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# Residents' Communication Skills Evaluation by OSCE: What Changes Should be Done in Educational System?

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**Background:** The doubt in re-allocating some of current resources from holding communication skills workshops to others, we conducted this study to answer: What and how were the communication skills of residents in medical faculty? Were any changes needed to be done in educational system?

**Objectives:** The aim of this study was to find out that, what and how were the communication skills of residents in medical faculty? Were any changes needed to be done in educational system?

**Materials and Methods:** We designed one OSCE station with a standard patient to evaluate 53 Internal medicine residents' communication skills in 2010. We had videotaping with an undercover cam inside a monken to record the residents' interview with SP, by written permission of exam directors. We carefully and repeatedly reviewed the videotapes, analyzed the researcher made validated questionnaires' data using SPSS.16.We also gave detailed feed back to the residents.

**Results:** The mean of Residents' total score with a normal distribution was 23.62 ± 2.46. Independent- samples T-test [sig. (2-tailed: 0.441)] and Test statistics of Kruskal Wallis test (sig: 0.314) indicated none- significant difference in residents' total score in different gender and ages. Post Hoc comparisons by using the method of Tukey HSD in One- Way ANOVA indicated that educational impacts of communication skills workshops are not lasting for up to one year.

**Conclusions:** This study makes suggestions to address and overcome the still existing problem of residents' poor communication skills.

*Keywords:* Communication skills; OSCE; Resident; Evaluation

## 1. Background

Interpersonal and communication skills is one of the six required competencies that the Accreditation Council on Graduate Medical Education (ACGME) expects residents to obtain during their residency program. According to the ACGME outcome project, residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals (1, 2). Assessment of communication skills has been started by the National Board of Medical Examiners (NBME) from 2004 (3) hence, the majority of today's medical teachers strongly believe that effective communication skills have always enhanced favorable health outcomes in communities (4, 5). However; most of them were not previously exposed to an organized, skill-based communication curriculum and may not be a good role model for their medical students (5).

The literature review reveals that the objective structured clinical examination (OSCE) has been increasingly most acceptable format in assessing objective clinical competencies in medical education, as well as examining some isolated skills, and providing immediate feedback (4). A systematic review on 109 published articles by Hauer and colleagues suggests that students learn behavior change consultation through active, realistic career and feedback systems within authentic clinical work settings (6). Attending the majority of education board meetings in medical faculty, we deeply sensed that faculty members are not sure whether continue holding the workshops on the topic of communication skills for new residents like previous years or not. According to that board, it was maybe the time for re-allotting the majority of resources for communication skills workshops to other im-

portant ones which were in demand like the workshops for managing complex documentation requirements in order to improve quality and safety of the services when there is no increase in time or compensation. The impact of such doubt on taking every immediate decision by the authorities was so strong that urged us to conduct this study to answer the two research questions. First; what and how were the communication skills of residents in medical faculty? Second; were any changes needed to be done in educational system?

Hence, we decided to evaluate residents' communication skills on an OSCE station to answer the research questions, and give feedback to residents. Although it was better to judge on residents' communication skills by some specially designed OSCE stations, however; designing multiple OSCE stations to assess communication skills was not affordable and reasonable. Because, no formal course had been previously developed and scheduled to teach those skills in the university. Hence, residents' annual summative exam was an available option for us, of course with having in mind that it was necessary to achieve high content validity in a final exam. That was why we assessed residents' communication skills in only one OSCE station.

## 2. Objectives

The aim of this study was to find out that, what and how were the communication skills of residents in medical faculty? Were any changes needed to be done in educational system?

## 3. Materials and Methods

We conducted this study in the skill lab of the medical faculty in 2010. Our main objectives were evaluating residents' communication skills and giving feedback both to residents and educational authorities. We were given permission to full access to complete documentations of six-hour communication skills workshops which were regularly held for newly admitted residents of different medical disciplines at skill labs of medical faculty every summer, one month before commencing professional residency program over recent 5 years. We reviewed all the documents. Common core skills taught in these 6-hour workshops were repeated over past 5 years included as follows: initiating the session; gathering the information; building relationships; facilitating patients' involvement; explaining and planning; and closing the session. A psychologist and an expert in medical education had taught in those workshops each year. Student-centered lectures were their main teaching method. It was combined with practical work to review a simulated physician's communication skills in a structured and pre-designed role playing.

