Improvement of Communication Skills in Clinical Education

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Abstract

The purpose of this study was to identify the correlation between medical students' communication skills awareness and performance in clinical education and to determine means to improve communication. A total of 36 fourth-year medical students were enrolled in this study and were surveyed concerning communication skills during two clinical performance examinations. The survey included 20 items in four categories: beginning an interview (greeting, identification, introduction, attention, and chief complaint), gathering information (open question, reflection, facilitation, clarification, and summarizing), giving information (discovering the patient's understanding, empathy, easy terms, checking of understanding, and giving opportunities), and non-verbal communication (neat features, listening, eye contact, nodding, and silence). The students were educated repeatedly about their communication skills for 8 months in a clinical clerkship between two examinations. All items showed the significant correlations between communication skills awareness and performance, except for greeting and summarizing in the first examination and neat feature and silence in the second. Communication skills awareness and performance were significantly improved in terms of attention, reflection, summarizing, discovering the patient's understanding, empathy, checking understanding, and silence. This study demonstrated that medical students' awareness of communication skills was mostly correlated with performance and communication awareness and performance were improved following clinical education.

Keywords: communication skills, performance, medical education, awareness

1. Introduction

Communication between healthcare providers and patients in a clinical situation is essential for gathering important information, making proper decisions, and giving helpful messages. Providing education concerning patient-centered communication skills can increase patient knowledge and self-efficacy and may improve patient self-care through improved communication during the patient encounter. Further, teaching communication skills can improve biological outcomes, quality of life, and survival [1].

However, a common medical school clinical education experience consist of a situation in which they encounter the patient for the first time and they find that they do not know how to cope with the patients. They feel like they are left all alone and to try to do the best they can. So, young doctors have complained about their lack of communication training during medical school. In addition, it is well established that patients complain more often about poor communication than about inadequate treatment [2].

Most medical school and nursing colleges teach communication skills by various methods because of the importance of good clinical communication, but there are questions regarding

how these communication skills transfer from communication training to actual patient care [3].

This study's purpose was to identify the correlation between medical students' communication skills awareness and performance and to determine communication improvement following their clinical education.

2. Methods

2.1. Subjects

The subjects were 36 fourth-year medical students, who had their first clinical performance examination (CPX) right before their fourth year and another CPX eight months later.

2.2. Procedure

These students reported their communication skills awareness and performance in each CPX, according to the questionnaire's instructions. Clinical education of communication skills was performed in several clinical clerkships after the first CPX. All 36 medical students had their second CPX after eight months, when their clinical clerkship was complete. Communication skills education included lectures on core items according to the medical communication process, watching communication videos, and role playing.

2.3. Instruments

The medical education communication skills questionnaires consisted of 20 items in four categories: beginning the interview (greeting, identification, introduction, attention, and chief complaint), gathering information (open question, reflection, facilitation, clarification, and summarizing), giving information (discovering patient's understanding, empathy, easy terms, checking of understanding, and giving opportunities), and non-verbal communication (neat feature, listening, eye contact, nodding, and silence). The definitions and examples of the 20 items in the four categories are listed in Table 1. Each question was rated along a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Table 1. Description of Items and Definitions in Communication Skills

Categories	Items	Definitions	Examples
Beginning the interview	Greeting	Expressing a greeting upon meeting patients.	Hello, Good morning.
	Identification	The act of identifying patients.	Are you Mr. Jones?
	Introduction	Formally making you known to the patients.	I'm Dr. Kim, one of emergency physicians.
	Attention	General interest that leads patients to feel comfort.	I'm sorry that you waited so long.
	Chief complaint	Asking patients a cause of complaining.	Could you please tell me what problem brought you to hospital?
Gathering information	Open question	Assessment of a wide range of issues, concerns, or feelings.	Would you tell me more about it?
	Reflection	Support by listening to the patient.	Right. ; That should not be easy.

