# Role-play for Interns Posted at a Rural Health Training Center attached to a Medical College of a District Located in Western India: A Learning about Communication

Shobha Misra<sup>1</sup>, Niyati Parmar<sup>2</sup>, Bansari Chawda<sup>3</sup>

<sup>1</sup>Professor & Head, Department of Community Medicine, PDU Medical College Rajkot, Gujarat, India

<sup>2</sup>Tutor, <sup>3</sup>Assistant Professor, Department of Community Medicine, Government Medical College, Baroda, Vadodara, Gujarat, India

Correspondence: Dr. Shobha Misra, Email: shobhafaimer@gmail.com

## Abstract:

Introduction: Effective communication is essential for medical professionals. Role-play is widely used as an educational method for learning about communication in medical education. This paper shares experience and process of role-play and explores students' and faculties' experiences on the same. Aim: To utilize role-play for developing competence in specific skills associated with medical interviewing and communication by Interns posted at a Rural Health Training Center attached to a Medical College. Objectives: 1. To explore attitudes of interns towards communication skills learning. 2. To obtain the feedback of interns and faculties towards identifying key elements for improvising guidelines for effective role-play within learning context. Method: Medical students undergoing internship participated in the role-play session as part of their communication skill programme. Before and after the training sessions and acting, students participated in discussion regarding role plays and good communication skills. Reports prepared by students on their experience were thematically analyzed. Results: 98% of students reported that role-play was helpful in learning. Students reported the key aspects of effective role-play as; opportunities for observation, rehearsal and discussion, realistic roles and alignment of roles with other aspects of the curriculum. Faculties opined that the role-play was well accepted by the students. There remains future scope to improvise upon the guidelines to overcome the challenges encountered. **Conclusion:** Role-play was valued by students in the acquisition of communication skills. Guidelines drawn for effective role-play included adequate preparation, alignment of roles and tasks with level of practice, structured feedback guidelines and acknowledgment of the importance of social interactions for learning. Regular courses on effective communication should be included in the medical school curriculum.

**Key words:** Attitude, Communication skills, Interns, Role-play

## Introduction:

Effective communication is essential for medical professionals. Most complaints about doctors relate to poor communication, not clinical competence. Good communication is key determinant of patient satisfaction and concordance, yet doctors often misunderstand what information patients want and use language that is unclear. The traditional

approach to professional apprenticeship like role modeling and mentoring has long been a powerful tool. This approach alone is no longer sufficient for the development of a medical professional. The domains of attitude, communication and ethics therefore need to be taught directly and explicitly throughout the undergraduate curriculum. Good communications and counseling techniques can be

Quick Response Code
回線器回

# Access this article online

# Website:

www.healthlinejournal.org

#### DOI:

10.51957/Healthline\_237\_2021

# How to cite this article:

Misra S, Parmar N, Chawda B. Role-play for Interns posted at a Rural Health Training Center attached to a Medical College of a district located in Western India: A learning about Communication. Healthline. 2021;12(3):28-36.

taught and practiced to increase clinical competence. [7]

The Graduate Medical Regulations, 2019 (GMR) mentions one of the roles of an "Indian Medical Graduate" (IMG) as; communicator. In order to ensure that training is in alignment with the goals and competencies, Medical Council of India (MCI) has designed a structured longitudinal programme on attitude, ethics and communication in form of AETCOM module. In the recent competency-based curriculum reforms in the form of Curriculum Implementation Support Program (CISP) for undergraduate medical curriculum also; to communicate effectively with the patient, family and community is envisaged as the core competency. Role-play is an important method to develop communication skills in medical students.

This paper documents an observational and report-based study exploring internship medical students' experience of role-play, focusing on acquisition of patient-centered interviewing skills. The study aims to identify key elements for development of guidelines for maximizing benefits of role-play within learning context.

**Aim:** To utilize role-play for developing competence in specific skills associated with medical interviewing and communication by Interns posted at a Rural Health Training Center attached to a Medical College.

**Objectives:** 1. To explore attitudes of interns towards communication skills learning. 2. To obtain the feedback of interns and faculties towards identifying key elements for improvising guidelines for effective role-play within learning context.

# **Method:**

Internees posted at the Rural Health Training Center (RHTC) attached to the Medical College participated in role-play activities. They are posted at RHTC for one month as part of their rural health training programme under department of Community Medicine. This programme was devised and implemented in 2016 and 2017 with one entire batch of Internees for one year.

