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Assessment interprofessional communication skills in primary health care team in Isfahan

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Abstract:

BACKGROUND AND AIM: Interprofessional communication is viewed as an important precursor to developing healthcare professionals. The purpose of this study was to examine the predictive ability of influence factors for interprofessional communication behavior among health care team members.

MATERIALS AND METHODS: This descriptive-analytical study has a cross-sectional design and was conducted in 2023. A self-administered questionnaire survey was sent to a random sample of 450 health team workers, including physicians, nurses, nutritionists, health care experts, and psychologists, based in many public health centers in Isfahan. The questionnaire included questions on attitudes, role transparency, mutual respect and trust, communicative barriers, self-efficacy, and communicative behavior. Descriptive statistics, t tests, and Chi-square tests were performed with SPSS 24.0 for Windows. α was considered to be 0.05.

RESULTS: Based on the analysis of the results, among the demographic variables, only age showed a significant relationship with mutual respect and trust. The average scores of attitude and self-efficacy among the study subjects were 34.25 ± 5.54 and 39.80 ± 6.7 , respectively, and the average score of barriers to effective communication with colleagues was 12.35 ± 3.06 . There was a significant positive relationship between the mutual respect ($P = 0.038$) and self-efficacy scores ($P = 0.046$) and the communication behavior score ($P = 0.01$). In addition, there was a significant inverse relationship between barriers to effective communication with colleagues and self-efficacy and communication behavior ($P = 0.01$).

CONCLUSION: Since self-efficacy is the most important influencing factor in interprofessional communication skills, designing educational interventions based on self-efficacy is recommended.

Keywords:

Communication, interprofessional relations, primary health care

Introduction

Healthcare professionals are increasingly encouraged to work together to provide care for patients as health care teams.^[1] Interprofessional teamwork and the delivery of healthcare services both rely heavily on communication.^[2,3] Communication skill is described as the most important required feature for people working in the health care sector.^[4] Communication entails a complex exchange of verbal and

nonverbal messages, in which the message sent is not generally interpreted the same as the message received.^[5] Furthermore, interprofessional communication was defined as an instance of open, cooperative, and responsive communication between professionals and the community that entails interaction and not merely an exchange of information, where several factors impact the message creation, exchange, and interpretation processes.^[6] Different aspects of communication quality include cooperation, trust, mutual respect, effective

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communication processes, negotiation, interdependence, professional territories, blurred professional boundaries, organizational systems, and workplace culture.^[2]

It is commonly acknowledged that effective communication among medical staff members can increase interprofessional cooperation and ultimately improve patient health outcomes through greater access, lower cost, improved patient choice, and higher quality care.^[7,8]

However, interprofessional communication is often fragmented and inefficient, leading to poor user outcomes such as medication errors and adverse and sentinel events, including provider frustration.^[9] Moreover, poor communication between clinicians and their colleagues or other health care professionals, such as nurses or social workers, contributes to poor patient-doctor communication.^[10] On the other hand, with increasing patient acuity and specialization of healthcare providers, patients rarely receive care from an individual healthcare provider. Currently, patient care requires a collaborative approach by a team of providers.^[11,12] However, recent literature indicates that healthcare professionals lack the ability to work in collaboration with healthcare professionals from other disciplines because of communication and collaborative practice gaps.^[13]

Research on interprofessional communication has not yet received proper academic attention. Existing knowledge is still dispersed. Studies frequently focus on interprofessional collaboration from the viewpoint of a particular profession. The majority of medical research has focused on physicians and nurses.^[1] The positive point of this article is that all members of the treatment and healthcare team from various disciplines are considered collectively. The purpose of this study was to examine the predictive ability of attitude, role transparency, mutual respect, barriers, and self-efficacy for interprofessional communication behavior among health care team members.

The following research questions guided the current study:

1. What are the elements of effective communication in primary health in Isfahan?
2. What is the strongest predictor of interprofessional communication skills?
3. Which demographic factors (age, gender, marital status, education, type of job...) are effective on interprofessional communication skills?

Materials and Methods

Study design and setting

A cross-sectional, descriptive-analytical study was designed during 2023 to examine the predictive ability

of influence factors for interprofessional communication behavior among health care team members in public health centers in Isfahan.

