decide, and make policies for improving the level of information and awareness of patients and, as a result, their better treatment. Rutten *et al.* found that people with higher education receive specific treatment information more likely (odds ratio = 1.21, 1.18–1.25). According to their study results, as age increased, the odds of calls about specific treatment information also increased.^[19,33]

Research objectives

The objective of this study was to investigate the health information behaviors of people with cancer in Kerman city between 2017 and 2018 years.

Research question

1. What is the dominant gender of people with cancer in Kerman?
2. What is the age range of people with cancer in Kerman?
3. What is the education status of people with cancer in Kerman?
4. What is the life welfare of people with cancer in Kerman like?
5. Where are the people with cancer residing, in villages or cities?
6. What are health information behaviors of people with cancer in Kerman?
7. What sources do people with cancer use to meet the information needs associated with their illness?
8. How do patients find and use their information?

MATERIALS AND METHODS

This is applied from an aim point of view and descriptive research. The data were collected through a questionnaire; for collecting data, a survey with a random sample of people with cancer was used. Then, the data were analyzed. Longo questionnaire has been used to investigate the information behaviors of people with cancer in Kerman as a standard questionnaire. The questionnaire was also used by Farashbandi and Longo.^[8,19] This questionnaire was designed by Longo based on Wilson's information behavior model. The statistical population of the present study includes the people with cancer in Shahid Bahonar Hospital and Jawad Alameh Clinic in Kerman during the 1396–1397 years. Using a Morgan table and a possible drop, a sample size of 400 people was drawn from 3,000 people with cancer treated with medical records. Three hundred and fifty respondents answered the questionnaire thoroughly. Simple random sampling was used. Hence, the individuals were selected randomly from the people with cancer. The questionnaires were provided to patients and their companions in the presence of the researcher and the oncologist. The researcher answered the questions on behalf of the people with cancer who were not in proper mental condition and unable to respond. In three cases that the people with cancer were

unable to respond, their families answered the questionnaires with the presence of the researcher. The data were collected during 3 weeks as the people with cancer referred to the hospitals. A Likert-based 5-point questionnaire, completely disagree (1), very low agree (2), low agree (3), high agree (4), and completely agree (5), were used to evaluate the questions, and Grades 1–5 were assigned to the answers. Score 1 indicates completely disagree question and Score 5 indicates completely agree. Opinions were compared with the theoretical mean (3.00). If the criterion score is higher than the theoretical value (3.00), it can be said that the criterion is effective in the amount of use. According to the responses received, the answers to all the questions were on a proper and quite distinct scale; therefore, content validity and construct validity were confirmed. The reliability of the questionnaire was calculated and confirmed using Cronbach's alpha of 0.7. The data were analyzed by SPSS version 23 software (SPSS for Windows Inc., Chicago, Illinois). The significance level was considered to be 0.05.

RESULTS

According to data analysis, 131 (37.4%) respondents were male and 219 (62.6%) were female. One hundred and fifty-seven (44.9%) respondents were in the age group of 30–40 years old, 130 (37.1%) were 51–50 years old, and 63 (18.0%) were 51–66 years old. According to the data analysis, 68 (19.4%) respondents' education was below diploma, 71 (20.3%) had diplomas, 117 (16.9%) had BSc, 59 (16.9%) had Msc, and 35 (10%) had PhD. According to the data analysis, 99 (28.3%) respondents were poor, 157 (44.9%) had a moderate level of life, 65 (18.6%) had a good living standard, and 29 (8.3%) had a high level of living. According to the data analysis, 73 (20.9%) respondents were in the village, 188 (53.7%) lived in the small cities, and 89 (25.4%) were resident of the provincial capital city.

The first research objective: What is the status of information seeking among people with cancer?

The findings in Table 1 at the end of the file show that among the dimensions of the information-seeking behavior of people with cancer, active receiving of information has the highest mean and the use of information on the people with cancer has the lowest mean.

What sources do people with cancer use to meet the information needs associated with their illness?

According to Table 2 at the end of the file, it can be stated that the most frequent use of information resources, respectively, belonged to library sources, medical journals, and newspapers. The lowest mean belonged to the use of radio, television, and social media sources (such as Telegram, WhatsApp, and Instagram).

How do people with cancer search find and use their information?

The findings of Table 3 at the end of the file, show that people with cancer primarily use traditional media such as radio

Table 1: Descriptive statistics of health information-seeking behaviors of people with cancer

Behavior	Gender	Frequency	Mean	t	P
Information searching	Female	131	3.40	3.918	0.001
	Male	219	2.86		
Information-seeking understanding	Female	131	3.21	3.164	0.002
	Male	219	2.91		
Interpersonal interactions in information seeking	Female	131	2.88	-1.99	0.047
	Male	219	3.05		
Information sources	Female	131	2.94	2.125	0.034
	Male	219	2.84		
Information uses for curing	Female	131	2.83	-1.144	0.253
	Male	219	2.89		
Search, find, and use information actively	Female	131	3.34	3.065	0.002
	Male	219	3.17		
Search, find, and use information inactively	Female	131	3.22	2.159	0.032
	Male	219	3.06		

