Original Article

Interpretive structural modeling of physician-patient communication avoidance

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Abstract

Background: Communication between physician and patient and medical personnel is the cornerstone of good medical care and communication skills play an important role in patient satisfaction and their treatment. The purpose of this research was to model the interpretive structure of avoiding communication between physicians in the public hospitals of Yazd city.

Methods: This research was conducted qualitatively and with a structural interpretative method in two hospitals of Shahid Sadougi University of Medical Sciences, Yazd. The study samples included 12 general practitioners and specialists working in the hospital, who were selected as a sample in a purposeful way until the theoretical saturation limit was reached. Data were collected using semi-structured interviews.

Results: Interpretive structural modeling showed that religious and belief factors were the cornerstones of the model. Hospital environment factors, challenges related to the medical profession, challenges related to colleagues, challenges related to the patient, information disorder, lack of skills, and social harms are on the second level, which affect the first level factors. First-level family factors and psychological factors by themselves do not affect other factors.

Conclusion: The ability to communicate correctly was one of the most important characteristics of health workers, and communicating correctly has positive effects on patients. Disruption in communication leads to misdiagnosis, reducing patient participation in treatment, and physician-patient communication is effective in providing primary health services and the efficiency of medical services.

Keywords: Communication; Hospitals, Public; Physicians.

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Introduction

Effective physician-patient communication is a central clinical function in building a therapeutic physician-patient relationship, which is the heart and art of medicine. This is important in the delivery of high-quality health care. Much patient dissatisfaction and many complaints are due to breakdown in the physician-patient relationship. However, many physicians tend to overestimate their ability in communication. The ability to establish correct communication is one of the basic skills of social life (1). In healthcare professions, communication, and communication skills play a crucial role in the satisfaction of staff, and patients, and in solving their problems (2). The results of studies indicate the weakness of medical staff in establishing communication with patients (3).

Communication apprehension means people's unwillingness to communicate with others or avoid interaction. People who experience communication apprehension tend to withdraw from social situations, fearing that others will deceive or blame them. Accordingly, avoiding and withdrawing from others makes a person feels weak in the eyes of others. It has unfavorable consequences for him or her in the political, social, and economic areas (1). Communication apprehension is not an intellectual or psychological disorder, but the person induces this state in himself or herself. Hence, if he or she wills, he or she can combat these mental inductions. Several reasons are involved in this regard, such as one's inappropriate expectations, fear of evaluation by others, excessive focus on the subject, low self-esteem, and fear of the audience's reaction (3).

Communication apprehension can cause problems for a person at the individual and organizational levels. People who have high communication apprehension face problems in completing their tasks, especially in social tasks and meeting new people (4). Improving this relationship causes patient's higher adherence to the treatment, greater patient satisfaction with the treatment team, and a reduction in medical errors and complaints (5). Based on many experts, the ability to communicate correctly is one of the most crucial characteristics of health staff (6). This issue is more significant for patients who need long-term care for some reason (7). In other words, proper communication has very positive impacts on patients, including improving vital signs, reducing pain and anxiety, increasing satisfaction, improving treatment outcomes, and better participation in treatment programs. Also, a disruption in communication causes misdiagnosis, reduces patient participation in treatment, and reduces the amount of information provided by patients (8).

Colmenares-Roa et al., examined the physician-patient relationship in Mexico. Their results revealed that communication skill is an effective factor in the quality of medical services and in improving the performance of physicians (9). In a study conducted in Sydney, Liu et al., considered communication skills training as one of the ways to reduce the challenge of communication apprehension (10). The results of a study by Kron et al., on medical students at the University of Michigan revealed that the communication skills of physicians are effective in increasing patient satisfaction (11). Given what was stated above, this study aim was based on the interpretative structural modeling of physicians' communication apprehension.

Methods

Study design

This qualitative study was conducted using interpretive structural modeling from January 2021 to August 2022. Two hospitals affiliated with Shahid Sadoughi University of Medical Sciences of Yazd were considered for study.