Study participants and sampling

The study population includes all employees of the health team of health centers in Isfahan city, which include physicians, nurses, nutritionists, health care experts, and psychologists. The sampling method in the current study is cluster sampling. The sample size in the current study was 450 people, according to the confidence level of 95% and the accuracy of the estimate was 10%.

Data collection tool and technique

When the proposal was approved, the sampling was started by sending the questionnaire electronically to all the health centers in Isfahan, which includes 40 centers. After sending an invitation message via WhatsApp and Telegram application to a list of all health workers, the objectives of the study were clearly stated, and the participants were assured that the information would be collected only for research purposes and confidentially. Before the questionnaires were given out, an informed consent was requested, and study participants completely gave their consent. Informed consent was obtained from all the study participants. The duration of completing the questionnaire was 15–17 min. Finally, 354 health workers completed the questionnaire and were included in the analysis (response percentage 0.79%).

The inclusion criteria included people who had at least 3 years of work experience and were willing to participate in the study; people who did not complete the questionnaire completely and who had recently moved to a new workplace were excluded.

Instrument

We used a researcher-made questionnaire to investigate the interprofessional communication skills (IPCs) of health care center personnel. By reviewing the literature and the relevant text, the initial version of the questionnaire was developed (107 items). Then, according to the following steps, reliability and validity were evaluated:

1. The questions were rechecked, and duplicate questions were removed. With respect to face-to-face validity, many questions were removed from the experts.
2. The questionnaire was emailed to 20 experts in the fields of health education and health promotion, and its face validity (easy comprehension) and content validity (with scoring of 3 aspects: importance, clearance, and accountability based on a Likert scale) were confirmed. Finally, 72 questions were included in the reliability test.

3. The panel of experts (25 people) included 10 health education specialists, 5 nurses, 2 psychologists, 3 nutrition experts, 2 general physicians, 1 geriatric health specialist, and 2 health care workers. The comments of the panel of experts regarding the type of writing questions, appropriate words, and appropriate scoring were reviewed, and all comments were comprehensively applied. According to Lawshe's formula and table, 51 questions with Content Validity Ratio (CVR) greater than 0.37 remained in the questionnaire. In the calculation of the Content Validity Index (CVI), questions with a CVI value higher than 0.79 were acceptable.

The final version of the questionnaire consisted of two general parts:

- A Demographic variables, including age, gender, marital status, type of employment, work experience, participation in communication skills training workshops.
- B Interprofessional communication skills. This part had 51 items in 6 dimensions, including 8 questions about attitude, 7 questions regarding role transparency, 6 questions about mutual respect and trust, 6 questions about communicative barriers, 12 questions about self-efficacy, and 12 questions about communicative behavior. In Figure 1, the conceptual framework of the questions is written.

Data analysis was performed using SPSS software, version 24. The Kolmogorov–Smirnov test was used to assess the normality of the data. If the data were normal, the independent *t* test and analysis of variance were used to compare the structures with the field variables, and nonparametric tests were used if the data were not normal. The level of significance in this study was considered to be less than 0.05.

Ethical consideration

The study was approved by the Ethics Isfahan University of Medical Sciences. This article was derived from a part of PhD thesis on health education and promotion (IR.MUI.RESEARCH.REC.1400.347).

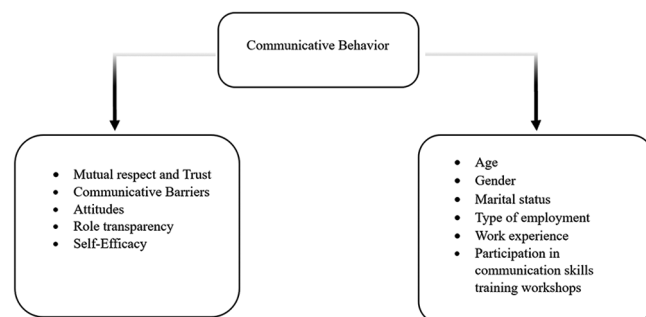


Figure 1: A theoretical framework in a conceptual figure

Results

Questionnaires were sent to 450 health center personnel, and finally, 354 people completed the questionnaires. The participants included health team workers such as physicians, (18) nurses (61), nutritionists (25), health care experts (235), and psychologists (15) based in public health centers in Isfahan.

The results of the Kolmogorov–Smirnov test in the present study showed that the data of the study are normal, and parametric methods were used to compare the data in this study.