The content of those workshops had been originated from different sources, including a literature review (1-3, 5, 7), surveys of physicians, advices from medical education masters and comments from communication experts. The initial version of the research questionnaire was developed with 15 items. Eleven experts in the field of medical education did qualitative evaluation of the questionnaire .We received their feedback containing necessary corrections regarding grammar, wording, item allocation, and scaling of the items. Content Validity Ratio (CVR) and the Content Validity Index (CVI) were used to evaluate quantitative content validity of the questionnaire. CVR was rated based on a three-part scale, and the CVI score related to simplicity, relevance and clarity of each item was calculated on a four-part Likert scale. CVR and the CVI scores for whole questionnaire were considered acceptable for the study in terms of being higher than 0.59 and 0.79 respectively.

The workshops were held for about 140 new residents at 19 clinical disciplines every year. Considering different educational context in different disciplines, we needed to apply diverse approaches to evaluate residents' communication skills. Consequently, we had to train 19 research groups to implement our research in all departments in the same year. We decided to start evaluation by one research team in one of the disciplines that held OSCE. The discipline of Internal medicine had the greatest number of residents among the departments met the inclusion criteria.

One station on Internal medicine residents' summative OSCE was designed with written permission of the exam directors. A standard patient was employed to play the role of a patient with Gastro Esophageal Reflux Disease (GERD), the most common disease in the world .So-called decision was based on the results of a forty-minute focus group with Internal medicine faculty members. In addition, based on the agreements made in that group, the items in the station questionnaire were re-checked to ensure that they cover exactly the same topics that already had been taught in the summer workshops. Total score of residents' communication skills was calculated based on 11 five- fold final items after validation process of the research tool (Appendix 1). It was predicted to be from 11 to 55 and the minimum acceptable score for those 11 items was considered to be 33.

One of our colleagues, who had recently transferred to the Research deputy after 12 years of work experience in the health center, collaborated with us playing the role of the standard patient. She was a new character for the residents, and none of residents knew her. She had a master's degree in Nursing and Sociology, and was trained by the research team for 3 months to play the role of a standard patient complaining from heartburn. She played the role of the patient with GERD in the OSCE station and rated residents' communication skills twice, during the exam and 2 days after the exam while reviewing the videos with the research team.

All 57 internal medicine residents at the medical faculty participated in a nine-station OSCE, as part of their annual summative evaluation. Each station was ten minutes

long. Two researchers started to review the videotapes and rated residents' communication skills independently 48 hours after the exam. Final report of the study was extracted from the review of the research group, consisted of two independent assessors, standard patient, and one professor of internal medicine department who was sub-specialized in gastroenterology. The data from carefully and repeatedly reviewed videotapes were analyzed using SPSS.16, and detailed feed backs were given to the residents.

## 4. Results

Communication skills of all 57 internal medicine residents were evaluated in this study and all of them received feedback. The results for 4 guest residents were excluded and were not analyzed. Those guest residents had not already attended the workshops on the topic of communication skills in the medical faculty. Their including or excluding did not have meaningful effects on the results of the study. The items for evaluation of communication skills covered different constructs: initiating the session (two items); gathering information (two items); building the relationship (four items); and explanation and planning (four items) and closing the session (two items). As some items were common among various constructs, we presented final items in the Table 1, and refused to discuss about the constructs.

