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Prediction of health information-seeking behavior components based on health anxiety among users of public libraries

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Abstract:

INTRODUCTION: This study aimed to predict health information-seeking behavior (HISB) components based on health anxiety among users of public libraries.

MATERIALS AND METHODS: This research was a descriptive-correlational study. The statistical population consisted of users of public libraries. Data collection tools included the HISB questionnaire and the Short Form of Health Anxiety Inventory (SHA1).

RESULTS: The results indicated that health anxiety was a significant predictor of the components of HISB. The illness likelihood had a direct relationship with the components of the need for health information and the purposefulness of health information seeking, and it was inversely related to barriers to obtaining health information. In addition, the preoccupation with illness was directly related to the components of the need for health information, the diversity of health information sources, the time of referring to health information sources, the purposefulness of health information seeking, and evaluation of reasons for referring to the library.

CONCLUSION: Among the components of health anxiety, preoccupation to the disease has the highest role in the emergence of users' information-seeking behavior.

Keywords:

Health anxiety, health information-seeking behavior, Isfahan, public libraries, users

Introduction

With the increasing literacy level in societies, humans have become interested in receiving information from various areas. Health information is a type of information that has always been the focus of attention directly affecting the quality of life (QOL).^[1] In addition to providing information on symptoms, diagnosis, and treatment of illnesses, it provides awareness of health promotion, disease prevention, and access to health-care systems.^[2] Moreover, consideration of issues such as access to health information, focus on self-care and self-management, lack of providing

necessary information services (such as lack of adequate explanation on how to use drugs, and drug interactions with pharmacies), the importance of prevention from diseases, increasing specific illnesses, and limited time of the health-care professionals for patients has led to the increased focus on health information-seeking area to meet the health information needs.^[3-6]

In other words, consideration of meeting the health information needs leads to the formation of health information-seeking behavior (HISB), which describes how to search, find, and use information related to diseases, all health-threatening factors, and activities associated with health promotion

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by an individual,^[7] and it has been affected by a variety of factors including sociocultural and individual factors such as age, gender, race, education level, income, information literacy, health literacy, and health status of patients at different stages of the disease.^[8] Furthermore, given the important role of physical health in individuals' lives, it is reasonable for individuals to have their health concerns and feel the need for health information.^[9] These concerns regarding health are called health anxiety; therefore, health anxiety is one of the important and effective factors in seeking health information^[10] due to motivating people to seek health information. Health anxiety is, in fact, the persistent health concerns or fears of a serious illness and excessive worries at the time of the emergence of an illness and the problem based on the misinterpretation of physical signs and symptoms^[11,12] which can be effective in decreasing or improving the QOL.^[9] In other words, health anxiety is a continuum of mild and intermittent-to-excessive concerns known as the hypochondriasis.^[13]

Regarding a cognitive-behavioral viewpoint, an increase in health anxiety is expected to lead to an increase in seeking health information, which in turn increases health anxiety.^[14,15] In addition, the results of some studies indicate that individuals suffering from health anxiety are more likely to seek health information compared to others, and they make self-confidence using medical resources.^[15-17] However, the impact of information seeking and health anxiety on each other is still unclear.^[14] Moreover, despite the increasing number of health information seekers, their psychological characteristics have rarely been identified, and studies have mainly focused on sociodemographic factors of health information seeking and users' expectations or health status. Besides, considering that people with high levels of health anxiety are significantly more likely to benefit from health care in comparison to those with low levels of health anxiety, sufficient investigations have not been carried out to predict predisposing factors which lead people to seek health information.^[16,18]

In this regard, in a study, Singh and Brown found that individuals with high health anxiety are significantly more likely to seek information.^[19] Furthermore, Muse *et al.* and te Poel *et al.* revealed that people with a higher level of health anxiety seek health information more often^[15,20] and use diverse health information sources.^[20] Tanis *et al.* also found that health anxiety has a positive relationship with online health information seeking, and individuals with health anxiety are more likely to seek health information and are also less satisfied with receiving specialized care and consulting with a doctor.^[21] Moreover, Mathes *et al.* found that health anxiety and reliable frequent searches were significantly associated with physical and mental health.^[22]