The mean and standard deviation of the participant's age was 35.6 ± 8.1 . The average working experience of people was equal to 10.53 ± 7.4 years. More than 70% of the study subjects were women. The highest frequency of the type of employment was related to the type of Permanent employment contract, with 53.5 percent. Almost half of the participants (45.5%) had previously participated in the communication skills training course.

Table 1 shows the mean and standard deviation of different dimensions. The mean and standard deviation of attitude and self-efficacy among participants were 34.25 ± 5.54 and 39.80 ± 6.7 , respectively, and the average score of barriers to effective communication with colleagues was 12.35 ± 3.06 .

Table 2 examines the determination of the correlation coefficient between the dimensions. Based on the findings, a significant positive relationship has been observed between the dimension of mutual respect and self-efficacy and communication behavior and self-efficacy ($P = 0.01$). In addition, a significant inverse relationship between barriers to effective communication with colleagues has been observed with self-efficacy and communication behavior ($P = 0.01$).

Table 3 examines the determination of the regression coefficient of model structures in predicting communication behavior. Based on the findings of the study, self-efficacy and respect and mutual trust had the highest prediction in communication behavior with a standard coefficient of 0.111 and 0.192. In general, the

Table 1: Determining the mean dimensions of (IPCs) questionnaire

Dimensions of model	Mean	SD
Attitude	34.25	5.54
Role transparency	24.06	5.68
Respect and trust	23.33	4.22
Barriers	12.35	3.06
Self-efficacy	39.80	6.7
Behavior	24.22	5.3

Table 2: Correlation coefficient between the dimensions of (IPCs)

Dimensions		Attitude	Role transparency	Respect and trust	Barriers	Self-efficacy	Behavior
Attitude	Correlation	1	0.032	0.083	-0.048	0.012	0.064
	Sig.		0.555	0.120	0.371	0.827	0.233
Role transparency	Correlation	0.032	1	-0.020	-0.043	0.035	0.025
	Sig.	0.555		0.710	0.425	0.512	0.637
Respect and trust	Correlation	0.083	-0.020	1	-0.097	0.221**	0.160**
	Sig.	0.120	0.710		0.068	<0.001	0.003
Barriers	Correlation	-0.048	-0.043	-0.097	1	-0.313**	-0.178**
	Sig.	0.371	0.425	0.068		<.001	<0.001
Self-efficacy	Correlation	0.012	0.035	0.221**	-0.313**	1	0.249**
	Sig.	0.827	0.512	<.001	<0.001		<0.001
Behavior	Correlation	0.064	0.025	0.160**	-0.178**	0.249**	1
	Sig.	0.233	0.637	0.003	<0.001	<0.001	

**Correlation is significant at the 0.01 level (2-tailed)

Table 3: Regression coefficient of model structures in predicting communication behavior

Dimensions	B	Std. Error	Beta	t	Sig.
Attitude	0.047	0.050	0.049	0.936	0.350
Role transparency	0.004	0.049	0.004	0.079	0.937
Respect and trust	0.139	0.067	0.111	2.083	0.038
Barriers	-0.109	0.095	-0.098	-1.777	0.046
Self-efficacy	0.152	0.044	0.192	3.439	<0.001

ADJ, $R=0.314$, $R^2=0.345$, $R=0.587$

three dimensions of mutual respect ($P = 0.38$), barriers to effective communication with colleagues ($P = 0.046$), and self-efficacy had a significant relationship with the construct of communication behavior ($P = 0.001$).

In Table 4, the relationship between the average age and the dimensions of (IPCs) was examined, and only a significant and positive relationship was observed between the average age and mutual respect and trust ($r = 0.121$, $P = 0.025$). This means that with the increase in age of health personnel, the average score of mutual respect and trust increases significantly.

In Table 5, due to the fact that the participants are classified into two categories of treatment and health care, for the data analysis section, physician and nurse occupations are placed in the treatment group, and the occupations of health care expert, nutritionist, and psychologist are placed in the health group. Table 5 also examines the relationship between passing communication skills training course of the study subjects with the dimensions of the (IPCs).

As the findings show, the average score of attitudes, self-efficacy, and the communicative behavior in health care workers is significantly higher than of therapists.