Table 2: People with cancer information sources

Information sources	Frequency	Mean	SD
Doctor	350	2.59	0.95
Nurse	350	2.73	1.05
Charity associations for people with cancer	350	3.05	0.93
People with cancer families	350	3.21	1.01
People with cancer friends	350	2.75	1.10
People with cancer partners	350	3.25	1.15
The other people with cancer	350	3.28	1.20
Book	350	2.82	0.97
Pamphlets and brochures and posters	350	3.03	1.14
Magazines	350	3.16	1.19
Medical journals	350	3.45	1.16
Websites	350	2.87	1.12
Libraries	350	3.77	1.20
Newspapers	350	3.45	1.25
Telephones lines	350	3.31	1.30
Medical librarian	350	2.27	1.31
Radio	350	1.86	0.98
Television	350	2.11	0.88
The satellite	350	2.34	0.89
Social networks	350	2.16	0.85
News	350	2.90	1.19

SD: Standard deviation

and television, with a mean of 3.76, and then, they gather information through communication with other people (3.31) and other media (3.54). New media such as the Internet and social networks are less likely used to search for information in comparison to the other media. In the case of receiving information, the findings in Table 3 show that patients actively gain information, respectively, through relationship with others, such as friends and colleagues (3.56), traditional media (3.47), and other media (3.66) and new media (3.22). Regarding the use of information, the findings in the table below show that patients received information from the media, respectively, through

Table 3: Kind of cancer patient health information behavior

Health information behavior kind	Information media	Frequency	Mean	SD
Searching information actively	Traditional media such as TV and radio	350	3.76	1.25
	New media like social network such as Telegram, Instagram, and WhatsApp	350	2.52	1.39
	Interpersonal interaction	350	3.21	1.36
	The other media	350	3.54	1.30
Searching information inactively	Traditional media such as TV and radio	350	3.47	1.42
	New media like social network such as Telegram, Instagram, WhatsApp	350	3.39	1.40
	Interpersonal interaction	350	3.67	1.27
	The other media	350	3.68	1.22
Retrieving information actively	Traditional media such as TV and radio	350	3.47	1.29
	New media like social network such as Telegram, Instagram, and WhatsApp	350	3.22	1.36
	Interpersonal interaction	350	3.56	1.21
	The other media	350	3.66	1.18
Retrieving information inactively	Traditional media such as TV and radio	350	3.13	1.23
	New media like social network such as Telegram, Instagram, and WhatsApp	350	2.97	1.14
	Interpersonal interaction	350	3.13	1.23
	The other media	350	2.91	1.16
Using information actively	Traditional media such as TV and radio	350	2.79	1.26
	New media like social network such as Telegram, Instagram, and WhatsApp	350	2.81	1.14
	Interpersonal interaction	350	2.56	1.28
	The other media	350	2.86	1.24
Using information inactively	Traditional media such as TV and radio	350	2.62	1.27
	New media like social network such as Telegram, Instagram, and WhatsApp	350	2.88	1.31
	Interpersonal interaction	350	3.26	1.11
	The other media	350	3.49	1.13

SD: Standard deviation

relationship with others (mean 2.56), other media (2.85), new media (2.81), and traditional media (2.79).

DISCUSSION

The findings of this study showed that the majority of the respondents were female; their age range was between 30 and 40 years, and they had a bachelor's degree, and their living standards were moderate. The results of this study are in line with the findings of Brokalaki *et al.* which showed that women with academic education, compared to men who had elementary education, had a higher level of knowledge about the disease diagnosis. The patients who are young have more awareness of the diagnosis of illness and are more likely to seek information.^[20] This can be because of the more access of younger generation to diverse information on social media information communication technologies. The educated people with cancer wanted to increase their information about the disease. Most of the people with cancer who were aware of their disease sought accurate information about the severity of the disease and its prognosis. This is not in line with the findings of Jaafar *et al.* who found that patient health behaviors affect their information behavior, and its impact is stronger among women. Those who were younger were more likely to seek information actively.^[21] This does not agree either with the findings of Jung *et al.* who identified social factors such as socioeconomic status and race/ethnicity with health inequalities as a result of differences

in the access, processing, and use of cancer information.^[22] Low level of education and income reduces the chance of surviving cancer. It may be because people with cancer who have and moderate quality of life due to lack of access to information resources and information technologies have low health literacy. Johnson found that patients who have better social and economic status have a significantly higher level of information in comparison to those who did not have a good socioeconomic status. Such a gap should be filled to improve the quality of life and treatment of patients.^[23] Lashkarizadeh *et al.* found that almost all patients were interested to be aware of the prognosis of the disease and the complications of the treatment, and men were more interested in knowing the diagnosis of the disease compared to women.^[24] This may be because women pay close attention to details. The findings in Table 1 show that according to the empirical means, people with cancer actively try to receive information and for using information sources and information they have the least effort. The results of this study are in line with the findings of Quinn, Bond, and Nugent who found that patients with great health literacy skills can use more effective online search strategies to identify high-quality information sources.^[25] The findings of this research also agree with Inglehart who found that patients use the Internet and physicians as sources; they trust more in physicians as the true source of information.^[26] In the same way, the results of Cao, Zhang, Xu, and Wang showed that access to information and credibility of information on the Internet and websites is important to minimize potential damage.^[27]