In general, due to the records found abroad and lack of domestic studies in this regard, it can be said that in studies performed abroad, the relationship between these two variables (the HISB and health anxiety) and online health information seeking has been investigated more, and less attention has been paid to the prediction of HISB based on health anxiety. In internal researches, these two variables have not been studied together. Accordingly, in addition to considering online seeking and the type of seeking in the current study, other issues such as the need for health information, the diversity of health information sources, the time of referring to health information sources, purposefulness of health information seeking, the evaluation of reasons for referring to the library, barriers to obtaining health information, and validity of the health information sources as components of information-seeking behavior have been examined, and prediction of each of these components has been addressed based on health anxiety. In Iran, because the public libraries are considered one of the important centers for obtaining health information, this study has been examined from the point of view of clients referring to the public libraries. Therefore, the present study was conducted with the aim of predicting the components of HISB based on health anxiety among users of public libraries in Isfahan, Iran, in 2018, and the role, contribution, and prediction potential of health anxiety in HISB components have been evaluated. Identification of the relationship between health anxiety and the HISB among users of public libraries and helping planners and medical librarians to pay attention to these factors in planning and decision-making can be made from the results of this study.

Materials and Methods

The current research was a descriptive-correlational study. The statistical population included 6657 users over 18 years of age in public libraries affiliated to the General Directorate of Public Libraries in Isfahan city, Iran (12 libraries); a library was removed from the statistical population due to the displacement of the library building and its closure at the time of performing the study, and the total number of users over 18 years of age was calculated in the remaining 11 libraries (Ibne Meskawayh, Tohid, Isfahan House, Hojjat, Shahid Beheshti, Rehnan, Allameh Naeni, Valiye Asr, Saeb, Shahid Mofatteh, and Ershad). In addition to the aforementioned characteristics, the users' willingness to participate in the study was considered as the inclusion criterion, and the unwillingness to participate in the study and lack of completion or defect in completing the questionnaire were considered as the study exclusion criteria. The sample size was obtained using the Yamane formula as 377 people. The sampling method was of stratified random sampling. This sampling method was

used for selecting the libraries so that each geographical region of Isfahan City (north, south, east, west, and center) was considered a class, and a library was randomly selected from each region. Finally, five libraries were selected randomly from five regions in Isfahan. Two regions (east and south) each had one library, and they were included. The share of each library was obtained in accordance with the number of users in each library. The selected libraries and the number of samples of each of them were as follows: Ibne Meskawayh library from the center of Isfahan, Tohid library from the south of Isfahan, Isfahan House library from the north of Isfahan, Shahid Beheshti library from the east of Isfahan, and Saeb library from the west of Isfahan with 145, 64, 26, 40, and 102 samples, respectively.

The data collection tools included a researcher-made HISB questionnaire and the Short Health Anxiety Inventory (SHAI). The basis of the researcher-made HISB questionnaire was the questionnaires used in previous studies^[2,5,20,23-25] with 15 questions and 8 dimensions, which included the need for health information (questions 1–3), the type of health information seeking (questions 4 and 5), the source of health information (questions 6 and 7), the time of referring to health information sources (questions 8–11), the purpose of health information seeking (question 12), the evaluation of reasons for referring to the library (question 13), barriers to obtaining health information (question 14), and the validity of the health information sources (question 15). The measurement scale of questions 1–14 was based on the Likert scale from 4 to 0 and that of question 15 was based on the Likert scale from 3 to 0. Scoring questions of 1–3, 13, and 14 was from very high (4) to very low (0), questions 4–12 from always (4) to never (0), and question 15 from very useful and accurate (3) to unusable (0). Validity of the researcher-made HISB questionnaire was verified by the library and medical information experts, and its reliability was calculated by Cronbach's alpha as 0.87. In order to measure the reliability of the questionnaire, in a pilot study, 38 users of public libraries were randomly selected based on the inclusion criterion, and they filled in the HISB questionnaire completely in the presence of the researcher. Reliability of the questionnaire was measured by the SPSS software (version 20, IBM Corporation, Armonk, NY, USA).

