

# Routine programs of health care systems as an opportunity toward communication skills training for family physicians: A randomized field trial

Ahmad Reza Zamani, Narges Motamedi, Ziba Farajzadegan

Department of Community Medicine, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran

## ABSTRACT

**Background:** To have high-quality primary health care services, an adequate doctor–patient communication is necessary. Because of time restrictions and limited budget in health system, an effective, feasible, and continuous training approach is important. The aim of this study is to assess the appropriateness of a communication skills training program simultaneously with routine programs of health care system. **Materials and Methods:** It was a randomized field trial in two health network settings during 2013. Twenty-eight family physicians through simple random sampling and 140 patients through convenience sampling participated as intervention and control group. The physicians in the intervention group ( $n = 14$ ) attended six educational sessions, simultaneous organization meeting, with case discussion and peer education method. In both the groups, physicians completed communication skills knowledge and attitude questionnaires, and patients completed patient satisfaction of medical interview questionnaire at baseline, immediately after intervention, and four months postintervention. Physicians and health network administrators (stakeholders), completed a set of program evaluation forms. Descriptive statistics and Chi-square test,  $t$ -test, and repeated measure analysis of variance were used to analyze the data. **Results:** Use of routine program as a strategy of training was rated by stakeholders highly on “feasibility” (80.5%), “acceptability” (93.5%), “educational content and method appropriateness” (80.75%), and “ability to integrating in the health system programs” (approximate 60%). Significant improvements were found in physicians’ knowledge ( $P < 0.001$ ), attitude ( $P < 0.001$ ), and patients’ satisfaction ( $P = 0.002$ ) in intervention group. **Conclusions:** Communication skills training program, simultaneous organization meeting was successfully implemented and well received by stakeholders, without considering extra time and manpower. Therefore it can be a valuable opportunity toward communication skills training.

**Key words:** Case discussion, communication skills, opportunity finding, peer learning education, program evaluation

## INTRODUCTION

The importance of communication skills in medical education is obvious.<sup>[1]</sup> An effective and adequate relationship between

patient and physician during medical care is necessary for the provision of good care.<sup>[2,3]</sup> Although communication skills training is being developed in Medical schools, little attention is paid and less than 5% of the curriculum is allocated to communication skills education.<sup>[4-6]</sup> Besides, a vast majority of continuing medical education (CME) curriculum

**Address for correspondence:** Dr. Narges Motamedi, Department of Community Medicine, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran. E-mail: [motamedi.narges@yahoo.com](mailto:motamedi.narges@yahoo.com)

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focuses on technological and biomedical aspects of medical care.<sup>[7]</sup> Therefore, continuous training of communication skills through their practical years is necessary to refresh the previously acquired skills and to develop new techniques.<sup>[3]</sup>

Medicine in the context of health system, offering services by family physicians that provide primary health care services is an area of health care in which importance for good communication has received particular attention. Improving the quality of primary care is a key effort of health policy.<sup>[8]</sup> To improve clinical performance and the quality of primary health care services, an adequate doctor–patient communication is needed.<sup>[9]</sup> Many studies have confirmed that there is a strong association between the physician communication skills and the compliance and satisfaction of the patients.<sup>[10-12]</sup> Patient satisfaction is an important indicator for care quality in terms of acceptability and as a predictor of health outcome.<sup>[13-15]</sup>

The strategy of communication skills training programs curriculums can range from passive, didactic, large group presentations to highly interactive learning methods, such as workshops, small groups, and individualized training sessions.<sup>[9]</sup> The format of effective training programs are varied.<sup>[16]</sup> Some of them are workshops that take from 16 h (2- day) to 105 h (5 days a week for 3 weeks). Another format of training programs are video conference and small group session (e.g., three 2-h sessions in three successive weeks or eight 3-h sessions weekly).<sup>[17,18]</sup> Generally, weekly sessions take less time, in comparison with workshops.<sup>[19]</sup>

Selecting a strategy for communication skills training program depends on the implementation situation. In the context of health system, because family physicians often have limited time to follow extensive courses and because constraints such as time restrictions or a limited budget, an effective, feasible, affordable, and continuous training approach is important.<sup>[20]</sup> To finding an opportunity for training program, engaging stakeholders such as physicians and health care systems administrators is necessary. Based on their opinion, one of the routine programs that keep a minimum disruption of the daily activities of the health networks can be selected. Training program that is concurrent with selected routine program and learner participation in training program procedures can be overcome by extra time and labor.