	Facilitation	Helping patients to talk as fully as possible about their problems.	Yes, I understand. Please continue.
	Clarification	Asking patients to clarify something they have said.	Please tell me exactly when your abdominal pain started.
	Summarizing	Summarizing the patient's problems.	You've told me about -. Is that right?
Giving information	Discovering the patient's understanding	Assessing the patient's understanding of the condition.	Could you tell me what you think is causing your symptoms?
	Empathy	Support by showing an understanding of the patient's emotional or physical state.	I understand that you are distressed.
	Easy terms	Using short words and short sentences and avoiding medical jargon.	-
	Checking of understanding	Checking the patient's understanding of what has been said.	Would you like to go over what we have said?
	Giving opportunities	Giving opportunities for the patient to ask another questions.	Do you have another question ?
Non-verbal communication	Neat feature	Clean appearance.	-
	Listening	Receiving the message and demonstrating that you are paying attention and trying to understand.	-
	Eye contact	Maintaining eye contact properly.	-
	Nodding	Expressing that you understand by nodding.	-
	Silence	Give the patient time to reflect on what has been said.	-

2.4. Data Analysis

Data processing was performed using the SPSS 14.0 software package. Scores of each item among the communication skills were summarized as mean ± standard deviation. The correlation between communication skills awareness and performance in the first and second CPX were evaluated with Pearson's correlation analyses. In addition, to identify the improvement of communication skills awareness and performance, the results of each item in the first and second CPX were compared with t-tests. The statistical significance threshold was 0.05.

3. Results

3.1. Communication Skills Awareness and Performance

For communication skills awareness in the first CPX, chief complaint score was the highest: 4.94 ± 0.23. In addition, greeting, introduction, and listening showed the next highest scores: 4.92 ± 0.28, 4.89 ± 0.40, and 4.89 ± 0.40, respectively, as shown in Table 2. However, discovering the patient's understanding received the lowest score: 3.31 ± 1.14, and empathy, checking of understanding, and facilitation were also relatively lower: 3.42 ± 1.23, 3.58 ± 1.18, and 3.92 ± 0.94, respectively.

For communication skills performance in the first CPX, chief complaint showed the highest score: 4.94 ± 0.23. In addition, greeting, introduction, and giving opportunities showed the next highest scores: 4.92 ± 0.28, 4.83 ± 0.51, and 4.56 ± 0.84, respectively. However, discovering the patient's understanding was the lowest score: 2.36 ± 1.15, and empathy, checking of understanding, and facilitation were relatively lower: 2.72 ± 1.26, 2.75 ± 1.32, and 2.89 ± 0.92, respectively.

For communication skills awareness in the second CPX, the chief complaint and the giving opportunities scores were the highest: 4.92 ± 0.37. Greeting and listening showed the next highest score: 4.89 ± 0.40. However, discovering the patient's understanding had the lowest score: 4.03 ± 1.18, and facilitation, empathy, and clarification were relatively low: 4.19 ± 1.06, 4.39 ± 0.90, and 4.56 ± 0.88, respectively.

For communication skills performance in the second CPX, introduction showed the highest score: 4.92 ± 0.37. In addition, greeting, chief complaint, and giving opportunities showed the next highest scores: 4.89 ± 0.40, 4.83 ± 0.51, and 4.75 ± 0.55, respectively. However, discovering the patient's understanding had the lowest score: 2.97 ± 1.13, and facilitation, empathy, and silence were relatively low: 3.25 ± 1.34, 3.31 ± 1.17, and 3.56 ± 1.05, respectively.

3.2. Correlation between Communication Skills Awareness and Performance

Awareness of greeting (r = 0.273, p = 0.108) and summarizing (r = 0.251, p = 0.140) were not correlated with performance in the first CPX, as shown in Table 2.

The other items, including identification (r = 0.712, p < 0.001), introduction (r = 0.613, p < 0.001), attention (r = 0.620, p < 0.001), chief complaint (r = 1.000, p < 0.001), open question (r = 0.496, p = 0.002), reflection (r = 0.591, p < 0.001), facilitation (r = 0.420, p = 0.011), clarification (r = 0.492, p = 0.002), discovering the patient's understanding (r = 0.566, p < 0.001), empathy (r = 0.781, p < 0.001), easy terms (r = 0.489, p = 0.002), checking of understanding (r = 0.666, p < 0.001), giving opportunities (r = 0.672, p < 0.001), neat features (r = 0.346, p = 0.039), listening (r = 0.373, p = 0.025), eye contact (r = 0.407, p = 0.014), nodding (r = 0.600, p < 0.001), and silence (r = 0.721, p < 0.001) showed significant correlations between awareness and performance of communication skills.