In addition, the Short Health Anxiety Inventory (SHAI) questionnaire was used in the health anxiety measurement part.^[26,27] The SHAI is an 18-item self-assessment scale with four options for each question. Expressions of this test are related to worry about health, awareness of bodily sensations or changes, and the feared consequences of having an illness.^[28,29] Based on the study by Panahi *et al.* on examining the psychometric characteristics of the Persian version of this tool in a

nonclinical Iranian individual, the results showed that the Persian version of the SHAI is conceptualized in three dimensions.^[26] In fact, this scale consists of three dimensions of the illness likelihood (questions 2, 4, 6, 8, 9, 11, and 12), negative consequences of illness (questions 15–18), and preoccupation with illness (questions 1, 3, 5, 7, 10, 13, and 14).^[26,29] To score options, a score between 0 and 3 was considered for each question.^[28,29] In a study conducted by Salkovskis and Warwick (2002), the re-test reliability, the Cronbach's alpha coefficient, and the validity of this questionnaire were 0.90, 0.70–0.82, and 0.72, respectively.^[30] In the study by Panahi *et al.*, using the Cronbach's alpha, the internal consistency for the whole questionnaire and its three subscales of illness likelihood, negative consequences of illness, and preoccupation with illness was 0.81, 0.73, 0.77, and 0.66, respectively. According to Panahi *et al.* a scale is acceptable when the average internal correlation of its terms varies between 0.20 and 0.40.^[26] In the study by Panahi *et al.*, the mean correlation for the terms of preoccupation with illness subscale was 0.22. Based on this finding, it can be claimed that this subscale has an acceptable reliability. In addition, their findings showed an acceptable validity of the Persian version of the SHAI and its subscales among the nonclinical Iranian population.^[26] In this study, the main variables are HISB and health anxiety.

The data collection method consisted of personal referral to each of the public libraries, and the time of data collection was from January 2018 to April 2018. The questionnaires were completed in the presence of the researcher, and the time to complete the two questionnaires was approximately about 20 min. The descriptive statistics (including frequency, percentage, mean, and standard deviation [SD]) and inferential statistics (Pearson's correlation coefficient for measuring the relation between two continuous variables and the multiple step-wise regression to predict the criterion variables that included health information-seeking components based on the predictor variable of the health anxiety in the present study) were used, and the data were analyzed in the SPSS software (version 20, IBM Corporation, Armonk, NY, USA).

Results

The return rate for the questionnaire was 100%. Women and men accounted for 69.2% and 30.8% of the study population, respectively; moreover, 48.0% and 52.0% of the study population were married and single, respectively. The age range of the participants in the study was 18–78 years, with an average of 34.2 years and an SD of 13.2 years. Most of the participants (35.3%) had a diploma and the least of them had a PhD (1.3%). Furthermore, the maximum and minimum rates of

attendance were related to the university students and school students at 25.2% and 2.7%, respectively.

Table 1 demonstrates the Pearson's correlation coefficient between the total health anxiety score and its components with the score of the HISB components among users. The findings revealed that the total score of the users' health anxiety had a direct relationship with the scores of the need for health information ($P < 0.001$), the diversity of health information sources ($P = 0.030$), and the purposefulness of health information seeking ($P < 0.001$), and it was inversely related to the barriers to obtaining health information ($P < 0.001$). In addition, the illness likelihood had a direct relationship with the scores of the need for health information ($P < 0.001$) and the purposefulness of health information seeking ($P = 0.010$), and it was inversely related to barriers to obtaining health information ($P = 0.001$). Moreover, the negative consequences of illness had an inverse relationship with the score of the validity of the health information

sources ($P = 0.030$) and barriers to obtaining health information ($P = 0.001$); in addition, the preoccupation with illness was directly related to the scores of the need for health information ($P < 0.001$), the diversity of health information sources ($P < 0.001$), the time of referring to health information sources ($P < 0.001$), the purposefulness of health information seeking ($P < 0.001$), and evaluation of reasons for referring to the library ($P = 0.04$).