The aim of this study is design and implementing the communication skills training program, for the physicians involved in health care centers as a family physician, simultaneously with the routine program and assess its feasibility, acceptability, educational content and method appropriateness, and ability to integrating into the health system programs based on stakeholder feedback and to examine the program's effect on physicians' communication skills, knowledge, and attitude and their patient satisfaction.

## MATERIALS AND METHODS

### Design

This study was a randomized field trial in the context of health care systems, which evaluated the effectiveness of a communication skills training program for family physicians.

The effects of the program on physicians' communication skills, knowledge and attitude, and their patient satisfaction were examined using data collected at three time points, baseline, immediately after the program (intervention takes 3 months), and 4 months after for long-term follow up, in two health networks, who were randomly assigned to the intervention or control during 2013. Feasibility, acceptability, educational content and method appropriateness, and ability to integrating it into the health system of the program was assessed based on program evaluation data obtained from stakeholders in the intervention group. The Medical Ethics Committee of Isfahan University of Medical science has approved the study design, protocols, and informed consent process (code of thesis was 3921173).

### Selecting a strategy for communication skills training

To find the opportunity for communication skills training, a meeting was arranged with health system administrators and the family physician who were stakeholders, to analyze the situation with brain storming method. Based on their opinion, one of the routine programs in health system is organization meetings that gather physicians together in order to coordinate and discuss about their responsibilities. This organization meeting was run every 2 weeks. Concurrent holding of organization meeting and communication skills training, is a fundamental approach for time saving.

Another issue that was brain storming in our meeting with stakeholders, was educational topics. We picked out some topics on communication problems, which family physicians challenge in their practice, based on their point of view and the Calgary Cambridge guideline. Thus, our intervention curriculum includes these 12 following topics:

Basic communication skills: Initiating the session – gathering information – physical examination – explanation and planning – patient education – and closing the session.

Advanced communication skills: Breaking bad news – taking a sexual history – communicating with patients from different cultures – communicating with children and adolescents – communicating with patient's family – challenging consultation – and communication with colleagues.

### Participants

Family physicians who work in the context of health system participated in the study. This trial was carried out in two health networks in Isfahan (Iran's third largest city, located in the center of Iran), Iran, which were selected randomly. Two selected

health networks were randomly assigned to the intervention or to the control group. To make sure that the changes were made by the intervention, a control group was chosen. And to prevent contamination, control and intervention groups were selected from separate health networks. The sample size of the trial was based on the main outcome, namely, patient satisfaction. The sample size was estimated to be 128 participants (64/group), with  $\alpha = 0.05$ ,  $d = 9.3$  and power = 80%. We considered 10% attrition rate, and the final sample size was estimated to be 140 patients (70/group). One physician per five patients (20% of the sample size) considered to estimate the number of physicians (14/group). From the available list (sampling frame) of the physicians who were employed in the intervention selected health network, 14 doctors were selected through a simple random sampling then sampling frame, in control group, 14 doctors were matched as demographic variables (age and gender) with intervention group. Five patients of any physician were selected through convenience sampling in their workplace (a total of 70 patients for each group). The inclusion criteria were physicians who were employed in the health network as a family physician. The exclusion criteria were half of session absence and incomplete questionnaire of 20%.

The stakeholders that participated to evaluate appropriateness of the method of intervention included physicians and health system administrators (directorate of the district health network, Health Deputy, mental health program coordinators, promotion and expansion of system coordinators).

### Measurement

Program Outcome Measures in physicians and patients: The physicians' communication skills, knowledge and attitude, and their patient satisfaction were considered as outputs of our study.

Physicians' knowledge was assessed by using an existing physicians' knowledge toward communication skills questionnaire that consisted of 12 items, which participants responded on a yes/no scale. A total score was calculated by summing correct answers. The validity and reliability of this questionnaire was demonstrated in several studies.<sup>[11,21]</sup> The Cronbach's alpha was 0.78 in the current sample.