**Table 1.** The Number and Percentage of Residents in Each of 5 Likert Points Based on their Communication Skills Evaluation on 11 Items of Competency Respectively

| Item of competency * | Very dissatisfying, No. (%) | Dissatisfying, No. (%) | Moderate, No. (%) | Satisfying | Very satisfying, No. (%) |
|---|---|---|---|---|---|
| **Watching and considering the patient's spoken language** | 23 (43.4) | 16 (30.2) | 11 (20.8) | 3 (5.7) | 0 (0) |
| **Starting with an open ended question** | 19 (35.8) | 19 (35.8) | 10 (18.9) | 3 (5.7) | 2 (3.8) |
| **Giving the patient every chance to talk about all his /her problems** | 14 (26.4) | 22 (41.5) | 15 (28.3) | 2 (3.8) | 0 (0) |
| **Listening actively (eye contact, moving the head, repeat ...)** | 22 (41.5) | 20 (37.7) | 9 (17) | 2 (3.8) | 0 (0) |
| **Giving importance to use none medical terms1when explaining to the patient** | 26 (49.1) | 22 (41.5) | 3 (5.7) | 1 (1.9) | 1 (1.9) |
| **Explaining the reasons for medical tests the patient need** | 41 (77.7) | 10 (18.9) | 1 (1.9) | 1 (1.9) | 0 (0) |
| **Explaining what is wrong before giving any treatment** | 9 (17) | 30 (56.6) | 13 (24.5) | 1 (1.9) | 0 (0) |
| **Sharing the patient in decision making** | 13 (24.5) | 22 (41.5) | 15 (28.3) | 3 (5.7) | 0 (0) |
| **Telling the patient about his/her plans for their future medical care** | 1 (1.9) | 2 (3.8) | 31 (58.5) | 18 (34) | 1 (1.9) |
| **Explaining how the illness will affect patient's future health** | 0 (0) | 0 (0) | 16 (30.2) | 26 (49.1) | 11 (20.8) |
| **Giving suggestions on what the patient can do to stay healthy** | 5 (9.4) | 27 (50.9) | 19 (35.8) | 2 (3.8) | 0 (0) |

* The data is based on a review done by the research group on videotapes of 53 Internal medicine residents' participation in OSCE- Medical faculty- 2010. The items of competencies were generated from the content and goals of the previously held workshops for residents

The 53 internal medicine residents who entered the study were diverse. Twenty nine residents (54.7%) were female. Describing their age, 1 resident (1.9%); 28 residents (52.8%); 15 residents (28.3%); and 9 residents (17%) were younger than 25; between the ages of 25 and 30; between 30 and 35, and 35 and more respectively. Residents described their working experience as a medical doctor as following: 2 years or less: 21 (39.6%); 2-5 years: 18 (34%); 5-10 years: 12(22.6%); and more than 10 years: 2(3.8 %). We validated the data which were entered into SPSS. Residents had three unusual total scores. Sensitivity analysis in the presence of outliers and without outliers and comparing the results showed that those data can be ignored. One-Sample Colmogorov-Smirnov Test showed a normal distribution of residents' communication skills total score [Sig. (2-tailed): 0.672]. Table 1 shows the number and percentage of residents in each of 5 likert points based on their communication skills evaluation on 11 items of competency respectively. Residents were studying in different years of residency program: year 1 (n = 26); year 2 (n = 12); year 3 (n = 9) and year 4 (n = 6). Post Hoc comparisons by using the method of Tukey HSD in One-way

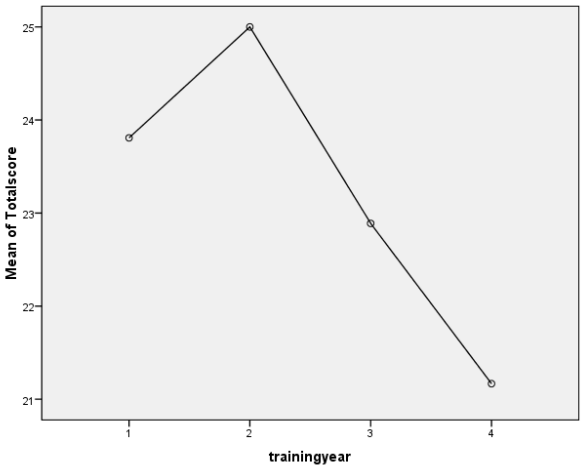
ANOVA for comparing the means among residents in different training years clearly indicates that educational impacts of workshops on the topic of communication skills are not lasting more than one year, and as Figure 1 shows residents have to repeat attending those workshops during the third and fourth years of their professional study. Mean of residents' total score was 23.62 ± 2.46.There were two modal classes belonging to the total scores of 21 and 24 both in 9(17%) of residents. Leven's test for equity of variances in the female and male residents was significant at the level of 0.344. Independent- samples T-test for equity of means indicated none- significant difference in female and male residents' total score [sig. (2-tailed: 0.441)].