Table 2 summarizes the results of linear regression for predicting the score of the HISB components based on health anxiety among users. The linear regression results, in relation to the prediction of the need for health information, the diversity of health information sources, the purposefulness of health information seeking, and barriers to obtaining health information based on the users' health anxiety, yielded the correlation coefficient between the total health anxiety score and the scores of the need for health information, the diversity of health information sources, the purposefulness of

Table 1: Pearson's correlation coefficients between total health anxiety score and its components with the score of components of health information-seeking behavior among users of public libraries in Isfahan, Iran

HISB components	Total health anxiety score		Illness likelihood		Negative consequences of illness		Preoccupation with illness	
	<i>r</i>	<i>P</i>	<i>r</i>	<i>P</i>	<i>r</i>	<i>P</i>	<i>r</i>	<i>P</i>
Need for health information	0.297	<0.001	0.223	<0.001	0.092	0.080	0.361	<0.001
Type of health information seeking	0.054	0.300	0.042	0.420	0.042	0.410	0.047	0.370
Diversity of health information sources	0.113	0.030	0.033	0.530	0.001	0.980	0.213	<0.001
Time of referring to health information sources	0.095	0.070	-0.017	0.740	-0.027	0.600	0.241	<0.001
Purposefulness of health information seeking	0.202	<0.001	0.113	0.010	0.021	0.690	0.293	<0.001
Evaluation of reasons for referring to the library	0.043	0.400	-0.013	0.790	0.006	0.900	0.105	0.040
Barriers to obtaining health information	-0.179	<0.001	-0.174	0.001	-0.170	0.001	-0.098	0.060
Validity of the health information sources	0.002	<0.970	0.001	0.990	-0.113	0.030	0.083	0.110

HISB=Health information-seeking behavior

Table 2: Linear regression results to predict the components of health information-seeking behavior based on health anxiety among users of public libraries in Isfahan, Iran

Components	Index variable	Nonstandardized coefficient variables		Standardized coefficients β	t-test	Significance level
		<i>B</i>	SE			
Need for health information	Fixed	49.47	1.98		24.91	<0.0001
	Health anxiety	0.63	0.10	0.29	6.02	<0.0001
Type of health information seeking	Fixed	59.67	2.46		24.26	<0.0001
	Health anxiety	0.13	0.13	0.05	1.04	0.2900
Diversity of health information sources	Fixed	42.66	1.47		28.94	<0.0001
	Health anxiety	0.17	0.07	0.11	2.21	0.0200
Time of referring to health information sources	Fixed	54.58	2.21		24.60	0.0001
	Health anxiety	0.21	0.11	0.09	1.84	0.0600
Purposefulness of health information seeking	Fixed	53.99	2.47		21.82	<0.0001
	Health anxiety	0.52	0.13	0.200	3.99	<0.0001
Evaluation of reasons for referring to the library	Fixed	46.20	3.21		14.38	<0.0001
	Health anxiety	0.14	0.16	0.040	0.83	0.4000
Barriers to obtaining health information	Fixed	65.78	2.34		28.07	<0.0001
	Health anxiety	-0.43	0.12	-0.170	3.51	<0.0001
Validity of the health information sources	Fixed	47.93	1.63		29.24	<0.0001
	Health anxiety	0.003	0.080	0.002	0.036	0.9700

SE=Standard error

health information seeking, and barriers to obtaining health information as 0.29 ($P < 0.001$), 0.11 ($P = 0.020$), 0.20 ($P < 0.0001$), and 0.17 ($P < 0.0001$), respectively, indicating that health anxiety scores significantly predicted the need for health information, the diversity of health information sources, purposefulness of health information seeking, and barriers to obtaining health information.

Moreover, the results of linear regression in relation to the prediction of the type of health information seeking, the time of referring to health information sources, the evaluation of reasons for referring to the library, and the validity of the health information sources based on the users' health anxiety revealed that taking into account the correlation coefficient between the total health anxiety score and the scores of the HISB components such as the type of health information seeking, the time of referring to health information sources, the evaluation of reasons for referring to the library, and the validity of the health information sources, the health anxiety score was not a significant predictor of the HISB components (the type of health information seeking, the time of referring to health information sources, the evaluation of reasons for referring to the library, and the validity of the health information sources).