Physicians' attitude toward communication skills questionnaire consisting of 10 Likert-type items (5-point scale) measured physician's attitude. In other studies, validity and reliability of this questionnaire was demonstrated.,<sup>[11,21]</sup> The Cronbach's alpha was 0.85 in the current sample.

Patient satisfaction of medical interview questioner<sup>[11]</sup> was constructed to measure their patient satisfaction that consisted of 24 items and each item was measured on a 5-point Likert scale. Total score were divided on 125 (up score =  $24 * 5 = 125$ ) to calculate percent(%) of patient satisfaction. This is a valid and reliable instrument base on Zamani *et al.*, study. The Cronbach's alpha was 0.90 in the current sample.

In all the questionnaires, higher total scores indicated better levels of understanding of each concept.

Evaluation Measures: To evaluate if the coordinating meeting was an opportunity for doctor–patient communication skills training, a Program Evaluation checklist (13 items) was administered to all stakeholders after intervention to assess the stakeholders' perception about the program. The checklist was based on the CDC program evaluation framework that<sup>[22,23]</sup> included feasibility items (4 items), acceptability items (3 items), ability to continuing and integrating into health system items (2 items), and content and implementation method appropriateness items (4 items); each item was measured on a 2-point scale (1 = agree to 0 = disagree). Percentage of positive responses (“agree”) was examined for each item. The total rate of each domain was the average score of their items. Stakeholders who were participating physicians and health system administrators completed this checklist at the end of the training program.

### Intervention program

The communication skills training program was based on group discussion in health system settings.

The intervention program consists of six sessions (two topics/sessions) with 2-week intervals at the time of organization meetings. Each session takes 2 h. Three separate guidebooks for focal points, leaders, and learners were developed. The contents of the books were based on guidebooks on communication skills<sup>[24-26]</sup> and expert opinion. The training method was case discussion. The focal points (mental health program coordinator employed in health system) were trained about method of program by the researcher. He handled the program. Each physician chose one topic according to his interest, and then he designed cases that express communication problem of topic through his experience. For each session, focal point asked two physicians to participate in the program as a session leader. The leader raised the case of the considered topic in 10 min, then other participants discussed about solving the problem in 30 min and finally leader presented the guideline of the considered topic from leader guidebook in 20 min. In this way, each participant directly learned one topic and indirectly learned other topics through peer education.

### Data analysis

All the analyses were performed using SPSS version 20. Findings are shown as relative frequencies, mean, and standard deviation. For statistical analysis, Chi-square test, *t*-test, and repeated measure analysis of variance were used. The significance level was  $P < 0.05$ .

## RESULTS

### Program effects on physicians and patients

From the list of two health network physicians, 28 doctors (14/group) were selected. Table 1 shows the baseline characteristics of the physicians in both the

groups. Five patients of each physician participated in the study before and after intervention (70/group). Physicians' knowledge and attitude scale, before and after intervention were summarized in Table 2. Knowledge and attitudes of physicians, in the intervention group, were significantly increased after intervention ( $P \leq 0.01$  and  $<0.001$ , respectively). These scales were not significantly changed during 4-month follow up (knowledge  $P = 0.75$  and attitude  $P = 0.2$ ). Physician's knowledge and attitude scale in the control group did not significantly change [Table 2]. In the intervention group, before program implementation, patients were 71.48% satisfied with doctors' communication skills and increased right after intervention ( $P = 0.004$ ). 4 months after intervention patients' satisfaction was significantly decreased from right after the intervention ( $P = 0.027$ ) but still significantly higher than base (before intervention) ( $P = 0.005$ ). In the control group, baseline patients' satisfaction on doctors' communication skills was 73.48% and it was not significantly different from two other followed-up measurements [Figure 1].

