



Original Research Article

TO EVALUATE THE INTERPERSONAL SKILLS OF INTERNS IN ORTHOPEDICS USING MINI-CLINICAL EVALUATION EXERCISE – AN INTERVENTIONAL STUDY FROM NORTH INDIA

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ABSTRACT

Background: Medical undergraduates having lack of interpersonal skills may lead to severe deficiencies in health services. Currently these were not being trained or assessed at workplace for their behavior and communication skills during their medical curriculum. During this study, mini-CEX (mini clinical evaluation exercise) was used as a work place based assessment (WPBA) tool to assess the interpersonal skills of interns and providing them concurrent feedback. The aim of this study was to evaluate and improving the interpersonal skills of interns posted in orthopedic department during their rotatory internship while assessing the acceptability, feasibility and effectiveness of mini-CEX assessment as a tool.

Materials and Methods: This prospective and interventional study was conducted in department of orthopedics of our hospital settings between July to November of 2022. The forty interns who participated in this study were on rotatory internship in our department and 06 volunteered faculty members were also included. The mini-CEX form as assessment tool structured by American Board of Internal Medicine was used in this study. Each intern undergone six rotatory assessment sessions, on mini-CEX forms with each of the faculty comprising a total of 240 sessions. Participants at the end of their internship submitted their perceptions on an anonymous validated questionnaire which contains both open ended and closed ended questions (Likert 5-point scale). **Statistical Analysis:** The descriptive data having frequencies were analyzed using Microsoft Excel software. Thematic analysis was used for qualitative data of open ended questions.

Results: Most of interns (36/90%) and all included faculty members had shown that mini-CEX assessment tool has encouraged them and helpful in improving their communication skills. On comparison of their first through 6th encounters, interns had shown improvement in their mean min-CEX score for skill development and competencies with improvement in communication skills. This improvement was statistically significant. (p<0.05).

Conclusion: Our study had shown that mini-CEX as WBPA too is an acceptable, effective as well as feasible method for assessing the interpersonal skills of interns in clinical settings.

Keywords: interns, interpersonal, encounters, skills.

INTRODUCTION

During professional training in medical field, interpersonal skills among doctors is lacking and these predisposes them various difficult situation during their case handling in duty hours. Communication skills of medical students and would be doctors is of utmost importance to provide better health care to patients and improved health care outcomes towards society.^[1] There are no communication skills training during the tenure of their 4 and ½ years of professional training in medical colleges. These Interns, who are our future doctors of our society are not, imparted any training regarding communication skills during their work place. To evaluate the interpersonal or communication skills, a work place based assessment (WBPA) is being increasingly used and can be used in interns also.^[2,3] So, accordingly we planned a project for assessment of communication skills among interns in WBPA as assessment tool using a mini-clinical evaluation exercise.^[4] and immediate feedback about their communication skills was given to interns.

MATERIAL AND METHODS

Study Design: This was a prospective interventional study design used in a tertiary care centre.

Study Setting: This study was conducted in department of orthopedics in Government Medical College, Patiala, and Punjab, India.

Study Duration: This study was conducted in our hospital setting between July to November of 2022.

Study Population: Interns which were posted in our department of orthopedics during these (July to November) months were enrolled in this study. A total of 08 interns were posted in our department for one-month training. Voluntarily participation of 06 faculty members was included in this study. Both groups have given their informed consent. The 06 faculty members and 40 interns were participated in study. After taking institute ethical committee (TRG)EC/NEW/INST/2020/997/27352 dated 17-11-2021) both faculty members and interns were sensitized about the min-CEX using orientation sessions. We conducted power point presentation, mini lecture, role play and simulated videos of mini-CEX to guide and educate about these tools. During these orientation sessions, history taking, counseling and breaking bad news, were primarily focused among our participants. All participants and evaluators were detailed about principles and methodology of this study and all their doubts were clarified. They were given handouts of mini-CEX for their further reference.

The mini-CEX form used in assessment sessions during study was issued by American Board of Internal Medicine.^[5] The “Kalamazoo Essential Elements Communication” guidelines were used for evaluating and giving feedback of their

interpersonal skills during these sessions.^[6,7] The interns used these guidelines during mini-CEX sessions and these were based on “how the intern builds a relationship, opens the discussion, gathers information, understands the patient’s perspective, shares information, reaches agreement and gives closure”. Permission for usage of these tools has been obtained for their use in this study.