Discussion

The findings indicated that health anxiety was directly related to the components of the need for health information, the diversity of health information sources, and the purposefulness of health information seeking, and it had an inverse relationship with the barriers to obtaining health information, but no significant relationship with other components of HISB such as the type of health information seeking, the time of referring to health information sources, the evaluation of reasons for referring to the library, and the validity of the health information sources. The findings of this study were consistent with the studies by Fergus and Dolan,^[31] Eastin and Guinsler,^[16] Baumgartner and Hartmann,^[18] Tanis *et al.*,^[21] te Poel *et al.*,^[15] Singh and Brown,^[19] White and Horvitz,^[32] Kim and Lee,^[33] Fink *et al.*,^[34] and Doherty-Torstrick *et al.*^[35] on the direct relationship between health anxiety and the need for health information, the frequency and rate of health information seeking, and the use of primary care. Moreover, the findings of the current study were in agreement with the studies conducted by Lagoe and Atkin^[10] and Muse *et al.*^[20] on the direct relationship between health anxiety and the use of various health information sources in addition to consistency regarding the direct relationship between health anxiety and the need for health information and the level of health information seeking. Furthermore, the findings of the

present study, in addition to the consistency on the direct relationship between health anxiety and the need for health information, were along with the investigations by Singh and Brown^[13] and Hadjistavropoulos *et al.*^[36] about the direct correlation between health anxiety and the purposefulness of health information seeking as well as lack of a relationship between health anxiety and the validity of the health information sources. On the other hand, the findings of the current study were inconsistent with the study by Baumgartner and Hartmann^[18] regarding the existence of a significant and direct relationship between source validity and health anxiety. This inconsistency can be explained in terms of three viewpoints namely different characteristics of the statistical population of the study, different time and place of accomplishment of the study and measurement instruments, and review of the only online search in the study by Baumgartner and Hartmann.^[18] Therefore, such differences are possible.

Some studies showed that as the individuals' health anxiety increases, they feel higher need for health information and seek it more in order to cope with stress and worries, reduce uncertainty and gain confidence about health concerns, neutralize health anxiety, and try to prevent the onset or spread of illnesses and complications.^[12,13,37] In addition, individuals with high levels of health anxiety are exposed to disturbing and confusing information; hence, they use a variety of health information sources to find a sense of tranquility and confidence.^[20] Moreover, it can be claimed that in order to better understand their health; interact with the doctor; learn more about diseases, treatments, and medications prescribed; and decide on referral to a doctor,^[12] people with high health anxiety perform seeking more purposefully and seek for health information such as symptoms associated with illnesses, different treatment strategies, drug prescription, and awareness of nutrition-related issues. Regarding the inverse relationship between health anxiety and component of barriers to obtaining health information obtained in the present study, according to Eastin and Guinsler and Baumgartner and Hartmann, it can be concluded that the higher the health anxiety among the individuals, the more frequently they tend to visit the doctor for the examination of physical symptoms as well as reduction of their concerns; for reliable frequent searching, they perform diagnostic and even costly tests and, in general, get the desired information without considering various barriers.^[16,18]

Furthermore, the findings of this study showed that the illness likelihood score was directly related to the need for health information and the purposefulness of health information seeking and had an inverse relationship with the barriers to obtaining health information. The

findings of the current study were consistent with the study by Abramowitz *et al.*,^[28] who found that the illness likelihood factor is a very effective factor in seeking medical information. In other words, they stated that individuals pursue medical information-seeking behaviors to try to reduce concerns about the illness likelihood.^[28] The study by Jung in this regard indicated that the more the thoughts about the illness likelihood among individuals, the more they feel the need to cope with and reduce unnecessary health concerns, perform preventive behaviors, and promote self-efficacy, and they carry out more purposeful seeking.^[38] Therefore, they are less likely to pay attention to the barriers to obtaining health information and try to obtain the information they need regardless of the barriers and are more willing to get the information they require.

Moreover, the findings in the present study revealed that the negative consequences of illness are inversely related to the validity of the health information sources and barriers to obtaining health information. So it can be said that the more people be awareness to the negative consequences of illness such as the loss of life, the sense of lack of joy in life and the inability of new science to their treatment, so, it is expected that they will decide to fight their fears and use any available information.^[39] In addition, in this case, it seems that they pay less attention to validity of the health information sources and pay more attention to the information content. It also appears that these Individuals request for more information to reduce their concerns by pursuing various strategies such as health information seeking.^[36,40] In fact, with increasing attention to the negative consequences of illness, individuals are less concerned about the barriers to obtaining health information in order to reduce these concerns and to find a sense of hope.