Role-play: Role-play is used as a training method to acquire knowledge, attitudes and skills in a range of disciplines, [17] cross-cultural training, [18-19] business and human resources. [22-21] Despite its widespread use, role-play is fairly consistently defined in the education and training literature. Van Ments (1989) defines role-play as: "one particular type of simulation that focuses attention on the interaction of people with one another." [22] As there are different ways of role-playing; Maier (2002) suggests that role-play method be selected according to whether the educational goal addresses knowledge, attitudes or skills. In the acquisition of knowledge, role-plays can be valuable to observe and then discuss. For attitude development especially that which focuses on change of affect, then role-plays should be loosely structured so that players experience emotions spontaneously. While for skills acquisition, repeated opportunities with feedback is critical. [23] Educational theory: Of the many theories described, Kolb & Fry (1975) mentions four "learning environments" in their theory of experiential learning<sup>[24]</sup> - Affectivelyoriented (feeling), symbolically-oriented (thinking), perceptually-oriented (watching), and behaviorallyoriented (doing). Schon's (1983) work on reflective practice is also relevant in role-play. [25]

Role-play activities in the current Communication Programme: For acquisition of patient-centered interviewing skills structured role-play with feedback to the learners; using concepts drawn from Kolb & Fry<sup>[24]</sup> of experiential learning and encouraging reflective practice as mentioned by Schon (1983) were utilized. [25] The approach in which students played their role as a medical student in a way they are expected to perform in real clinical encounters.

Before starting the session, students were asked questions regarding importance of good communication skills and their prior experiences of role-plays in the group. The responses were recorded by a note keeper. A two hours interactive lecture was taken on good communication skills while interviewing patients and evidence for patient centered interviews, giving and receiving feedback

and making presentations. Followed by this a video on the importance of good communication and patient interviewing was shown to the students and then discussion and reflective practice by the students took place as shown in Table 1.

**Table 1: Communication Programme in Internship** 

Topics covered in sessions:	Educational methods:	
• Evidence for patient- centered interviewing.	• Lectures	
Skills for communicating with patients	Small group discussions	
• Non-verbal	• Role-play-observation: interviewing, facilitating feedback	
• Verbal	• Interviews with simulated patient actors and volunteers	
Giving and receiving feedback	Videotape review	
Making presentations	Written reflections	

Thereafter, the steps followed were: Step 1. The students were encouraged to identify/discuss a topic based on the common health problems observed by them while examining patients at the PHC outpatient department (OPD) as small group discussions as shown in Table 2. Step 2. Add details & Step 3. Assign Roles; the students set up role playing scenarios in detail for it to feel real. It was made sure that everyone was clear about the problem that they were trying to work through, and that they knew what they wanted to achieve by the end of the session. Once they had set the scene as shown in Table 2, they identified the various fictional characters involved in the scenario based on the situation selected and divided themselves to play the role of medical practitioner, patients or observers. Step 4. Act out the Scenario; the role was rehearsed in front of the teachers. After the feedback, role-play was then enacted in the public viz; at the PHC during the Village Health & Nutrition day or in the streets of the villages or at the Anganwadi centers. Step 5: When they completed the role-play, discussion took place on what they had learned from the scenarios, so that all those

involved could learn from the experience. Individual feedback was offered by trained facilitators supported by a checklist as shown in Table 3. Step 6. Written summaries of observations and conclusions from everyone who were involved in the program was obtained.

Each role was allocated 5 days of preparation, 15-30 minutes in role-play and 30 minutes of feedback. Part of the feedback process involved a brief period in which written reflection on performance was encouraged. Teachers convened and discussed issues that emerged in the role-plays as well as checked on the "role-play" process. Individual feedback was given to the interviewer using structured guidelines. During the entire process the students learnt other skills required for a health professional like; building rapport with and mobilizing people, team building and working in a team, leadership, time management, interaction with health-related departments like panchayat and frontline workers like Accredited Social Health Activists and other health functionaries, delivering health talks etc. Immediately after the session, students were asked to write their reflections related to the role-play experience. Qualitative data was thematically analyzed based on the reports prepared by 12 batches of students posted during the year. Students completed the reports as part of their usual session evaluation. The study has been approved within the department requirements for course evaluations as part of Internship Logbook. The key concepts identified are presented in this paper. As the nature of research was innovation in education that took place as part of the regular curriculum, the same was exempted from ethical review by the Institutional Review Committee.