There were very small and non-significant differences in the composition of scientific and executive committees for holding communication skills workshops during the past 5 years. Hence, we did not have to consider the effect of different instructors' teaching methods on residents' communication skills when analyzing the findings of this study. Mean score of residents' communication skills in different genders clustered by their training year are paneled by the category of their working year experience in Figure 2, and by the category of their age in Figure 3. Measures of central tendencies and dispersion of total score of residents' communication skills in two genders (female and male) have been paneled by their training year in Figure 3

Test statistics of Kruskal Wallis test with grouping variable of age category showed that residents in different age categories have the same communication skills (sig: 0.314). The inter-rater reliability for the station's score was .72. No significant correlation occurred between the score of communication skills station and the overall OSCE score (r = .37, p = .12). Residents passed other OSCE stations with significant higher scores than the station for their communication skills evaluation. We reviewed the videotapes with all residents again 48 hours after the exam. When necessary, based on residents' demand, we focused on their detailed communication skills with the standard patient. When giving feedback to the residents, 41.5 percent of the residents (22 out of 53) criticized their own communication skills and confessed that they should be better than they performed in the exam. All residents believed that the amount of provided information and allotted time to OSCE station was favorable.

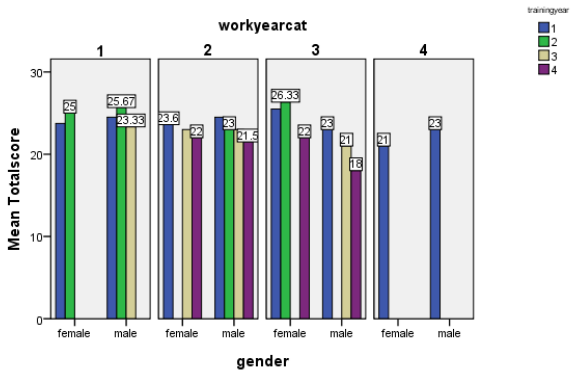
When it came to detailed communication skills, 2 residents introduced themselves to the standard patient, only one of them addressed the patient with her previously written name on the exam sheet, and the majority of residents confused the SP with medical terminology. Almost all residents explained how the illness would affect the patient's future health, and what she had to do in order to alleviate the symptoms of GERD and improve her health status, of course with none-SMART educational comments. (SMART stands for: Specific, Measurable, Achievable, Realistic, and Time-oriented).For instance, if the SP was advised to take her head a few degrees above when sleeping, it was not clear how many degrees the patient with GERD should take her head up.

**Figure 1.** Mean of Total score of 53 Internal Medicine Residents' Communication Skills in 4 Different Training Years



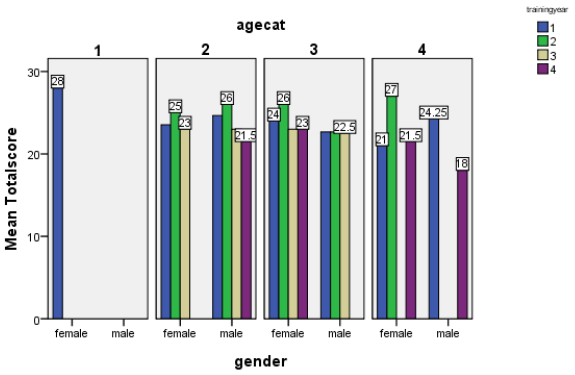

Residents' communication skills were evaluated on an OSCE station while communicating with a standard patient- Medical Faculty- 2010