On the other hand, the findings of this study revealed that the preoccupation with illness had a direct relationship with the scores of the need for health information, the diversity of health information sources, the time of referring to health information sources, the purposefulness of health information seeking, and evaluation of the reasons for referring to the library. In this regard, it can be said that when people are overly concerned about their health and continuously notice their bodily symptoms and, in general, are highly preoccupied with illness, they feel more need for health information in comparison to others and seek more health information and carry out reliable searches in order to reduce their fears and to remove negative thoughts as well as to achieve a sense of confidence and tranquility.^[16,18] It can also be said that when people are exposed to stresses and concerns about their health status, and their minds are engaged with illness-related concerns, in order to track their health status and eliminate these concerns,

they seek health information through various sources of information such as newspapers, TVs, the Internet, radios, and health-care professionals.^[37]

Furthermore, it seems that when individuals are highly preoccupied with illnesses, this preoccupation can affect the time when people refer to health information sources in such a way that in order to reduce their mental health problems. Accordingly, and on the basis of the individuals' own mental problems, illness, or symptoms that they are engaged with, they refer to health information sources purposefully; for example, receiving and seeking information about general health, collecting information to prevent illnesses, obtaining information about the prescribed drugs, and seeking awareness of issues related to the nutrition field.

It seems that because these people use any source to achieve a sense of calm and confidence to address their concerns, they refer to libraries more purposefully and with clearer reasons in comparison to other people. In this regard, no study has been observed separately investigating the health anxiety components for comparison of the results, and this made it difficult for researchers to interpret the findings in this section.

Findings of the present study demonstrated the prediction of the need for health information based on health anxiety. These findings were consistent with the studies by Fergus and Dolan,^[31] Eastin and Guinsler,^[16] Baumgartner and Hartmann,^[18] Tanis *et al.*,^[21] Lagoe and Atkin,^[10] te Poel *et al.*,^[15] Muse *et al.*,^[20] Singh and Brown,^[19] White and Horvitz,^[32] Singh and Brown,^[13] Kim and Lee,^[33] Fink *et al.*,^[34] Hadjistavropoulos *et al.*,^[36] and Doherty-Torstrick *et al.*^[35] who found that the higher the health anxiety level among people, the more the need to seek health information and the level of the search for this information.

In other words, the greater the individuals' health anxiety, the more the stimuli around the health issue make the individuals eliminate these ambiguities and stimuli, and thus the more need they feel for health information and seeking information.^[33] It can also be said that people with health anxiety feel a constant need for health information to conduct reliable searches to reduce their anxiety and uncertainty about their health status.^[15] In fact, they have a fixed sense of the need for health information, which increases the temporal reduction of anxiety among these individuals.^[41]

Moreover, the findings of the study showed a lack of prediction of the type of health information seeking based on health anxiety. In general, individuals seem to seek health information based on their lifestyle, information literacy, and facilities provided for them,

and probably because of that, health anxiety has not contributed to choosing their searching type. There were no studies for comparison in this regard, so a more accurate comparison could not be made.

The findings of this study showed the prediction of the diversity of health information sources (such as books and the Internet) based on health anxiety. They were also consistent with the studies by Lagoe and Atkin^[10] and Muse *et al.*,^[20] who found that the higher the people's health anxiety level, the more diverse sources they use. In other words, the higher the individuals' health anxiety level, the more frequent reliable searches they perform and the various health information sources (such as the Internet, books, referrals to doctors, questions from others, and newspapers) they use in order to eliminate their concerns and reduce their fears and to check their health status.^[37,40] This could also be indicative of the increasing public awareness of health issues, as well as the increasing importance of information resources and the role of these resources in preventing the onset and diagnosis of illnesses, the health of individuals, and the reduction of medical expenses.^[5]