Samples

The samples of the study were included general and specialist physicians working in 2 hospitals. A purposeful sampling method with a maximum diversity approach was used for sampling. To conduct this study, the necessary coordination was made through the Health Deputy of Yazd University of Medical Sciences, and then the data collection process started. According to the qualitative studies, the interviews continue until the theoretical saturation of the data. Hence, a specific sample size was not considered for doing the work.

The inclusion criteria of the study were to have a degree as a general physician and specialist physician with more than 11years of work history and a willingness to participate in the study. The exclusion criteria of the study included unwillingness to continue cooperation and the unavailability of the desired experts to

develop an interview guide for conducting interviews.

Data collection

Specialized interviews with experts and coding were used to compile the questionnaire. After the qualitative analysis of the interview data, various indicators were identified and by categorizing the indicators, a suitable tool was designed.

The initial interviews were conducted in-depth with open-ended questions. After extracting the framework of the questions, the interviews were continued in a semi-structured manner. Some examples of the questions asked in the interview were: What is your approach to communicating with others (patients, colleagues, personnel, and treatment staff)? Why do you try not to communicate with others? Has your communication apprehension affected your daily activities? What would you like us to ask to help us understand the experience of communication apprehension? A total of 12 people were interviewed, 8 of them were specialist physicians and 4 were general physicians.

A semi-structured literature review and in-depth interviews with relevant physicians were conducted. The interview was conducted at the workplace of the participants for approximately 25 to 45 minutes. After obtaining their consent, the interviews were recorded using an MP4 player, and the content of the interview was carefully typed. Ethical considerations including anonymity, the confidentiality of information, and the right to withdraw at any time were observed. Then, the factors affecting the communication apprehension of physicians in public hospitals were presented to the experts in the form of a questionnaire.

Analyzing

Data were analyzed simultaneously with data collection and using the interpretive structural modeling method.

The interpretive structural modeling method was used to conduct this study. Interpretive structural modeling is a systematic and structured method to establish and understand the relationships between the elements of a complex system. It was introduced by Warfield in 1974 (12). This method is an interactive learning process in which a set of different and interrelated elements are structured in a comprehensive systematic model. This methodology helps to create and direct complex relationships between elements of a system. Interpretive structural modeling begins with preparing a list of variables that are related to the problem or subject. These variables are obtained from reviewing the literature on the subject, interviewing experts, or through questionnaires.

This method is interpretive since the judgment of a group of people determines whether there are relationships between these elements or not. Additionally, this method is structural since the basis of relationships is a global structure and is extracted from a complex set of variables (13). The primary idea of interpretive structural modeling is to decompose a complex system into several subsystems (elements) using scientific experience and expert knowledge to build a multilevel structural model (12). Thus, given the significant role of exploring the phenomenon of physician communication apprehension in public hospitals, experts' opinions and the review of previous studies were used in identifying the factors and determining the interactive relationships, and prioritizing the factors. Also, the opinions of experts on the discussed subject were used, indicating that the results are more effective and reliable. The interpretive structural method was used since the conditions of the investigated problem match the conditions of the interpretive structural modeling method and the intention was to provide a structural model for the phenomenon of physicians' communication apprehension in public hospitals. To achieve the research goal,

based on the factors affecting an effect, conclusions were drawn from the steps of creating ideas and extracting ideas. Creating ideas is the opinion of experts, and extracting ideas is obtained from reviewing the literature and previous studies. These factors should be organized with the help of a correct and appropriate structure of direct and indirect communication with each other. The process of systematic structuring of a set of existing factors will provide access to a coherent and hierarchical model of clear relationships among the assumed factors (14). Interpretive structural modeling suggests experts' opinions should be used based on various management techniques, such as brainstorming, nominal group, etc., in the development of content relations between variables. Thus, in this study, the opinions of 12 experts were used to explore the phenomenon of physicians' communication apprehension in the public hospital. Based on the guidelines of Warfield (1974), to explore the phenomenon of physicians' communication apprehension in the public hospital, the experts' opinions were used.