In addition, people who have attended communication skills training course compared to people who have not joined communication skills training course have higher the average score of IPCs ($P = 0.01$).

Discussion

The purpose of this study was to examine the predictive ability of attitude, role transparency, mutual respect, barriers, and self-efficacy for interprofessional communication behavior among health care team members. The findings of this study support the ability of the three examined factors to predict communication behavior for health care team members. The model accounts for 31% of the variance in communication behavior scores. Of the predictor variables, the most significant variables were self-efficacy, mutual respect, and barriers. These results revealed a significant relationship between self-efficacy and communicative behavior. In other words, self-efficacy can best predict interprofessional communication. However, comparing our results with those of previous studies on interprofessional communication is not easy, as different studies have used diverse methodologies, such as qualitative research methods or divers' questionnaires and scales.

Self-efficacy is an essential factor in the adoption and retention of challenging behaviors and skills, such as interprofessional communication behavior.^[14,15] In line with previous research, the results implied that participants' confidence that they would be able to deal with barriers that they may face while engaging in interprofessional communication and collaboration, as their self-efficacy can predict their interprofessional communication behavior. The relationship between self-efficacy and communication behavior has been previously documented.^[16,17]

The results showed that mutual respect and trust have a positive effect on communication behavior. This finding was in line with Keller's study, which points to the role of respect in building a transparent working relationship in the therapeutic environment.^[18] In another study, a lack of mutual respect was emphasized as an important

Table 4: Determining correlation between model constructs and age

Dimensions		Attitude	Role transparency	Respect and trust	Barriers	Self-efficacy	Behavior
Age	Correlation	-0.005	-0.053	0.121*	-0.079	0.173	0.015
	Sig.	0.925	0.327	0.025	0.142	0.016	0.782

*Correlation is significant at the 0.05 level (2-tailed)

Table 5: Comparison of questionnaire dimensions IPCs with job category and communication skills training course

Dimensions		Attitude	Role transparency	Respect and trust	Barriers	Self-efficacy	Behavior
Job category	Health	38.4±6.7	23.9±5.6	22.1 ± ±4.2	12.57±3.1	42.46±7.07	38.54±5.5
	Therapy	33.6±5.8	22.1±4.3	21.6±3.09	12.03±3.05	37.92±6.2	33.13±5.3
	Sig.	0.001*	0.3	0.4	0.6	0.001*	0.001*
Training course	Yes	37.02±6.6	25.80±5.9	23.78±4.1	13.3±2.8	44.94±6.4	37±0.1±5.3
	No	34.9±5.3	24.2±5.4	23.01±4.3	12.64±7.06	36.08±5.3	31.34±5.4
	Sig.	0.01*	0.08	0.1	0.3	0.001*	0.001*

The results are reported as mean±sd. Independent t-test will be used to compare the results. $P < 0.05$ indicate significance

challenge that prevents the formation of collaborative relationships between different professions.^[19] In addition, one study investigated how communication and cooperation challenges are experienced and addressed among multicultural staff teams in nursing homes and emphasized ensuring mutual respect in the workplace.^[20] Another study revealed that “respecting the participation of the other team members” is among the essential competencies for interprofessional teamwork. This is especially true when working as a team because mutual respect is crucial for conflict resolution.^[21] In addition, a previous study demonstrated that the amount of respect doctors had for their patients was related to the amount of information they shared.^[10]

As expected, the results of the present study showed that participants’ perceived barriers to effective communication with colleagues in health centers can significantly predict their interprofessional communication behavior. Consistent with these findings, some studies have revealed numerous barriers to strengthening communication and collaboration involving professionals from different backgrounds and cultures as team members.^[18] For example, a study mentioned that since the medical educational system in Iran is a discipline-based educational system, applying interprofessional teamwork among health care team members is faced with various challenges.^[22]

Some studies have focused on the challenges and barriers of teamwork and interprofessional collaboration and have identified them as a lack of motivation and competency, an individualistic culture, a predominance of physicians, a weakness in education and training, and insufficient experience.^[21] In our study, the large amount of work and the lack of training regarding interprofessional communication skills were mentioned as the most important obstacles to having an effective relationship with colleagues. The most important barrier for the establishment of good relations between

these professions, according to the physicians, was that they did not recognize the nurses’ professional role.^[23] In another study, the most common barriers to practicing good communication skills were found to be an infrastructural deficit, lack of time, and long working hours.^[24]

In general, it can be concluded that numerous barriers to strengthening collaboration involve professionals from different backgrounds and cultures.