#### **Results:**

A total of 136 Internees from 12 batches, each batch comprising of 10-12 students, posted for one month at RHTC attached to the Medical College completed the Internship Communication Programme and submitted the reports. Pre-session discussion was held touching upon: The students'

Table 2: Patient role/Case scenarios & Task of the Interviewer

1.	Role-play on Counseling High Risk Groups for Prevention and Control of Hiv/Aids; worker of a call center; a pregnant woman; a case of thalessemia major; a truck driver	You are a medical officer at a PHC; Find out why the patient has come to the clinic today and what does he/she expects from the consultation, ask some questions about background information such as the patient's family and personal relationships and his/her occupation.( This can also be helpful to identify the patient's worries or concerns about the visit) Take care to explore all the patient's difficulties early. Counsel/solve problem the patient for control and prevention of the public health problem that you explored.
2.	Role-play on Counseling a couple for Family Planning: a couple with one child; a newly wedded couple; an unmarried teenage girl	
3.	Role play on creating awareness amongst Public against Malaria, Dengue & Chikungunya (use of bed-nets and other environmental measures)	
4.	Role play on Prevention and Control of Protein Energy Malnutrition (PEM); Creating awareness and counselling on Diet	
5.	Role-play on Importance of Vaccination: a health worker of a village explaining importance of vaccination to public; a quack managing vaccine preventable diseases and the health care worker removing myths and false believe against vaccination	
6.	Role play on Prevention and Control of Tuberculosis	
7.	Role play on Prevention and Control of Heat Stroke for farmers	

# Table 3: Task for observer

Use the checklist to identify which skills the interviewer uses in the consultation. Facilitate the feedback process. The following points provide a structure for feedback. The following questions may be helpful in staying focused on your task and ensuring a balance.

- Observer asks the interviewer: Can you briefly state how you felt during the interview? Can you describe two aspects of the interview that worked well?
- Observer asks the role-play patient: Can you identify two communication skills that the interviewer used that were effective?
- Observer provides specific feedback on two skills that s/he observed worked well.
- Observer asks the interviewer: Can you identify two aspects of the interview that you would do differently if you could repeat the interview?
- Observer asks the role-play patient: Can you identify two communication skills that the student could have used to improve the interview?
- Observer provides feedback on two skills that could have improved the interview.
- Observer summarizes the feedback on things that worked well and things to improve.
- Interviewer receives written feedback from observer and role-play patient.

# Table 4: Advantages of Role- play Performance (Reflections by students)

# Opportunity for rehearsal

"The most important thing was the in-built rehearsal"

"It enabled me to use my skills directly and assess their effects on other people..."

"First-hand experience – to understand the difficulties in communication which are hard to get without actually doing it"

# Importance of preparation

"Enabled me to use my communication skills in a way much more relevant to the way in which I will need them in real consultations. Also, the role plays each included a psychosocial aspect which was useful to practice eliciting."

## To receive feedback

"It's good to receive constructive criticism and be made aware of your behavior"

# Importance of Group discussion

"Group discussion afterwards (as well as individual feedback) allows us to learn from other people's experiences too."

# **Improving Communication skills**

"Helped in development of communication skills, instructiveness and confidence building".

"We improved our communication skills, ignited the minds of villagers, this helped better bonding with them."

"Highlighted aspects of non-verbal communication."

#### Others

"It's an effective mode of community interaction and entertaining and effective awareness method."

"Role-play changes your perspective on subjects and can open up new avenues of thinking"

"On field confrontation of the problems faced by people".

"It puts you in a real-life situation where you can practice what you know but still it is a role-play so if you make mistakes it is okay" you can learn from them".

free comments before administration of the program including: learning about negotiation, presenting, public speaking, interviewing aspects, acting out scenarios for group discussion of ethical or other controversial issues and developing dramatic skills. A few said "It (role-play) is a pleasant and practical way of learning and evaluating your capabilities." "Can be amusing and interesting because it brings to life situations which may be encountered..."You behave differently when you are being observed "was mentioned by one of them. Post-session: 98% of students reported that role-play had been helpful for learning. Examples of a range of students' free text comments were: "Fun and Learning goes Hand in

Hand"; "Role Play – In Front of Common Public for the first time was exiting"; "Was a 'finishing touch' to our posting at PHC"; "Creating awareness and counselling about PEM (protein energy malnutrition) was an amazing experience"; "It is a change from usual way of learning that some may find refreshing"; "It also made me realize how difficult it can be to keep an interview flowing – I'll definitely need more experience!", In a student's own words, "Our role-play was based on the environmental measures for the prevention of mosquito bite and propagation and thus prevention of malaria. We chose this theme due to 3 main reasons which are all interconnected; High Extreme

misconceptions and unawareness in community; Incidence of malaria in this season and; Prevention is better than cure "

Advantages of role-play performance as perceived by the students are tabulated in Table 4. They are classified as opportunity for rehearsal, importance for preparation, receiving feedback for improvement, group discussions, improving communication skills and others.