Majidi, Mahdavi, and Siamian stated that the most accessible method for accessing disease information is the Internet, and most of the patients received the necessary information from the Internet and the new media. Television and radio were the minimum sources of information, and most of the people needed information to prevent the onset of the disease.^[28]

The findings in Table 2 show that the people with cancer most often used information sources including library sources, medical journals, and newspaper, respectively. Their lowest usage was the use of radio, television, and social media (such as Telegram, WhatsApp, and Instagram). These results are supported by Kimiafar who stated that the quality of information provided for patients can improve the disease treatment.^[29] The most popular sources of information for patients were physicians, TVs, health channels, and other people with cancer. Reasons for people with cancer to use information resources can include a better understanding of the disease, less anxiety, curiosity to learn more about the disease in succession, and management of disease and nutritional options during the treatment. Xiao, Sharman, Rao, and Upadhyaya found that benefits of using online health information involve cost decrease, privacy protection, reducing embarrassment, retrieving information efficiently and effectively, and the ability to adapt information to meet the needs of a person, which are all in line with this research.^[30] The results of this study showed that seeking online health information could improve health-care outcomes by reducing differences and encouraging people with cancer to work actively with physicians. The results of Oh *et al.* who predicted the likelihood of using the Internet by taking into account age, education, and health literacy. Low-income and low-educated people more often use journals and newspapers to obtain health information, which is consistent with this study.^[31] The most trusted source among the respondents was physicians and other health-care professionals. This is consistent with the results of Jacobs *et al.* who found that one-third of Americans use the Internet to get health Information.^[32]

CONCLUSION

The findings of this study suggest that the majority of people with cancer in Kerman are women with 30–40 years of age with a bachelor's degree and a living standard living in Kerman-dependent cities. We also found that the most resources that people with cancer access, search, retrieve, and use are the library resources, medical journals, and newspapers. The lowest mean use of information resources was for radio, television, and social networks (such as Telegram, WhatsApp, and Instagram). In terms of how to search, retrieve, and use information, we conclude that the people with cancer are not very active in the mentioned criteria. Even those who are active get their information through other people, such as friends and colleagues, traditional media, and other media, and they least often search for information in new media like social networks. Among the three variables of receiving, searching, and using, they act passively in using the people with cancer' information.

Clinical implications

Since most of the people with cancer in this research took their health information from the doctor through interpersonal interactions, So, for reducing the anxiety of the people with cancer, it is necessary to provide a brochure for nutritional information, disease control information, psychological Information, disease management, and treatment steps. Medical information science professionals provide a guide for searching and retrieving information needs of people with cancer, holding justification classes for patients to manage their cancer disease, and establishing a treatment committee for treating cancer in such a way that an oncologist, nutritionist, psychologist, information scientist or librarian, and therapist work together to treat the patient in order to raise different awareness among patients. The responsible author of this article as a person who had the experience of breast cancer Grade 3, by managing nutrition, mental aspects, be awareness of finding cancer information needs, did not suffer from side effects of chemotherapy and her treatment was done normally. Hence, it is recommended to imply the above ways in all cancer clinics as a treatment committee

Applied recommendations

It is recommended that:

1. Since most rural and older people with cancer receive health information from their physicians through interpersonal interaction, brochures on nutrition information, disease control, disease management, and treatment steps, cancer patients were given relief to reduce their anxiety
2. Medical librarians can provide more information to people with cancer and their families
3. Holding educational classes for patients to improve their health literacy
4. Treat people with cancer in a team so that oncologists, nutritionists, psychologists, and occupational therapists work together to raise awareness of patients in various fields.

Research recommendations

It is recommended to study more in the following cases:

1. Nutrition health information behavior and information-seeking behavior of people with cancer and other diseases such as diabetes, blood pressure, and other diseases
2. People with cancer self-management and awareness study among people with cancer and other diseases such as diabetes, blood pressure, and other diseases.

Study limitations

The limitations of this study include the following:

- (1) People with cancer think that an oncologist will provide all their information needs for treatment within a short period of time. While, the patient has different information needs for treatment, including nutrition field information, ways to reduce the side effects of chemotherapy, psychological effects, oral health, and other dimensions. Patients in these

cases are not aware and do not know where to go to get this information. (2) Due to the uncertainty of the centers for informing patients and the lack of place and in the treatment system for this purpose, in this field of research, much study has not been done and the results of studies are not taken seriously; (3) the information gathering and the use of people with cancer experiences because of their physical conditions are difficult. (4) Researchers who involved with cancer do not study on cancer field and they give less of their experiences to others. Hence, doing this study is important and necessary.

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Conflicts of interest

There are no conflicts of interest.

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