Steps of the interpretive structural modeling (ISM) method

1- Formation of structural self-interaction matrix (SSIM)

Regarding each pair of criteria, experts were asked to comment on the existence of a relationship between both criteria. Four signs were used to show the relationship between two criteria i and j.

V: Factor i causes the factor of column j to be realized.

A: The factor of column j causes the factor of column i to be realized.

X: Both row and column factors make each other to be realized.

O: There is no relation between the row factor and the column factor

2- Initial reachability matrix

It is obtained by converting the symbols of the SSIM matrix into the numbers zero and one based on the initial reachability matrix. There are only zeros and ones in this matrix. The rule of placing the numbers zero and one is as follows:

If the cell symbol is v, the number one is placed in that cell and the number zero is placed in the corresponding cell.

If the cell symbol is A, the number zero is placed in that cell and the number one is placed in the corresponding cell.

If the cell symbol is x, the number one is placed in that cell and the number one is placed in the corresponding cell.

If the cell symbol is o, the number zero is placed in that cell and the number zero is placed in the corresponding cell

3- The final reachability matrix

After forming the initial reachability matrix, the final reachability matrix is formed to adapt the initial reachability matrix. In this matrix, the driving power and the degree of dependence of each variable are shown. The driving power of each variable is the final number of variables that can play a role in creating them. The degree of dependence is the final number of variables that cause the formation of the mentioned variable

4- Determining the level of variables

To determine the level of factors in the final model, for each of them, a reachability set, an antecedent set, and an intersection set, are determined. The reachability set, in addition to itself, includes the set of factors that lead to the investigated factor. The antecedent set, in addition to itself, includes the set of factors that lead to investigated factor. The intersection set is also the intersection of reachability and antecedent sets. If the reachability and intersection sets are the same for one factor, that factor is placed at the highest level. Then, this leveled factor is set aside, and the leveling for other factors continues in the same way

until all factors are leveled. The result leads to the definition of 3 levels.

5- Drawing the model of interactions of factors

First, we sort the criteria according to the priority obtained from top to bottom based on the level. Using the matrix obtained from the received matrix sorted by levels, the structural model is drawn by nodes and lines. If there is a relationship from i to j, it is indicated by an arrow from i to j.

6- MICMAC analysis

The purpose of the analysis is to identify and analyze the driving power and dependence of variables. After determining the driving power and the dependence, all factors can be placed in the four clusters of the MICMAC method. On the desired matrix, MICMAC, the boundary points are usually one unit larger than the mean number of factors. In other words, for example, in this study, since the number of factors is 11, the boundary points on the MICMAC are considered to be 6. However, based on the research conditions, different boundary points can be considered. The boundary points should be such that they can separate the different factors in the desired clusters

Results

The interviewed participants included 12 general physicians and specialist physicians working in 2 hospitals affiliated with Shahid Sadoughi University of Medical Sciences in Yazd (Table 1).

Table 1. Demographic characteristics of the participants

Demographic characteristics			N	Percent
Gender	Female		4	33.33
	Man		8	66.67
Marital status	Single		2	16.67
	married		10	83.33
Age	41-50		6	50.00
	51-60		2	16.67
	>61		4	33.33
Specialty	General		4	33.34
	Specialist	Optometrist	2	16.68
		Neurologist	1	8.33
		Obstetricians	1	8.33
		Cardiologist	1	8.33
		Dentist	1	8.33
		Pediatrics	1	8.33
		orthopedist	1	8.33

1- Formation of structural self-interaction matrix (SSIM) (Table 2).

Structural self-interaction matrix:

In Structural Self- Interaction matrix (SSIM), if the value of i and j is V, the corresponding value in Initial Reachability Matrix (IRM) becomes 1 and the reverse of it i.e., the value of j and i becomes 0. If in SSIM, value of i and j is A, corresponding value in IRM becomes 0 and the value of j and i becomes 1.