Moreover, the findings of this study revealed a lack of prediction of the time of referring to health information sources based on health anxiety. Based on the present investigation, the time of referring to health information sources includes four parts of seeking health information before the problem, after the problem, delaying while the occurrence of the problem, and seeking health information in all conditions. In fact, the vast workload of most individuals (whether with or without health anxiety) does not provide enough time to engage with illnesses and follow the medical issues before the problem occurs. Moreover, people may receive their usual health information by accidental information through television, radio, and social networks, and no longer feel the need to seek health information before the occurrence of the problem. In addition, it seems that all people, though with low or no health anxiety in the event of a problem and disease, because of the importance of the role of health in life, preventing the spread of disease, accelerating the recovery, etc., try to get informed about their current situation and increase their health information about the issue, and few will delay their health-related issues, even in case of little health anxiety. In fact, most of the participants in the study, with or without health anxiety, considered the treatment costs as the only cause to delay the pursuit of health issues, rather than their anxiety levels. Other reasons have not been found in similar studies, and these arguments need further investigation.

Other findings of this study indicated the purposefulness of health information seeking based on health anxiety.

The findings of this study were consistent with the study by Singh and Brown,^[13] who found that individuals with a high level of health anxiety deliberately, selectively, and purposefully sought information about illnesses. Investigations showed that the greater the people's health anxiety, based on the symptoms they have felt in themselves and generally as well as based on their information needs, the more likely it is that they perform a purposeful seeking to reduce their anxiety, and to prevent the onset or spread of a disease, decide to visit a physician and take medication, have a healthy diet and healthy lifestyle.^[11-13] Moreover, they search for matters such as decision-making to choose the treatment, check the symptoms, doctor's diagnosis, and new health issues.

On the other hand, the findings of this study indicated a lack of prediction of evaluation of reasons for referring to the library based on health anxiety. Perhaps, this is because people with high health anxiety tend to seek information in the least time to reduce their concerns and library may not be one of the first sources of health information for them. Moreover, given the increasing use of the Internet as the most common source of health information, these people also use the Internet more often, or they meet their information needs by contacting the doctor. There has been no relevant research in this regard.

Furthermore, the findings of this study showed prediction of barriers to obtaining health information based on health anxiety. No finding was found for comparison in other studies. Based on a study by Kőszegi, individuals with health anxiety try to resolve their stresses and concerns and confront their fears and less consider the barriers to obtaining information; they also try to obtain any available information and receive any information they need from any source, even if it is unpleasant for them, and try to learn useful information about their status so that it could help them choose the right treatment or adopt a suitable lifestyle.^[39] In fact, individuals with health anxiety do not pay attention to the barriers to obtaining health information, and as their health anxiety is higher, their attention to barriers to obtaining health information is less. According to the investigation conducted by Hadjistavropoulos *et al.*, people with health anxiety seek medical signs and symptoms in order to carry out a reliable search to ensure their health status.^[36]

Furthermore, the findings of this study revealed a lack of prediction of validity of the health information sources based on health anxiety. They were also consistent with the studies by Singh and Brown^[13] and Hadjistavropoulos *et al.*,^[36] who found that there was no significant relationship between health anxiety and the awareness of health information validity. On the other hand, the

findings of this study have been inconsistent with the study by Baumgartner and Hartmann,^[18] who found that health information obtained from more reliable sources would increase the health anxiety level. The reason for this inconsistency in the results seems to be the different characteristics of the statistical society, the different time and place of research, and its measurement tool. In addition, the reason for this inconsistency can be expressed in the type of search performed in this study; as in this study, only the online health information seeking has been considered. In connection with this lack of prediction, the study by Kőszegi showed that people with health anxiety use any available and affordable information to deal with their fears and concerns. In fact, health anxiety has not contributed to selecting valid or nonvalid sources.^[39] In summary, information-seeking behavior is influenced by various variables such as individual-social factors,^[42] sexual orientation identity,^[43] and offline and online intrinsic motivation.^[44] Therefore, paying attention to these variables in the process of health information services to users is very important.

Lack of sufficient references to investigate the relationship between the HISB and health anxiety, especially in Iran, as well as a closer and more detailed examination of the relationship between HISB components and components of health anxiety in Iran and abroad, and lack of understanding of concepts such as health information, HISB, and health anxiety in some users (despite a detailed description of the researcher) have been among the limitations of this study. The results of this study can be generalized to the statistical society of this study as well as to other statistical societies with similar conditions.