The assessment encounters were conducted in outpatient department (OPD) and inpatients. Informed consent of patients or their attendants was obtained before sessions were conducted. According to guidelines, in mini-CEX procedure seven skills⁽⁵⁾ were to be observed for complete assessment of qualities. But in this study, only three namely, history taking (Point 1), humanistic qualities/professionalism (Point3) and communication skills (Point 5) were used as tools for evaluation during sessions. The overall clinical skill competence was modified to overall communication skill competence (Point7).

During this study 06 mini-CEX encounters were established and each intern undergone six assessment encounters with 06 different faculty members. The time slot for each assessment session was 15-20 minutes, followed by oral feed-back for next five mints. We kept the time interval of 07 days between two encounters. During these sessions interns tried to get involved into history taking, informed consent, communicating regarding risk and prognosis of disease or illness, explaining any bad news and counseling about treatment and therapy. The patient’s symptoms were recorded on 03-point scale (low, moderate and high) and hospital settings (OPD, indoor and emergency) basis by faculty during assessment sessions on recorded dates. The record of time spent by each faculty on observation and providing feedback was also maintained. During assessment sessions faculty also noted the intern’s focused area out of given options, whether it was history taking, humanistic qualities/professionalism or counseling of patients.

During this study, point system for mini-CEX rating was used and they were rated according to their scale in rating system by each assessor. The rating scale was unsatisfactory if score was between 1-3, satisfactory when having 4-6 and considered as superior when his rating was 7-9 on mini-CEX scale. All assessors have rated each intern in once and average of this given score by each assessor was taken as final rating of intern. The total score of each intern obtained on counter one was compared with that score which he has obtained on counter six, this is done to analyze the internal capability of each intern to grasp the changes and about his learning curve. Our MEU (Medical education Unit) and subject experts validated them on their completion of rotatory internship. This is done on the basis of the anonymous feedback questionnaire submitted by each intern on their completion of departmental internship. The participating faculty after completion of all encounters also filed the

feedback questionnaire. Likert 5point scale.^[8] ranging from 1=strongly disagree to 5=strongly agree was used to rating questionnaire in closed ended questions and open ended questions were used to assess their perceptions and feedback about communication skills of interns in orthopedic department.

Statistical Analysis

In this study, all the data of mini-CEX rating and feedback questionnaire forms were collected and analyzed on Microsoft Excel software. All categorical variables like, frequency, percentage and descriptive statics were obtained and $p < 0.05$ value was considered as significant. Thematic analysis was done for qualitative data of open ended questions. The scores of 1st and 6th mini-CEX encounters were compared by Paired t-test. Qualitative data was analyzed by thematic analysis and P value of < 0.001 was considered as significant.

RESULTS

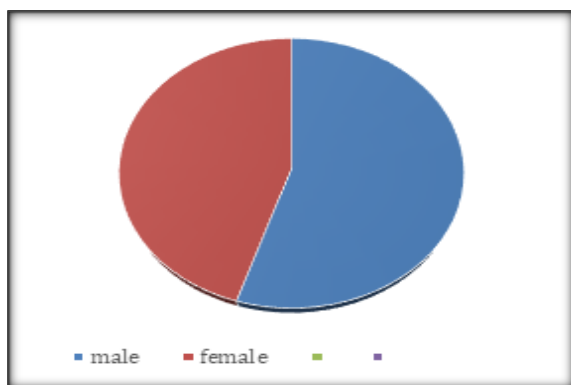


Figure 1: Gender distribution

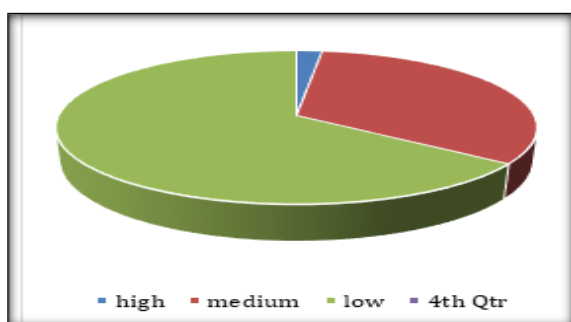


Figure 2: Complexity percentage

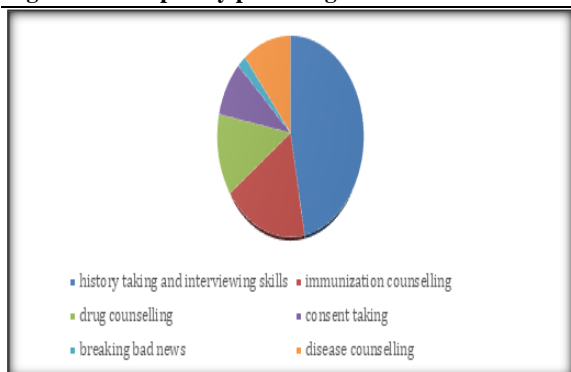


Figure 3: Focus areas during mini-CEX

This study was conducted from month of July–December 2022 in the department of orthopedics. In this study, 40 interns and 06 faculty members were participated. Each intern had undergone mini-CEX encounters with six faculty members differently, comprising a total of 240 encounters with six faculty members. There were 17 females and 23 male interns. (Figure-1) The participating faculty, classified the 240 encounters into 06 of high complexit (2.5%) 73 as moderate complexity (30.4%) and 161 as of low complexity (67.1%). (Figure-2)