2- Initial reachability matrix

The initial reachability matrix is examined for incorporating the transitivity concept and making modifications (if any). This concept states that if a barrier i is related to j and if the barrier j is related to a third barrier k, then i is necessarily related to k (Table 3).

Table 2. Structural self-interaction matrix

		C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
C1	Family factors	-	X	O	A	A	A	O	A	A	O	O
C2	psychological factors		-	O	O	O	O	O	O	O	O	O
C3	Belief factors			-	O	O	V	V	O	O	O	O
C4	Hospital environment				-	V	O	O	X	X	A	A
C5	Challenges related to the medical profession					-	A	O	A	X	V	A
C6	Challenges related to colleagues						-	X	V	X	X	O
C7	Challenges related to the patient							-	O	A	A	O
C8	lack of skills								-	A	X	O
C9	Information disorder									-	X	V
C10	Social harm										-	O
C11	Religious factors											-

Table 3. Initial reachability matrix

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
C1	1	1	0	0	0	0	0	0	0	0	0
C2	1	1	0	0	0	0	0	0	0	0	0
C3	0	0	1	0	0	1	1	0	0	0	0
C4	1	0	0	1	1	0	0	1	1	0	0
C5	1	0	0	0	1	0	0	0	1	1	0
C6	1	0	0	0	1	1	1	1	1	1	0
C7	0	0	0	0	0	1	1	0	0	0	0
C8	1	0	0	1	1	0	0	1	0	1	0
C9	1	0	0	1	1	1	1	1	1	1	1
C10	0	0	0	1	0	1	1	1	1	1	0
C11	0	0	0	1	1	0	0	0	0	0	1

3- The final reachability matrix

The final reachability matrix is obtained by incorporating the transitivity as explained in earlier section.

The degree of dependence is the final number of variables that cause the formation of the mentioned variable (Table 4).

"Social harm", "The challenges related to the medical profession", "The challenges related to colleagues", and "The challenges related to the patient" (with a driving power of 10). The lowest driving power is related to "psychological factors" (with driving power of 2).

4- Determining the level of variables

As an example, determining the first level is shown in the (Table 5) and (Table 6).

Determining the first level

The results show that the greatest effects are related to the "hospital environment",

Table 4. Final reachability matrix

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	Driving power
C1	1	1	0	1	1	1	0	1	1	0	0	7
C2	1	1	0	0	0	0	0	0	0	0	0	2
C3	1	0	1	0	1	1	1	1	1	1	0	8
C4	1	1	0	1	1	1	1	1	1	1	1	10
C5	1	1	0	1	1	1	1	1	1	1	1	10
C6	1	1	0	1	1	1	1	1	1	1	1	10
C7	1	1	1	1	1	1	1	1	1	1	0	10
C8	1	1	0	1	1	1	1	1	1	1	0	9
C9	1	1	0	1	1	1	1	1	1	1	0	9
C10	1	1	0	1	1	1	1	1	1	1	1	10
C11	1	1	0	1	1	1	0	1	1	1	1	9
dependence	11	10	2	9	10	10	9	10	10	9	5	

Table 5. Determining the first level

Row	Reachability	Antecedent	Intersection	Level
1	1, 2, 4, 5, 6, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	1, 2, 4, 5, 6, 8, 9	1
2	1, 2	1, 2, 4, 5, 6, 7, 8, 9, 10, 11	1, 2	1
3	1, 3, 5, 6, 7, 8, 9, 10	3, 7	3, 7	
4	1, 2, 4, 5, 6, 7, 8, 9, 10, 11	1, 4, 5, 6, 7, 8, 9, 10, 11	1, 4, 5, 6, 7, 8, 9, 10, 11	
5	1, 2, 4, 5, 6, 7, 8, 9, 10, 11	1, 3, 4, 5, 6, 7, 8, 9, 10, 11	1, 4, 5, 6, 7, 8, 9, 10, 11	
6	1, 2, 4, 5, 6, 7, 8, 9, 10, 11	1, 3, 4, 5, 6, 7, 8, 9, 10, 11	1, 4, 5, 6, 7, 8, 9, 10, 11	
7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	3, 4, 5, 6, 7, 8, 9, 10	3, 4, 5, 6, 7, 8, 9, 10	
8	1, 2, 4, 5, 6, 7, 8, 9, 10	1, 3, 4, 5, 6, 7, 8, 9, 10, 11	1, 4, 5, 6, 7, 8, 9, 10, 11	
9	1, 2, 4, 5, 6, 7, 8, 9, 10	1, 3, 4, 5, 6, 7, 8, 9, 10, 11	1, 4, 5, 6, 7, 8, 9, 10, 11	
10	1, 2, 4, 5, 6, 7, 8, 9, 10, 11	3, 4, 5, 6, 7, 8, 9, 10, 11	4, 5, 6, 7, 8, 9, 10, 11	
11	1, 2, 4, 5, 6, 8, 9, 10, 11	4, 5, 6, 10, 11	4, 5, 6, 10, 11	