**Figure 2.** Mean Score of Residents' Communication Skills in Different Genders Clustered by Their Training Year and Paneled by the Category of Their Working Year Experience




The data is based on 53 internal medicine resident's participation OSCE in Medical faculty in 2010. Residents were in four groups based on their working year (1:2 year and less; 2: between a and 5 and 10: 10 years and more)

**Figure 3.** Mean score of Residents' Communication Skills in Different Genders Clustered by Their Training Year and Paneled by the Category of Their Age




The data is based on 53 internal medicine resident's participation OSCE in Medical faculty in 2010. Residents were in four groups based on their working year (1:2 year and less; 2: between a and 5 and 10: 10 years and more)

## 5. Discussion

The findings show that the problem of poor communication between doctors and patients still exists after years of hard working. The findings of several other studies in several universities around the world have also indicated similar results (8-10). Residents' poor communication skills were not limited to their gender, age and working year experiences. We believe that the reason behind this crucial problem is the fact that the topic of communication skills is still not given sufficient weight in formal student assessments. In other words, however the problem is found, shown to be important, considered as a top educational priority, and focused on its upcoming impacts on health system in medical faculties, but sufficient weight and importance is not given to the topic of communication skills when standard setting of residents' annual exam. That is why residents could easily compensate for low score of their poor communication skills with good scores of their other competencies to successfully pass the exams.

Hence, we suggest changing standard setting of residents' annual promotion exam. Residents' communication skills should be assessed by experts or specialists in the field of medical education, health education or communication in lieu of their own professors in the same professional field. Besides, it should be assigned sufficient assessment weights to communication skills. In the study of Wayne and colleagues, five judge panels judged on pass/fail decisions for residents' communication skills competency and the percentage of residents who failed varied highly from 0% to 47%. In all, experts from different backgrounds produced different judgments (5). Their findings clearly indicates that permanent professors rated residents' communication skills with higher scores in comparison with guest professors who were merely specialists or experts in education. Such important but usually ignored difference lets residents to compensate for a low score of communication skills most of the times.

Implementation of such changes in standard setting of residents' promotion exam would bring lots of important educational achievements for medical faculties, which are mentioned in the following:

First, residents and professors will consider learning and practicing on the communication skills as a key topic during their residency program, as important as their professional topics, rather than putting it on the sidelines, and thinking to compensate for a low score of communication skills with high scores of other professional skills on their summative evaluations. Our study clearly revealed residents' negligence to address communication skills in their daily practice. We did not find even one case which reflected challenges in communicating with patients or suggested intentions and motivations to practice more on communication skills while reviewing residents' log-books with a special focus on communication skills. The outcome of such inadvertence is well evident by the downward trend in Figure 1. This clearly confirms this idea that with so-called change in residents' summative evaluations we could re-arrange the priorities in their mind, and would put the topic of "communication skills" in its real place beside their professional topics. In other words, communication skills workshops should not only be replaced by other in demand workshops but also be repeated every year. In addition, their impact on improving residents' competencies should be regularly tested.

Second, there would be lots of job-openings for graduates of medical education, health education, communication and other pertinent programs to share their valuable knowledge and experience with clinical professors in order to better teach and evaluate residents' communication skills. It will not only would provide precious opportunities for inter-disciplinary collaborations, but also would help the professors who were not previously exposed to an organized, skill-based communication curriculum during their own training to practice more on playing a good role for their medical students (5). With such doing, universities of medical sciences could claim they have met not only their social responsibilities but also their student accountabilities. Third, most of both young and old professors would become more motivated to participate in continuing education courses on topics relevant to medical education like communication skills. Following such motivation, teachers' better performance would create a well-managed educational context across all academic disciplines. As findings of other studies, both students and their role models would consider learning and teaching of communication skills as a core clinical skill at the heart of health care delivery (8). It means killing two birds with one stone in the current

climate of limited resources.