Some of the ways in which Role –play can be unhelpful as described by the students were: "Was not real hence some emotions were over acted, would not have been the same had it been done for real"; "It's unrealistic as the person you're talking to doesn't have a real illness, so they will react differently to real patients"; "You can never take it seriously as you know the people you're interviewing and so the way you act is not representative of how you would with a real patient."

Suggestions for improvement of the programme given by internees: At the end of the programme suggestions were invited from the internees to improve the programme. Some of them include; its better where possible to work with students who are less well known to you. One student mentioned, "Much better doing it with people you don't know "Others were related to the answers to the question on unhelpful aspects of role play as mentioned above.

Students' responses to being asked for ways in which role-play can be made more effective:

A few mentioned that a video of their own role play if prepared can be helpful to them as they can view and reflect back on what they performed. A few mentioned, "Videotaping is very useful as can see how your own performance is seen by others" Some of the slogans prepared by them and used during role-play were: "Machhar ki chhutti...malaria se mukti!!!!!" (get rid of Malaria by getting rid of Mosquitoes); "Rasi mukavo bhai rasi mukavo" (Vaccinate your child brother, vaccinate your child). Important verbatim from faculty include: "The experience of using role-play to teach students about communicating has met with success, as 98% of

students reported that the role-play had been helpful in improving their communication skills"; "Introducing role-play to our internship programme met with least resistance and/or anxiety from some students"; "Creating roles that reflect real life experiences with appropriate levels of challenges to be faced. Relating the role-play to the broader contexts in which students are learning is needed"; "Writing reflections on the experience can be added"; Like most educational methods, role-play on its own probably contributes only a little to the development of patient-centered interviewing skills"; "There are challenges involved in operationalization viz; it requires more time and effort from faculty, at least in the initial phases of guideline development".

## Discussion:

Good communication skills are essential in medical practice to develop confidence in patient care. It enhances quality of care, helps in improving compliance and in building a healthy doctor-patient relationship. The domains of attitude, communication and ethics therefore, need to be taught directly and explicitly throughout the undergraduate curriculum. Good communications and counseling techniques can be taught and practiced to increase clinical competence. [7]

After participating in the sessions, in this study almost all students and faculty reported role-play as valuable. The programme has now become part of the one-month long internship curriculum at RHTC. Our findings are in agreement with various studies published in medical literature. [26-27] Findings from UK are published by Debra and Tanya, [26] who in their study reported that 96.5% students found role-plays to be helpful in learning communication skills. Wright et al. [27] in their study from southern US, found that the fourth-year medical students do not differ from first-year medical students in terms of attitudes toward communication skills training, but they have significantly higher confidence scores about communicating with patients. This highlights the need of a longitudinal program to teach professionalism to medical students. The AETCOM<sup>[9]</sup> module introduced in the undergraduate curriculum

in India by MCI to teach these skills, is designed to be taught right from first year and shall be continued to be taught till the final year of the course in form of a longitudinal program. Best teaching practices and evaluation methods to improve the skills of medical students, to communicate optimally with patients, families, and health team members is envisaged in the GMR, 2019 in India. [10]

Higher positive attitude score in learning communication skills are documented from a study conducted in southern India by Sheela Haveri at al. [28] Anjali Choudhary and Vineeta Gupta [29] reported that about 88% of the students in the sample from north India were convinced of the importance of learning communication skills for effective practice. In a study from New Delhi by Joekes et al. [30], where students received a curriculum that included communication skills training integrated into a "professional development" vertical module, noticed that students receiving the professional development training showed significant improvements in certain communication skills.

Our findings are different from a study by Stevenson and Sander, who reported that "role-play and student presentations" are the least preferred teaching method by 32% of new medical students. Of these students, 75% believed it to be ineffective while 25% reported personal reasons (e.g. embarrassment) for their response.