Table 6. Level of variables

Row	Factors	Level
1	Family factors	1
2	psychological factors	1
3	Belief factors	3
4	Hospital environment	2
5	Challenges related to the medical profession	2
6	Challenges related to the colleagues	2
7	Challenges related to the patient	2
8	lack of skills	2
9	Information disorder	2
10	Social harm	2
11	Religious factors	3

5- Drawing the model of interactions of factors

The final diagram was obtained by removing the multiple modes and also by using the segmentation of the levels.

The first level is selected as the most affected level and the last level is also selected as the most influential level. As shown in the (Figure 1), the third-level factors (religious factors and belief factors) act as the cornerstone of the model. As a result, the investigation of the phenomenon of physicians' communication apprehension in the public hospital should be started from these variables and extended to other variables using the interpretive structural modeling method. Factors of the hospital environment, challenges related to the medical profession, challenges related to colleagues, challenges related to the patient, information disorder, lack of skills, and social harm are on the second level, which affects the first-level factors. First-level factors (family factors and psychological factors) do not affect other factors directly.

6- MICMAC analysis

(Table 7) and (Figure 2).

Table 7. Driving power and dependence

Row	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
Driving power	7	2	8	10	10	10	10	9	9	10	9
Dependence	11	10	2	9	10	10	9	10	10	9	5