Conclusion

Based on the above issues, despite the existing limitations, the present study is the first one to predict the components of the HISB based on health anxiety carried out in Iran, and the results of this study are expected to be the basis for future research and to lead to the discovery and identification of new research grounds and increase the level of health and self-care. This study will lead to the identification of components of the HISB influenced by health anxiety. Therefore, the results of this study showed that the components of the need for health information, the diversity of health information sources, the purposefulness of health information seeking, and barriers to obtaining health information are predicted based on health anxiety, and in fact, health anxiety contributes to the onset of the HISB components.

In other words, as the level of health anxiety increases among individuals, the need for gaining health information and the desire to receive information associated with concerns increase in individuals. Users

also use various sources to obtain health information and meet their information needs purposefully. Moreover, in order to reduce the health anxiety level and find self-confidence and calm, the users pay less attention to barriers to obtaining health information and try to obtain the information they need and reduce their anxiety in every way.

Moreover, the components of health anxiety are themselves related to some of the components of the HISB and can affect some of these components among individuals. According to the findings of the current study, due to the growing interest in the illness likelihood, the need for health information increases and individuals perform more purposeful seeking, and their attention to barriers to obtaining health information decreases. Moreover, according to people's perceptions and thoughts, the more the negative consequences of illness on their lives, the less the attention paid to the validity of the sources and barriers to obtaining health information because these individuals are more likely to seek information to achieve a sense of calm and confidence. Furthermore, the excessive preoccupation with the illness of individuals increases the need for health information, the use of more diverse health information sources, and more purposeful seeking. In addition, it causes more focus on the time of referring to health information sources and more purposeful referral to public libraries.

Based on the results of this study, it seems that among the components of health anxiety, the component of preoccupation with illness has the highest impact and role in the HISB among users of public libraries in Isfahan. In general, health anxiety and its components have the highest impact on the components of the need for health information, the purposefulness of health information seeking, the consideration of the barriers to obtaining health information, and the diversity of sources used for obtaining health information. In other words, it can be concluded that these components are more effective components, and compared to other components such as the type of health information seeking, the time of referring to health information sources, the validity of the health information sources, and the evaluation of the reasons for referring to the library, they are more influenced by external and internal factors. Thus, librarians, and in particular librarians of public libraries, health information counselors, psychologists, health professionals, and all health information providers are required to pay more attention to the information needs and goals of public library users, to minimize barriers to obtaining health information, and to provide the sources needed by individuals and to facilitate access to them.

In other words, librarians need to consider the contribution of users' health anxiety to HISB, and have

effective guidance and pay attention to this in their planning and decision-making. In this regard, more interaction among the psychologists, librarians, and informants is needed to address the health anxiety of library users. Finally, considering that the role of health anxiety in understanding health-related behaviors, including the HISB, has been less considered, more studies are to be conducted to accurately assess the relationship between predictors and the HISB. It is also necessary to carry out other investigations on the prediction of the components of the HISB based on other psychological factors (depression, obsession, etc.)

Practical suggestions

Given the results of this study, librarians and informants need to pay more attention to the relationship and role of psychological factors on the HISB of the various sections of the society, and a medical librarian is needed to be present in public libraries as an information consultant for guidance and help users who come to the library with health-related issues. Moreover, considering that the diversity of health information sources was a very important factor in the current study, it is essential to provide access to a variety of up-to-date information sources related to health and psychology, especially in libraries. In addition, launching a health information consultation section in public libraries, building public health professional libraries to facilitate access to valid health information, holding workshops on health issues to raise awareness and knowledge of users among public libraries of health issues, the introduction and provision of a variety of valid health information sources, and training users of public libraries how to use them can be useful in controlling people's health anxiety and the HISB. It is also necessary to invite a psychologist to provide professional consultation to the users of public libraries in order to reduce the level of health anxiety, and in this context, inclusion of psychological materials, social psychology, and reference work principles in different chapter headings of the librarianship discipline and medical information seems necessary.

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Conflicts of interest

There are no conflicts of interest.

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