**Table 1: Physicians characteristics by intervention arm**

	Control	Intervention	P value
Mean age (SD)	38.23 (4.10)	37.53 (5.66)	0.72
Gender			
Male	20.1%	20.1%	0.67
Female	79.9%	79.9%	
Mean years of practical experience (SD)	5.76 (5)	7.15 (6.61)	0.55
History of training courses			
Yes	7.7%	7.7%	0.76
No	92.3%	92.3%	

SD=Standard deviation

**Table 2: Mean scores of physicians' knowledge and attitude and mean percentage of patient satisfaction by intervention arm**

	Mean (SD)		P value
	Control	Intervention	
Knowledge			
Before	8.23 (1.48)	7.76 (1.36)	0.41
Right after	7.07 (2.06)	9.3 (1.6)	0.005
After 4 months	7.46 (1.94)	9.23 (1.16)	0.01
P value	0.31	0.01	
Attitude			
Before	32 (4.6)	34.69 (3.14)	0.094
Right after	31.92 (4.7)	41 (5.13)	<0.001
After 4 months	33.07 (3.8)	40.23 (4.2)	<0.001
P value	0.49	<0.001	
Patient satisfaction			
Before	73.48% (10.34)	71.48% (7.92)	0.218
Right after	74.26% (11.59)	80.9% (7.05)	<0.001
After 4 months	72.69% (12.06)	77.36% (11.24)	<0.001
P value	0.613	<0.001	

SD=Standard deviation

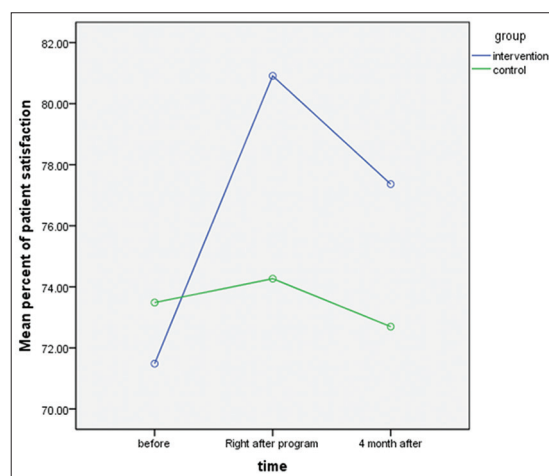
### Program evaluation

From 26 stakeholders, 14 were physicians who participated in training program, 12 were health system administrators. Table 3 shows details of rates of agreement on program evaluation items based on stakeholder feedback. Physicians rates of agreement versus personnel rates of agreement on program evaluation items were not significantly different ( $P > 0.05$ ). In general, 80.5% of them agreed, that use of routine program as a strategy for training was "feasible" and 93.5% of them agreed that this method is "acceptable". Evaluation of content and procedures appropriateness showed that on average, 80.75% of stakeholders agreed that "the educational content and procedures were appropriate," 61% of stakeholders agreed that "this program can be continued and sustained in the health network program," and 57.7% agreed that "integrating this program to health system was feasible."

## DISCUSSION

This study provides an experimental evidence that this communication skills training curriculum is well received by physicians and health system administrators and is beneficial for physicians and patients, which gives an acceptable evidence as a competency of a program to continue and integrate into a health system. These findings support the routine program as an opportunity for training communication skills. Implementation of training curriculum based on peer education and through the weekly routine coordination meetings can improve knowledge, attitude, and patients' satisfaction with doctors' communication skills in the setting of health care center physicians, as a family physician.

An essential characteristic of this intervention is the strategy of implementation that is based on the number of meetings of physicians in the health network. This method is to hold a few 2-h educational meetings in which physicians discuss about communication problems. Time limitation and human resources restriction, which we overcome, are two major restrictions in the health systems. The advantage of this



**Figure 1: Mean percent of patient satisfaction by intervention arm over time**

**Table 3: Rates of agreement on program evaluation items**

	Physicians (14)		Administrators (12)		P value	Total 26	
	%	n	%	n		%	n
<b>Feasibility items</b>							
The program procedures were practical	78.5	11	83.3	10	0.23	80.7	21
The program would keep disruption of health system daily activities to a minimum	71.4	10	75	9	0.31	73	19
The political interests and needs of various groups in planning the program were considered	71.4	10	83.3	10	0.08	79.9	20
The cost of technical resources and time was tolerable	92.9	13	83.3	10	0.11	88.5	23
Average	78.5		81.2			80.5	
<b>Acceptability items</b>							
I am satisfied with this program	92.9	13	91.6	11	0.67	92.3	24
The program was fun	100	14	91.6	11	0.45	96.1	25
I would recommend this program to others	92.9	13	91.6	11	0.67	92.3	24
Average	95.3		91.6			93.5	
<b>Content and procedures appropriateness</b>							
Timeline for the program was appropriate	71.4	10	83.3	10	0.64	76.9	20
Educational tool was appropriate	71.4	10	75	9	0.76	73	19
Educational content was appropriate	92.9	13	83.3	10	0.5	88.5	23
Educational method was appropriate (case discussion and peer learning)	85.7	12	83.3	10	0.87	84.6	22
Average	80.3		81.2			80.7	
<b>Integrating in the health system programs</b>							
Continuation of this program in the health system was possible	57.1	8	66.6	8		61.5	16
Integrating this program to health system was feasible	57.1	8	58.3	7		57.7	15
Average	57.1		62.5			59.6	