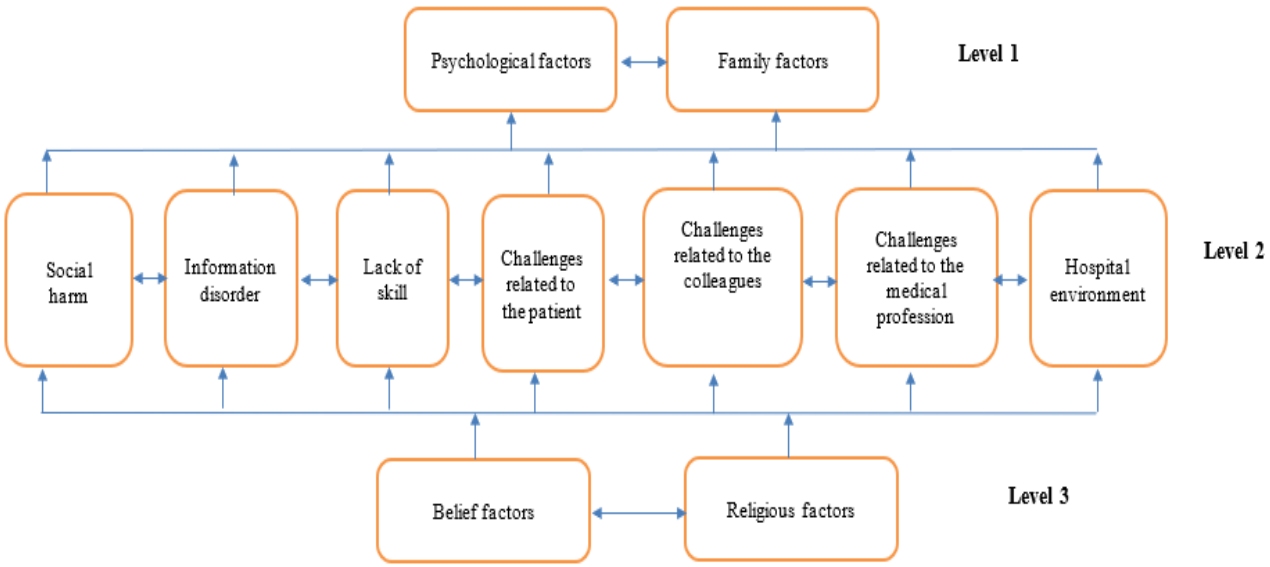

Figure 1. Drawing the interaction model of factors

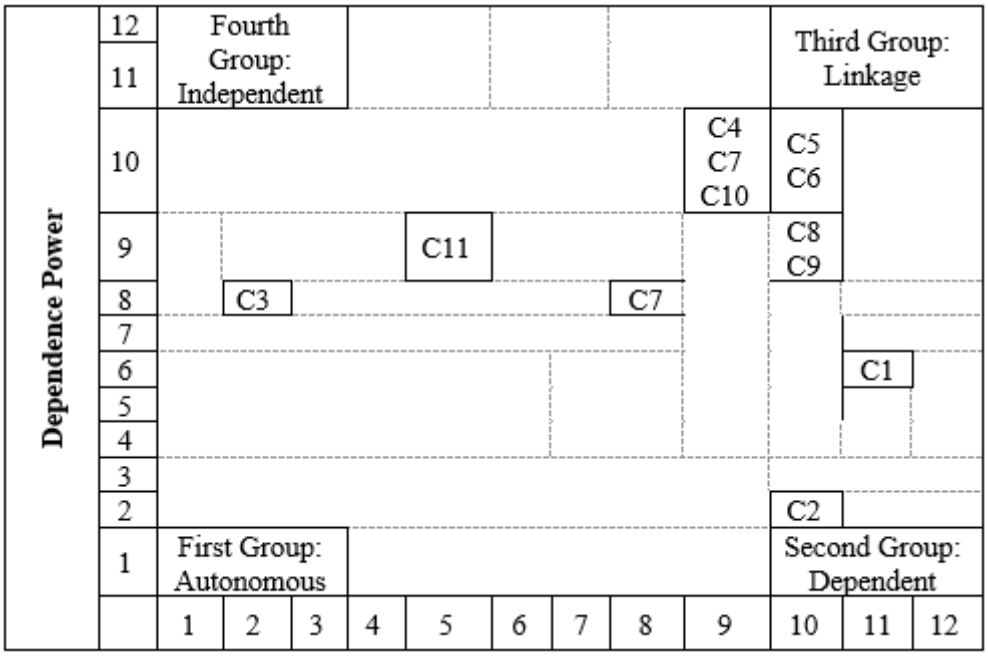

Figure 2. Leveling of the factors

MICMAC analysis shows that no variable is included in the autonomous category (first group). It indicates that there is a strong relationship between the components in the obtained model. The variables of "family factors" and "psychological factors" are mostly affected by other factors and are among the affected and dependent elements (second group), which have weak driving power. However, they have a higher dependence power than other factors. In other words, this factor is the output of interactions between other factors. In other words, there are more significant factors to explore the phenomenon of physicians' communication apprehension in the public hospital, which leads to this factor. Also, the variables of "belief factors" and "religious factors" are among the key variables, which are included in the category of independent variables (fourth group) and have a great impact on the realization of the phenomenon of physicians' communication apprehension in the public hospital. It has a high driving power and low dependence. The variables that have a high driving power are called key variables. These variables are placed in one of two groups of independent or linkage variables. Any action on these variables causes a change in other variables. Other variables in terms of driving power and dependence are a part of linkage variables (third group), meaning that the variables in it have strong driving power and dependence. These variables are unstable since any change in them affects the entire system, and the system feedback can change these variables again.