Table 2. Correlation between Communication Skills Awareness and Performance in the First Clinical Performance Examination

		Awareness		Performance		r	p
		mean	SD	mean	SD		
Beginning the interview	Greeting	4.92	0.28	4.92	0.28	.273	.108
	Identification	4.47	1.00	4.11	1.37	.712	<.001
	Introduction	4.89	0.40	4.83	0.51	.613	<.001
	Attention	4.25	0.97	3.67	1.29	.620	<.001
	Chief complaint	4.94	0.23	4.94	0.23	1.000	<.001
Gathering information	Open question	4.78	0.48	4.33	0.79	.496	.002
	Reflection	4.58	0.65	3.67	1.04	.591	<.001
	Facilitation	3.92	0.94	2.89	0.92	.420	.011
	Clarification	4.39	0.73	3.44	0.94	.492	.002
	Summarizing	4.53	0.56	3.56	1.11	.251	.140
Giving information	Discovering the patient's understanding	3.31	1.14	2.36	1.15	.566	<.001
	Empathy	3.42	1.23	2.72	1.26	.781	<.001
	Easy terms	4.44	0.73	3.69	0.79	.489	.002

	Checking of understanding	3.58	1.18	2.75	1.32	.666	<.001
	Giving opportunities	4.75	0.55	4.56	0.84	.672	<.001
Non-verbal communication	Neat feature	4.86	0.42	4.17	0.94	.346	.039
	Listening	4.89	0.40	4.25	0.77	.373	.025
	Eye contact	4.86	0.42	4.31	0.75	.407	.014
	Nodding	4.67	0.79	3.97	0.94	.600	<.001
	Silence	4.00	1.22	3.06	1.17	.721	<.001

In the second CPX, greeting ($r = 1.000$, $p < 0.001$), identification ($r = 0.612$, $p < 0.001$), introduction ($r = 0.730$, $p < 0.001$), attention ($r = 0.647$, $p < 0.001$), chief complaint ($r = 0.688$, $p < 0.001$), open question ($r = 0.653$, $p < 0.001$), reflection ($r = 0.629$, $p < 0.001$), facilitation ($r = 0.707$, $p < 0.001$), clarification ($r = 0.785$, $p < 0.001$), summarizing ($r = 0.473$, $p = 0.004$), discovering the patient's understanding ($r = 0.661$, $p < 0.001$), empathy ($r = 0.697$, $p < 0.001$), easy terms ($r = 0.465$, $p = 0.004$), checking of understanding ($r = 0.652$, $p < 0.001$), giving opportunities ($r = 0.595$, $p < 0.001$), listening ($r = 0.382$, $p = 0.021$), eye contact ($r = 0.388$, $p = 0.019$), and nodding ($r = 0.336$, $p < 0.045$) showed significant correlations between communication skills awareness and performance.

Both neat feature ($r = 0.146$, $p = 0.394$) and silence ($r = 0.272$, $p = 0.109$) awareness were not correlated with performance (Table 3).

Table 3. Correlation between Communication Skills Awareness and Performance in the Second Clinical Performance Examination

		Awareness		Performance		r	p
		mean	SD	mean	SD		
Beginning the interview	Greeting	4.89	0.40	4.89	0.40	1.000	<.001
	Identification	4.83	0.51	4.58	0.97	.612	<.001
	Introduction	4.86	0.49	4.92	0.37	.730	<.001
	Attention	4.83	0.51	4.64	0.68	.647	<.001
	Chief complaint	4.92	0.37	4.83	0.51	.688	<.001
Gathering information	Open question	4.75	0.60	4.14	0.96	.653	<.001
	Reflection	4.86	0.42	4.44	0.77	.629	<.001
	Facilitation	4.19	1.06	3.25	1.34	.707	<.001
	Clarification	4.56	0.88	3.92	1.27	.785	<.001
	Summarizing	4.86	0.42	4.31	0.79	.473	.004
Giving information	Discovering the patient's understanding	4.03	1.18	2.97	1.13	.661	<.001
	Empathy	4.39	0.90	3.31	1.17	.697	<.001
	Easy terms	4.72	0.57	3.97	1.06	.465	.004
	Checking of understanding	4.81	0.52	4.28	0.91	.652	<.001
	Giving opportunities	4.92	0.37	4.75	0.55	.595	<.001
Non-verbal communication	Neat feature	4.83	0.51	3.89	1.28	.146	.394
	Listening	4.89	0.40	4.36	0.83	.382	.021
	Eye contact	4.86	0.42	4.36	0.83	.388	.019
	Nodding	4.83	0.45	4.06	1.01	.336	.045
	Silence	4.58	0.73	3.56	1.05	.272	.109

3.3. Improvement of Communication Skills Awareness and Performance

Communication skills awareness was significantly improved in the second CPX in terms of attention (t = -3.205, p = 0.002), reflection (t = -2.149, p = 0.036), summarizing (t = -2.847, p = 0.006), discovering the patient's understanding (t = -2.636, p = 0.010), empathy (t = -3.827, p < 0.001), checking of understanding (t = -5.678, p < 0.001), and silence (t = -2.462, p = 0.017), compared with the first CPX, as shown in Table 4.