During mini-CEX encounters, history taking or interviewing skills in 114(47.5%) cases, counselling about disease in 26 (10.8%) cases, while counseling about immunization in 48 (20%) cases and counseling about drugs in 32 (13.3 %) cases, consent taking for procedures and investigations in 15 (6.3%) and explaining or breaking about bad news in 5 (2.1%). Female interns performed better in “Interviewing Skills” as compared to males which performed better in “Counseling Skills.” Male interns have got better score in Humanistic qualities/ Professionalism. Female interns achieved better score in overall communication skills; however, these findings were statistically non- significant. (Table1)

In this study, 90% (36) of interns agreed or strongly agreed that this is a good method for assessing, learning and building confidence among them for history taking, explaining risk and developing communication skills. Mini-CEX rating in assessment of communication skills among interns is a good method for assessing communication skills. In both counseling and taking feedback, 85% of interns strongly suggest that it helped them in improving their approach while dealing with patients. 87.5% interns felt that it is useful exercise in developing skills, but not a time consuming process, meanwhile 85% interns proved its feasibility. 87.5% of interns suggested that it should be included in medical curriculum and has to be continued as a program of evaluation during rotatory internship.

During this study, the interns and faculty has responded differently to open ended questions in this program. The interns explained the following points in open ended questions:

*On every step or encounter, I wanted to give my better performance. I have been explained thoroughly about the pros and cons of communication skills which has motivated me about my short comings.

*Prompt feedback from faculty has proved that this program is excellent in improving and understanding the mistakes.

*This program has helped us learning in a practical way than bookish style.

*I felt anxious while being watched by faculty on each encounter.

*I felt anxious while I was being taught or explaining in front of patients.

During this study, the whole faculty presumed that assessment of interns and their feedback to interns in this program has been shown that mini-CEX program has made interns more confident in communicating with patients and it helped them in improving their communication skills (Figure-3). 83.3% of faculty has strongly agreed that this is satisfactory method for feedback tool for assessment of skills. The whole faculty has agreed that this exercise has improved the communication skills as well as built confidence among interns. According to 66.66% of faculty, it is a feasible exercise as well as good for assessing the complexity of cases and not a laborious process. All faculty felt the need of incorporation of this in medical curriculum in rotatory internship.

Faculty has given following feedback for open ended questions:

*feedback reporting in this program has encouraged the self-reflection/self-analysis among interns and motivated them for better performance in next encounter.

*In addition to improving in communication skills among interns, their clinical knowledge in dealing with patient has increased drastically

* Behavior Change Communication (BCC) protocol should be in their under graduate course.

*some of faculty members felt it as dog-tired and time consuming process in addition to their clinical duties.

During this study, on assessing and comparison of mini-CEX scores of interns on their visit to encounters one through 6 has shown that their skill competencies along with improvement was statistically significant. ($p < 0.05$) (Figure-3).

Table 1: Comparison of competencies of interns on mini-CEX

	Gender	Mean	SD	P value
Interviewing skills	Male	6.29	0.98	0.876
	Female	6.26	0.92	
Professionalism and humanistic qualities	Male	6.17	0.97	0.453
	Female	6.05	0.96	
Counseling skills	Male	6.32	0.98	0.274
	Female	6.43	0.97	
Communication skill competencies	Male	6.33	0.95	0.054
	Female	6.42	0.97	

Table 2: Perception of Interns about using mini-CEX

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Improved my communication skills	1	2	1	16	20
Improved my counseling skills	1	2	3	16	18
Not time consuming	1	2	2	15	20
Satisfactory method for assessing communication skills	1	2	1	17	19
Effective tool for feedback	2	2	2	15	19
Feasible WPBA exercise for interns	2	3	1	16	18
Incorporation in curriculum	2	2	2	20	15
Mini-CEX program should be continued	1	2	2	16	19
Increased confidence in history taking	1	1	2	17	19