Our study had several limitations. First, it was performed in one academic medical center in only one discipline. Although the number of internal medicine residents is about one third of all new residents who are enrolled in medical faculty every year, but future studies are needed to be done in some other disciplines in the medical faculty to give more robust answer to the research questions. Second, our assessment only focused on the content and goals of previously held residency workshops in the medical faculty rather than full acceptable objectives across the world (1-3, 11-13). So, we suggest doing further studies in order to improve the content of the workshops and add some other nation-wide accredited objectives to the current plan. Third, considering our limited resources, we did not provide immediate feedback to the residents in the context we held OSCE. Whereas, according to the systematic review done by Hauer and colleagues, students learn behavior change consultation through feedback systems within authentic clinical work settings (6).

Last but not the least; our evaluation was strongly context-oriented and visiting a standard patient in OSCE station was not in accordance with residents' real performance. Hence, we strongly recommend continuing evaluating of residents' communication skills while they make relationships with their real patients in real working settings. In a similar way, other reviews have suggestd teaching and evaluation of behavior changes through active and realistic career (6). Hanna and Fins indicated that being faced with real patients should be used to build good patient- physician relationships, as a compliment to the several pedagogic advantages of simulation encounters (11).

We hope the results of this study could encourage medical education policy makers to establish regulating agencies and foundations to train and evaluate communication skills at all levels of medical education whether under or post graduate. Brown and colleagues emphasized on this point in their study too (14). We also hope that this study could put the clinical leaders in the same line with specialists of education to prioritize researches on communication skills in the top of the educational list, and motivate them to fund for future studies to evaluate residents' real performance while working in academic centers or at their private offices after graduation by conducting patient surveys, as it has been suggested by American Board of Medical Specialties (ABMS) and the Accreditation council for Graduate Medical Education (ACGME) (1, 2). To sum up, whether or not the education board of medical faculty wants to admit it, there is and has been considerable emphasis on being patient–doctor communication skills as the core clinical skill at the heart of health care delivery (4, 8, 11, 12, 14) even in the case of presence of complex documentation requirements which put residents in pressure and results disrespectful behavior (9) to the patients. According to Maguire and colleagues, between 63% and 90% of young doctors from Manchester Medical School were bad at giving information. Because, they did not try to discover the patient's expectations, encourage questions, check understanding, categorize information, or negotiate a treatment plan (10). After lots of years, the similar results being repeated in our study ; the study in Nova Scotia in 2001 (8) and Lucian and colleagues' study in 2012 (9).

In other words, it is not the time to shift teaching resources from communication skills workshops to others; rather it is the time to revise the written plans for communication skills workshops with respect to the necessary cost, effort, and other aspects of providing medical services with today's limited available funds. The areas should be revised in written plan for communication skills workshops could be concluded in: changing standard setting of residents' summative promotion exams; repeating communication skills workshops for residents every year during their residency program; using simulation applications that could support the teaching and assessment of expert judgments on residents' communication skills (4) which "would be valuable for medical education programmers across all disciplines and throughout the continuum of medical education" (15); involving patients in needs assessments to better identify future needs in continuing medical education" (8) on the topic of patient– doctor communication; developing the content of the current workshops and adding some other nation-wide acceptable goals to it; giving feedback to residents within their authentic clinical work settings; conducting patient surveys to assess graduates' communication skills; putting more time on regular monitoring and precise pursuit of residents' reflexion and self-assessment while reviewing their log-books.

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## Authors' Contributions

Dr. Ghaffarifar did the conception and design; acquisition of data ;analysis and interpretation of data; drafting the article ; revising it critically for important intellectual content; and final approval of the version to be published. Dr. Khoshbaten did the acquisition of data; analysis and interpretation of data; and final approval of the version to be published. Dr. Ghofranipour did acquisi-

tion of data; analysis and interpretation of data; and final approval of the version to be published. Dr. Kompani did conception and design; analysis and interpretation of data; drafting the article; revising it critically for important intellectual content; and final approval of the version to be published.

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