method is that it can be proceeded without an extra time and excess manpower, and it is an important aspect of feasibility. In support of this fact, the result of this study shows 92.9% of physicians and 83.3% of administrators perceive the costs of technical resources and time spent are reasonable. Also, an approximate two thirds of stakeholders agree that the program would suffer a minimum disruption of the daily activities of the health networks. Other systematic reviews have also shown that weekly sessions take less time in comparison with workshops.<sup>[18,19]</sup> Approximately, 70% of physicians and 80% of personnel expressed that their opinions and needs in planning the program have been considered and no political conflict is claimed.

Most of the physicians who participated in the study reported satisfaction, enjoyment, and usefulness of the program. After some business activities, this program is a good opportunity to have a good time with colleagues. On the other hand, because physicians engage in the job as facilitators and select the educational topics based on their interest, they feel they belong to the program. The similarities between leaders and learners have been considered the core of a peer education program and pivotal in increasing the learners' receptiveness of the message being delivered.<sup>[23]</sup> Preparing for leadership and assuming leadership roles may also lead to positive outcomes in peer leaders, and they develop more knowledge and positive attitudes due to their contribution. The benefits of peer education are in concurrence with other studies.<sup>[27,28]</sup>

Among the assessing items of the appropriateness of the methodology and content of education, the maximum agreement is on educational content appropriateness maybe because of the needs and interest of the contributors in choosing the subjects. In addition, most of the stakeholders are satisfied with scheduling and educational tools that include guidebooks for focal points, facilitators, and learners. An approximate 85% of the participants were satisfied with case discussion as an educational method because they can discuss about their challenges and they are not only passive listeners. The effectiveness of group discussion training method in doctors' communication skills is supported by several studies.<sup>[12,14,27-29]</sup> Another advantage of this study is the use of peer education that reduces the costs for health system and is pleasurable for learners because each learner experiences leadership and improves interpersonal and self-presentation skills and group work contribution.<sup>[30]</sup>

Agreement rate for program continuation and integration items are approximately 60%, which are least receptive compared with other items. Sustenance is one of the important part of such training program and stakeholders may underestimate its importance. Perhaps due to the comprehensiveness of the training program, they assume it is sufficient.

This study reveals that physicians and their patients can benefit from the program. Physicians' knowledge and attitude

have significantly increased after the intervention and kept fixed during follow up period. A study in Norway also shows similar results.<sup>[25]</sup> Patients' satisfaction with doctors' communication skills increased approximately by 10% after the intervention that is statistically significant, but 4 months after intervention, patients' satisfaction decreased slowly, although it is still more than patients' satisfaction before program implementation. A study in the United Kingdom, which reports the impact of communication skills training during 12-month follow up reveals that clinicians had integrated key communication skills into clinical practice. However, some aspects of communication skills such as expressions of empathy were declined.<sup>[31,32]</sup> It is noteworthy that offering physicians short-term training without integrating it into the system might not be sufficient to meet a constant satisfaction improvement of the patients through the physicians' communication skills and needs some refreshing meetings to create long-term sustainability.

The limitations of this study are that the benefits of the program to patients must be interpreted cautiously. There is an important question to be answered: Whether the modest changes (10%) in patients' satisfaction are clinically meaningful. Future research is needed to answer this question and determine the clinical significance of the magnitude of observed changes by examining its associations with relevant clinical indices such as patients' compliance. Furthermore, researchers suggest future research to study other opportunities for continuous training and cost-effectiveness analyses of different methods.

## CONCLUSION

To save time and human resources, policy makers can use routine program as an opportunity toward continuous education to health professionals, such as doctor-patient communication skills training.

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### Conflicts of interest

There are no conflicts of interest.

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