Based on faculty and student feedback, considering principles set out by Knowles et al. [32], agreeing on guidelines for effective use of role-play to develop patient-centered interviewing skills mentioned by Debra Nestel and Tanya Tierney [26] and using essential communication skills adapted from Kalamazoo Consensus statement, [33] we plan to develop guidelines to suit our context viz: Stating clear aims and objectives about task and roles; Creating roles that reflect real experiences and appropriate levels of challenges; Relating the roleplay to the broader contexts in which students are learning; Acknowledging potential difficulties in role-play; Emphasizing the importance of social

interactions for learning; Providing sufficient time for preparation for roles; Highlighting benefits from playing all roles; Using structured feedback guidelines that explores interviewers' feelings, identifies effective skills and those that require development, seeks feedback from interviewer and "patient", achieves a balance in what has worked and what needs development; Responding to student preferences for working with friends; Writing reflections on the experience; Ensuring that the tutors are enthusiastic; Providing opportunities for debriefing; Summarizing experiences; Using audiovisual recording devices for playback.

Structured feedback directed students to think about what had taken place in each role-play as well as the value of role-play before and after participating in the session. This prompted students to draw on their prior experience – an important component of adult learning as well as promoting reflection-on-action. The role-play guidelines draw attention to the need for good exchange between participants in order to have successful role-play.

Like most educational methods, role-play on its own probably contributes only a little to the development of patient-centered interviewing skills. However, as part of the broader communication programme at the Medical College studied, that uses a wide range of methodologies addressing knowledge acquisition, attitude and skills development, role-play appears to be beneficial. For this reason, it is difficult and, in some ways, unreasonable to try to evaluate the impact of singular educational method. It is also important to recognize that students learn in different ways and that role-play may be a preferred method for students who learn through concrete experiences.

## **Limitations:**

One of the limitations of this study is that it evaluated single medical school, which may not represent the IMG as a whole. More information about individual students may provide clarity. Therefore, caution should of course be exercised in extrapolating results to all students in all medical

schools. Further studies should aim to determine attitudes of medical students in all medical schools of India to get higher generalizability. Eliciting the views of teachers in facilitating role-play work would also provide an additional perspective.

# **Conclusion & Recommendation:**

Role playing is an effective method to develop the skills of initiative, communication, problem-solving, self-awareness, and working cooperatively in teams, and these are above all the learning of mere facts, will certainly help young people/students to be prepared for dealing with the challenges of the Twenty-First Century. We have provided a practical foundation for the use of role-play as an educational method in the broader context of simulations. Role-play was valued by students in the acquisition of communication skills. The experience thus gained might help the institute to implement and evaluate the longitudinal programme developed by Medical Council of India (MCI) on attitude, ethics and communication in form of AETCOM module. Guidelines for effective role-play include; adequate preparation, alignment of roles and tasks with level of practice, structured feedback guidelines and acknowledgment of the importance of social interactions for learning. Regular courses on effective communication should be included in the undergraduate curriculum.

# **Declaration:**

Funding: Nil

Conflict of Interest: Nil

#### **References:**

- 1. Richards R. Chasms in Communication. British Medical Journal.1990; 301:1407-1408.
- Simpson M, Buckman R, Stewart M Maguire P, Lipkin M, Nocvack D till J. Doctor-patient communication: the Toronto consensus statement. British Medical Journal J 1991; 303:1385-1387.
- 3. Frances V, Korsch BM, Morris MJ. Gaps in doctor-patient communication: patient response to medical advice. New England Journal of Medicine. 1969; 280:535-540.
- 4. Simpson MA. Clinical psycholinguistics: the language of illness and healing. New York: Irvington; 1980.
- Faden RR, Becker C, Lewis C, Freeman J, Faden AI. Disclosure of information to patients in medical Care. Medical Care1981; 19:718-733.
- 6. Makillop WJ, Stewart WE, Ginsberg AD, Stewart SS. Cancer