The findings of our study did not show a significant relationship between attitude and communicative behavior. However, the factors that improve professionals’ attitudes toward effective interprofessional communication, such as nonverbal communication, should be further explored.^[10] This is especially true when working as a team because this component is crucial for conflict resolution.^[25] In line with our study, in another study, the mean score of physicians’ attitude was 32.4.^[26] However, in one study, medical students had negative attitudes toward communication.^[27] Therefore, it is better to start communication skills learning in the institution right from the first semester, and students will be provided opportunities for supervised practice during early clinical exposure and with standardized patients.

The results also revealed no significant relationship between role transparency and communicative behavior in this sample. One study showed that transparent internal communication has many advantages, such as encouraging employees to adopt a control coping strategy to proactively manage changes, reducing employees’ change-related uncertainty, and fostering healthy relationships between employees and their organizations.^[28] Transparency in communication emphasizes teams’ efforts to provide truthful, substantial, and valuable information to their employees. This quality of information can help avoid confusion and improve communication efficiency.^[29] According to the

transparency and trust literature, it is widely believed that transparency perceptions are positively related to trust.^[30]

Another important finding is that among the demographic variables, people's age has a positive and significant relationship with respect and trust. This finding was in line with the findings of another study in which doctors were found to play an important role in the relationship between doctors and nurses.^[23]

Another finding of our study is that people who participated in communication skill training courses had a higher average score on the questionnaire of IPC dimensions. Previous studies have shown the positive effect of training courses on communication skills.^[31,32]

Importantly, we analyzed comparisons between the healthy group and treatment group. These results revealed that health teams have higher IPC scores. This result may be explained by the fact that successful communication between health professionals is a prerequisite for collaborative practice. Our health system has defined many joint activities between health team members that they must perform together. Similar to our results, one study showed that a perceived lack of time and lack of tools summarizing options are serious barriers to sharing information between treatment groups.^[33]

Limitation and recommendation

The major limitation of our study was that perspectives from patients concerning health care team communication and collaboration were not included. In addition, the most impactful measure of successful collaboration in health care is improved patient outcomes, yet this study did not evaluate the impact of collaboration on health outcomes. In addition to the lack of standard definitions and measurement tools for interprofessional communication, limitations to our study include the random sampling of health centers. This sample, though representing many centers, may not be representative of all health centers in the Isfahan Islands. The sample sizes of each group were not large enough to compare the participants' scores according to their jobs. Future studies should compare people in health teams in terms of their different roles and jobs. Further research studies are needed on health team working experience and how disciplines compare to one another.

Our study has several strengths, notably our evaluation by a health team. The data of this study were collected from different jobs in the health team. In addition, a researcher-made questionnaire was created according to the culture and working conditions in Iran to measure interprofessional communication skills.

Conclusions

Collaboration between health care providers is necessary in any health care setting, since there is no single profession that can meet all patients' needs. Among the competencies of interprofessional collaboration, communication skills are perceived to be the key to effective interprofessional practice. Healthcare workers should be equipped with communication skills to work collaboratively across professional boundaries to improve the quality of healthcare, patient outcomes, and population health and to reduce healthcare costs.

Considering that an important principle in the principles of primary health care is the intersectoral approach, it seems necessary to pay attention to the communication skills between different professions to improve the status of interdisciplinary cooperation.

In fact, by identifying the effective factors on interprofessional communication skills, it is possible to provide educational interventions to improve the communication skills of health personnel.

According to the findings, the strongest predictor of communication behavior was self-efficacy. In addition, a negative relationship between barriers and communication behavior was seen.

Policymakers, who are responsible for the human resources training of the working in the health-related services (sanitary-therapeutic) sector, must design suitable training programs to improve the interprofessional communication skills.

An emphasis on interprofessional communication skills and teamwork should begin in the academic setting and be reinforced in both formal and hidden curricula. Further studies on large number of health worker of different background and in different countries are needed to confirm our results.

Abbreviations

IPCS: Interprofessional communication skills
CVR: Content Validity Ratio
CVI: Content Validity Index.

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Conflicts of interest

There are no conflicts of interest.

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