Discussion

The present study was conducted to interpret the structural modeling of physicians' communication apprehension in public hospitals in Yazd. The results of the study revealed that the variables of "family factors" and "psychological factors" are more affected by other factors. From a systemic point of view, they are among the dependent elements (second group) that have a weak driving power. However, they have a higher dependence power than other factors. Also, the variables of "belief factors" and "religious factors" are among the key variables, which are included in the category of independent variables (fourth group) and have a great effect on the

realization of the phenomenon of physicians' communication apprehension in the public hospital and have a high driving power and low dependence.

The results revealed that family factors are effective in physicians' communication apprehension. A study by Gao et al., investigated physician-patient communication during colon cancer screening among African-Americans, Latinos, or Chinese people. Their results revealed that family factors of physicians affect their communication apprehension (15). Family problems and the tension of the family environment affect their behavior and make them not have proper interaction in the work environment with colleagues and patients, resulting in communication apprehension. Psychological factors have been suggested as one of the reasons for physicians' communication apprehension. In this regard, Fulmer, conducted a study in work environments in the city of Knoxville and found that personality and psychological factors affect communication apprehension (16). Under the effect of their behavioral and psychological factors, physicians may not want to communicate, or they may be afraid of communicating and avoid interacting with others, resulting in communication apprehension.

The results revealed that belief factors affect physicians' communication apprehension. In this regard, Koponen et al., investigated the physicians of Helsinki Hospital and found that belief factors affect communication apprehension and the level of interactions of physicians with their colleagues and patients (17). Peltola & Isotalus, conducted a study among physicians and type 2 diabetic patients in South Africa. They found that belief factors affect physicians' communication apprehension (18). If the belief issues are effective in the way of communicating and the degree of willingness to communicate and lead to communication and interactions of physicians with colleagues and patients, it can be an effective factor in reducing communication apprehension of physicians.

Religious factors are among the factors that affect physicians' communication apprehension. In this regard, Ganesh, investigated Indian physicians and found that religious factors affect the level of physicians' communication apprehension (19). Religious factors and religious beliefs determine the limits of people's communication with their colleagues and how they communicate and interact with different religions. In many cases, religion determines the type of communication. It allows physicians to interact with patients and even colleagues. Thus, religion and religious factors can affect physicians' communication apprehension.

Lack of skills was found an effective factor in physicians' communication apprehension in this study. A study by Gao et al., investigated the physician-patient relationship. In this regard, they examined people with fibromyalgia and rheumatologists in public and private health care in Mexico. Their results revealed that the lack of knowledge, expertise, and skills among people affects their communication apprehension (15). Physicians who do not have the necessary knowledge, expertise, skills, and abilities, show weakness in communicating with colleagues, patients, and other members of the hospital staff, resulting in communication apprehension.

Information disorder is one of the factors affecting physicians' communication apprehension. In this regard, Farrington, conducted a study in the World Health Organization and their results confirmed the results of the present study as they found a defect in the information system affects the physicians' communication apprehension (20). Disruption in hospital information systems and the lack of accurate, clear, and timely information make the physicians not perform well and cannot establish proper interaction, resulting in communication apprehension.

The factor of challenges related to the patient also affected the physicians' communication apprehension in this study. Peterson et al., conducted a study on labor children in Kazakhstan and showed that the challenges related to communication with others are among the factors affecting their communication apprehension. They recommended that this challenge can be reduced by establishing classes and training courses (21). Watson & Fu, also stated that holding seminars focusing on teaching communication skills is effective in reducing the communication challenges of medical interns in Brazil (22). Liu et al., investigated learning communication skills in clinical consultation in Sydney City. Their results revealed that creating an environment for teaching communication skills is one of the ways to reduce the challenge of communication apprehension (10). Kron et al., found that using computer simulation to teach communication skills will help medical students at the University of Michigan improve their communication ability (11).