- patients' perceptions of disease and its treatment. British Journal of Cancer 1988; 58:355-358.
- Aspegren K. BEME Guide No 2: Teaching and learning communication skills in medicine – A review with quality grading of articles. Medical Teacher. 1999; 21:563–570.
- MCI Document: Graduate Medical Regulations 2019 (GMR 2019). Medical Council of India, Pocket-14, Sector-8, Dwarka, New Delhi 110077.
- MCI Document: Attitude, Ethics and Communication (AETCOM)
   Competencies for the Indian Medical Graduate 2019. Medical Council of India, Pocket-14, Sector-8, Dwarka, New Delhi 110077.
- MCI Document: Curriculum Implementation Support Program of the Competency Based Undergraduate Medical Education Curriculum 2019. Medical Council of India, Pocket-14, Sector-8, Dwarka, New Delhi 110077.
- 11. Hargie O, Dickson D, Boohan M, Hughes K. A survey of communication skills training in UK Schools of Medicine: present practices and prospective proposals. Medical Education. 1997; 32:25–34.
- Skelton J, Hammond P, Fitzmaurice D, Wiskin C. The acceptability of whole context role-play. Education for General Practice. 1997; 8:206–212.
- 13. Nestel D, Kidd J, James V. Inter-professional shared learning: a workshop on communication for screening blood donors. Learning in Health and Social Care. 2002; 1:229–238.
- 14. Nestel D, Kidd J, Muir E, Plant M, Thurlow S. Modelling the lay expert for first-year medical students: the actor-patient as teacher. Medical Teacher. 2002; 24:562–564.
- Joyner B, Young L. Teaching medical students using role-play: Twelve tips for successful role-plays. Medical Teacher. 2006; 28:225–229.
- Wagner PJ, Lentz L, Heslop SD. Teaching communication skills: A skills-based approach. Academic Medicine. 2002;77: November 1164.
- 17. Jones K. Simulations in Language Teaching. Cambridge University Press: Cambridge; 1982.
- 18. Cross cultural training Meeting the needs of our linguistically and culturally diverse community. Victorian Interpreting and Translating Services, Melbourne. 1982. http://www.vits.com.au [accessed September 21, 2006]
- Thom DH, Tirado MD, Woon TL, McBride MR. Development and evaluation of a cultural competency training curriculum. BMC Medical Education. 2006; 6:38.
- 20. Sutcliffe M. Using role-play to teach business students: Challenging the teacher, supporting thelearners.2006. http://www.business.heacademy.ac.uk/resources/reflect/conf/2002/sutcliffe/sutcliffe.pdf [accessed September 21, 2006]
- 21. El-Shamy S. Role-play Made Easy: 25 Structured Rehearsals for Managing Problem Situations and Dealing with Difficult People. Pfeiffer: London; 2005.
- 22. Van Ments M. The Effective Use of Role Play: A Handbook for

- Teachers and Trainers. New York: Nichols Publishing; 1989.
- 23. Maier HW. Role playing: Structures and educational objectives. The International Child and Youth Care Network. 2002. http://www.cyc-net.org/cyc-online/cycol-0102-roleplay.html [accessed June 13, 2006]
- 24. Kolb DA, Fry R. Toward an applied theory of experiential learning. In:Cooper C, editor. Theories of Group Process. John Wiley: London; 1975.
- 25. Schon DA. The Reflective Practitioner. Jossey-Bass: San Francisco; 1983.
- 26. Debra Nestel and Tanya Tierney Role-play for medical students learning about communication: Guidelines for maximizing benefits. BMC Medical Education. 2007; 7: 3.
- 27. Wright KB, Bylund C, Ware J, Parker P, Query JL, Jr, Baile W. Medical student attitudes toward communication skills training and knowledge of appropriate provider-patient communication: A comparison of first-year and fourth-year medical students. Medical Education. 2006:11–18.
- 28. Sheela P Haveri, Sebastian NM, Arya S Nath. Attitude of medical students towards learning communication skills. International Journal of Community Medicine And Public Health. 2016 Jan; 3(1):157-160
- 29. Anjali Choudhary and Vineeta Gupta Teaching communications

- skills to medical students: Introducing the fine art of medical practice International Journal of Applied and Basic Medical Research. 2015 Aug; 5(Suppl 1): S41–S44.
- 30. Joekes K, Noble LM, Kubacki AM, Potts HW, Lloyd M. Does the inclusion of 'professional development' teaching improve medical students' communication skills? BMC Medical Education. 2011; 11:41.
- 31. Stevenson K, Sander P. Medical students are from Mars business and psychology students are from Venus University teachers are from Pluto? Medical Teacher. 2002; 24:27–31.
- Knowles MS, Holton EF, Swanson RA. The Adult Learner: The Definitive Classic in Adult Education and Human Resource Development. 6. Elsevier: USA; 2005.
- 33. Barbara L. Joyce, Timothy Steenbergh, Eric Scher. Use of the Kalamazoo Essential Elements Communication Checklist (Adapted) in an Institutional Interpersonal and Communication Skills Curriculum. Journal. 2010 Jun; 2(2):165–169.