In addition, awareness in identification (t = -.1.933 p = 0.059), facilitation (t = -1.175, p = 0.244), clarification (t = -0.878, p = 0.383), easy terms (t = -1.797, p = 0.077), giving opportunities (t = -1.503, p = 0.138), and nodding (t = -1.099, p = 0.277) showed a tendency toward improvement, but this was not significant.

Table 4. Improvement of Communication Skills Awareness

		first CPX		second CPX		t	P
		mean	SD	mean	SD		
Beginning the interview	Greeting	4.92	0.28	4.89	0.40	0.342	.733
	Identification	4.47	1.00	4.83	0.51	-1.933	.059
	Introduction	4.89	0.40	4.86	0.49	0.265	.792
	Attention	4.25	0.97	4.83	0.51	-3.205	.002
	Chief complaint	4.94	0.23	4.92	0.37	0.383	.703
Gathering information	Open question	4.78	0.48	4.75	0.60	0.215	.830
	Reflection	4.58	0.65	4.86	0.42	-2.149	.036
	Facilitation	3.92	0.94	4.19	1.06	-1.175	.244
	Clarification	4.39	0.73	4.56	0.88	-0.878	.383
	Summarizing	4.53	0.56	4.86	0.42	-2.847	.006
Giving information	Discovering the patient's understanding	3.31	1.14	4.03	1.18	-2.636	.010
	Empathy	3.42	1.23	4.39	0.90	-3.827	<.001
	Easy terms	4.44	0.73	4.72	0.57	-1.797	.077
	Checking of understanding	3.58	1.18	4.81	0.52	-5.678	<.001
	Giving opportunities	4.75	0.55	4.92	0.37	-1.503	.138
Non-verbal communication	Neat feature	4.86	0.42	4.83	0.51	0.252	.802
	Listening	4.89	0.40	4.89	0.40	0.000	1.000
	Eye contact	4.86	0.42	4.86	0.42	0.000	1.000
	Nodding	4.67	0.79	4.83	0.45	-1.099	.277
	Silence	4.00	1.22	4.58	0.73	-2.462	.017

Communication skills performance was significantly improved in terms of attention (t = -4.004, p < 0.001), reflection (t = -3.598, p = 0.001), summarizing (t = -3.314, p = 0.001), discovering the patient's understanding (t = -2.271, p = 0.026), empathy (t = -2.042, p = 0.045), and checking of understanding (t = -5.717, p < 0.001).

In addition, performance in identification (t = -1.691, p = 0.096), introduction (t = -0.798, p = 0.428), facilitation (t = -1.334, p = 0.187), clarification (t = -1.791, p = 0.078), giving opportunities (t = -1.156, p = 0.252), listening (t = -0.588, p = 0.559), eye contact (t = -0.297, p = 0.767), nodding (t = -0.362, p = 0.719), and silence (t = -1.905, p = 0.061) tended to be improved, but these effects were not significant (Table 5).

Table 5. Improvement of Communication Skills Performance

		first CPX		second CPX		t	P
		mean	SD	mean	SD		
Beginning the interview	Greeting	4.92	0.28	4.89	0.40	0.342	.733
	Identification	4.11	1.37	4.58	0.97	-1.691	.096
	Introduction	4.83	0.51	4.92	0.37	-0.798	.428
	Attention	3.67	1.29	4.64	0.68	-4.004	<.001
	Chief complaint	4.94	0.23	4.83	0.51	1.195	.238
Gathering information	Open question	4.33	0.79	4.14	0.96	0.937	.352
	Reflection	3.67	1.04	4.44	0.77	-3.598	.001
	Facilitation	2.89	0.92	3.25	1.34	-1.334	.187
	Clarification	3.44	0.94	3.92	1.27	-1.791	.078
	Summarizing	3.56	1.11	4.31	0.79	-3.314	.001
Giving information	Discovering the patient's understanding	2.36	1.15	2.97	1.13	-2.271	.026
	Empathy	2.72	1.26	3.31	1.17	-2.042	.045
	Easy terms	3.69	0.79	3.97	1.06	-1.267	.210
	Checking of understanding	2.75	1.32	4.28	0.91	-5.717	<.001
	Giving opportunities	4.56	0.84	4.75	0.55	-1.156	.252
Non-verbal communication	Neat feature	4.17	0.94	3.89	1.28	1.048	.298
	Listening	4.25	0.77	4.36	0.83	-0.588	.559
	Eye contact	4.31	0.75	4.36	0.83	-0.297	.767
	Nodding	3.97	0.94	4.06	1.01	-0.362	.719
	Silence	3.06	1.17	3.56	1.05	-1.905	.061