The challenges that physicians have with patients and communicating with them significantly affect the communication between them. If physicians do not have enough skills and training in this area, they will have problems communicating with patients, resulting in communication apprehension. The factor of challenges related to colleagues was also found as one of the reasons for physicians' communication apprehension. Several studies, such as the studies conducted by Farhadi et al., (2) on nurses and physicians in Abadan, Shirvan, Mashhad, and Tehran hospitals, Dechairo-Marino et al., (23) on some physicians and nurses in California hospitals, and Barrere & Ellis, (24) among nurses and physicians in the United States and Mexico revealed that the challenges related to colleagues affect the physicians' communication apprehension. These results are consistent with those of our study. Thus, we can conclude that when physicians face challenges related to colleagues or non-constructive behaviors in their work environment, they refuse to communicate with them and communicate less with their colleagues, resulting in communication apprehension.

The factor of challenges related to the medical profession was also found as one of the reasons for physicians' communication apprehension. In this regard, Thempson & Stewart, investigated the relationship between physicians and nurses in London (25), and Chaboyer & Patterson, investigated the views of general and special care nurses in an Australian hospital (26) and found that the challenges related to the medical profession are among the factors affecting the communication apprehension medical staff and physicians. The challenges related to the medical profession and environmental tensions make physicians unwilling to communicate with their colleagues and make no effort to interact constructively.

The results revealed that the hospital environment affects the physicians' communication apprehension. In this regard, in a study in Geneva, Hudelson et al., found that the working environment and its governing conditions affect the communication apprehension of physicians and nurses (27). The way physicians communicate and interact with colleagues and patients is significantly affected by the working environment. Information systems and the communication of physicians with colleagues and patients can significantly affect the communication between them. Also, the physical conditions and the shape of the building of the work environment can affect the level of interaction and communication of physicians with patients, nurses, and other members of the treatment staff. Thus, it can affect communication apprehension. Social harm was one of the factors that affected physicians' communication apprehension in this study. Merete Alpers, introduced mistrust and social harm as the reasons for physicians' communication apprehension (28). The

social harm experienced by physicians in the workplace affects the way they communicate and behave. It causes physicians to limit their communication, which provides the conditions for communication apprehension in them. Despite its strengths, this study suffers some limitations. The study was conducted using a cross-sectional method and data were collected from physicians and needs assessment was done from the point of view of a group of stakeholders. Also, the lack of previous scientific studies in this field limited the research discussion.

Conclusion

The ability to establish correct communication is one of the most significant characteristics of healthcare staff. Establishing correct communication positively affects the patients. Also, a disruption in communication results in misdiagnosis, reduction of patient participation in treatment, etc. In other words, communication between physician and patient is essential in providing primary health services successfully and in the efficiency of medical services. Identifying the factors affecting physicians' communication apprehension can improve the relationships and pave the way for reducing physicians' communication apprehension. In other words, effective communication between physician and patient will improve the quality of care and treatment of patients, the job satisfaction of physicians, and the satisfaction of patients with treatment.

It is recommended to provide the necessary training to physicians in the field of communicating with patients, colleagues, and patients' caregivers to improve the ability of physicians to communicate. It is also recommended to provide the required information and data about the patient to the physicians so the physicians can make more effective treatment decisions. Good and healthy communication between physician and patient is the cornerstone of good medical care. Most of the medical diagnoses and decisions are based on the information obtained from the interview with the patient, and communication is the basis of the medical interview. Communication ability is a basic human skill, and like many skills, some people have a more innate ability to communicate than others, but skills can and should be improved. Medical affairs cause direct intervention in people's personal affairs, which is not very acceptable ethically.

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Authors' contribution

Rohollah Mirjalili and Hossein Kazemi developed the study concept and design. Malikeh Beheshtifar and Rohollah Mirjalili acquired the data. Rohollah Mirjalili and Hossein Kazemi analyzed and interpreted the data, and wrote the first draft of the manuscript. All authors contributed to the intellectual content, manuscript editing and read and approved the final manuscript.

Informed consent

Questionnaires were filled with the participants' satisfaction and written consent was obtained from the participants in this study.

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Conflict of interest

The authors declare that they have no conflict of interests.

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