4. Discussion

Inappropriate communication with patients can lead to negative prognosis because distorted information about patients can cause the physician to make incorrect decisions regarding treatment plans and may generate overall negative responses to patient care. Especially in patients with cancer or severe diseases, with whom healthcare providers have an especially hard time generating helpful interpersonal relationships with the usual communication skills, adapting to proper medical communication skills can make healthcare providers more aware and understanding of a patient's state, enabling them to provide comforting empathy to their patients and to perform harmonious patient care.

Medical communication usually consists of the phases of beginning an interview, gathering information, and giving information, accompanied by non-verbal communication in the total communication process. Communication skills at the beginning of an interview include greeting, identification, introduction, and attention. The communication skills of gathering information include open and closed questions, reflection, facilitation, clarification, summarizing, and silence. The communication skills of giving information include finding out what the patient thinks, expressing empathy to the patient, explanation medical situations with easy terms, checking for patient's understanding, and giving opportunities. In addition, the non-verbal communication skills include maintaining neat features, proper listening, adequate eye contact, and appropriate nodding [4].

We performed communication skills assessments during two clinical performance examinations of medical students. The Objective Structured Clinical Examination was the most commonly used method of assessment, and the average number of assessments per year was 2.4 in UK medical schools [5].

Clinical education focusing on medical communication seems to have positive effects in most medical and nursing schools. In a systematic review of 47 studies on communication training for oncology health professionals, all the interventions demonstrated modest improvements in communication skills, and positive attitudes and beliefs help maintain skills over time in clinical practice and aid in the effective handling of emotional situations [6]. In addition, students' communication skills were improved with more practice and longer training, especially with regard to opening the interview, expressing empathy, understanding the patient's perspective, and preparing for the physical examination in another study of medical students who have completed their third year clerkship [7].

This study also showed that clinical education of communication skills improved communication skills awareness and performance in attention, reflection, summarizing, discovering the patient's understanding, enhancing empathy, checking understanding, and silence after an eight-month clerkship. This educational effect of communication skill can be maintained for long periods of time for some items. One study in which the correlation between medical students' seven communication and interpersonal skills test scores and the scores of these same individuals during their residencies three years later showed the significant correlation for explaining more explicably [8].

However, the effects of education in communication skills differed substantially across situations and was questionable whether communication skills education benefits could be transferred to actual medical communication with patients in order to make meaningful outcomes. One study performed to identify the correlation between communication skills for emotional empathy and academic achievement showed that male students have higher scores than females for all communication skills except verbal expression empathy, and that the correlation between communication skills and academic achievement varied greatly according to clinical performance examination subjects [9]. In addition, among internal medicine residents and nurse practitioner trainees, simulation-based communication training, compared with usual education, did not improve communication quality and patient care, and was associated with a small increase in patients' depressive symptoms [3].

The significant correlation between communication skills awareness and performance suggests that awareness improvement through communication skills education could also improve medical student communication performance [10]. In this study, both communication skills awareness and performance were improved after eight months of clinical education.

However, it is necessary to clarify whether communication skills education can improve communication with real patients in the future. Communication is a powerful therapeutic tool and nursing skill necessary for reaching positive health goals. Education that involves only the transfer of knowledge not only is ineffective but also fails to invoke the conditions whereby this knowledge is converted into a skill [11]. Although patients highly rated medical graduates' communication skills, patients' ages and educational levels were significantly associated with the rating level. Patients who were older than 45 years gave higher scores than did younger ones, and patients with higher education reported much lower scores than did those with less education [12].

Therefore, it is necessary to make an effort to find effective methods of teaching communication skills in a clinical situation, considering the effect of communication skills education and patients' assessment.

5. Conclusion

This study demonstrated that medical students' awareness of communication skills was correlated significantly with performance. In addition, communication awareness and performance were improved following clinical education.

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