Table 3: Perception of faculty using about mini-CEX

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Improved communication skills	0	0	0	2	4
Increased confidence in communication skills	0	0	0	3	3
Not time consuming	3	2	0	1	0
Satisfactory method for assessing communication skills	1	0	0	2	3
Effective tool for feedback	1	0	0	1	4
Feasible exercise for interns	1	0	0	2	3
Incorporation in curriculum	0	0	0	2	4
Mini-CEX program should be continued	0	0	1	2	3
Assessment of cases with varied complexity	0	1	1	2	2

Table 4: Comparison of encounter scores on mini-CEX

Skills	Score on Encounter no-1	Score on Encounter no-6	Mean improvement in score
Medical interviewing skills	5.35	7.25	6.3

Humanistic Qualities/ professionalism	5.325	6.975	6.15
Counseling skills	5.425	7.375	6.4
Communication skills and confidence	5.225	7.475	6.35

DISCUSSION

A perfect result of a work requires better communication skills of its employees, this is true for the doctors for providing and delivering good health services to the people. A better communication skill has been associated significant impact on wellbeing of patients and gives improved health care outcomes.^[9] Mere knowledge without communication leads to misunderstandings and misinformation among patients. In current syllabi of undergraduates there is no training or assessment for the same and this leads to less confident medical graduates and sometimes may cause disasters during dealing of emergency cases. In newly developed Competence Based Medical Education Curriculum has stressed on inculcating Attitude, Ethics, and Communication module and teaching communication skills to students. However, these qualities or skills cannot be developed by delivering didactic lectures. It needs a lot of repeated practice about work place based assessment and performing group discussions among students. This immediate feedback on work place based assessment on various patients like taking history and informed consent, empathy as well as explaining about critical illness and breaking bad news, tells us about the emotional maturity of medical graduates.^[10,11]

During this study, mini-CEX was used in real patient setting to assess the communication skills of interns posted in orthopedic department. The assessment and feedback was done by mini-CEX method among interns. Work place based assessment studies of post graduate has been seen in literature, but there are hardly any studies done on undergraduates or interns for assessing their communication skills using mini-CEX method.^[12,13]

Our results for average time of observation and immediate feedback was 16.48 min and 6.45 min on all encounters was comparable to study of Kogan et al,^[10] having observation and feedback time of 21 min and 8 min respectively. The male and female interns performed differently on mini-CEX assessment of skills.

Female interns performed better in "Interviewing Skills" as compared to males which performed better in "Counseling Skills." A male intern has got better score in Humanistic qualities/ Professionalism, but these findings were statistically non- significant.

Female interns achieved better score in overall communication skills competence, which showed that female interns were empathic and had communicated better with patients during overall communication skill competence. Various studies had shown that, female interns communicate better

having higher degrees of empathy.^[14] A meta-analysis has shown that female doctors were extra patient centered, empathic as well as had more communicative skills.^[15,16] They also provide more psychosocial support as well as information to patients. In this study, there was statistical significant difference in mean skill competencies score of Medical interviewing skills, Humanistic qualities, counseling as well as overall Communication skill competence. Interns showed improvement in their score on successive visits to encounters. Mean mini-CEX score of Medical interviewing skills and Counseling skills was 6.3 and 6.4 respectively, which was higher as compared to Humanistic qualities score of 6.15. The approximate gap encounter for visits of interns was about 5-7 days. As per their mini-CEX score of all interns between first and sixth encounters, they built confidence among themselves and improved in their communication skills.

During our study, interns expressed that it was a great exercise for giving feedback to them during their encounter visits and this helped them in improving and delivering their best clinical skills. All interns had shown mixed response to real time patients encounters. The results shown in this study were comparable to other studies.^[17] A systematic review had shown individual personality traits of interns and external environmental surroundings during feedback have great influence on the response of interns during encounters.^[18] In this study, the satisfaction rate regarding assessment tool of interns and faculty was comparable to other studies.^[19] In this assessment tool, immediate constructive feedback given by faculty during encounters has made the interns more confident and improved their personality in dealing with real time patients. They felt this mini-CEX as a challenging and behavior improving tool and also explained that this immediate constructive feedback had clarified their doubts about dealing with difficult patient settings during assessment in this study.

In this study, Interns during their open ended questions had expressed eagerness about more assessment encounters during their rotatory internship in other clinical departments. They think that these assessment sessions will help them in building confidence and improved communication in their clinical practice. However, faculty's response to open ended questions has shown that these sessions have improved their interpersonal skills as well performance in clinical settings. Faculty motivated them to do better in next encounter with constructive feedback and they had introspection to their performance. Some faculty

members feel these sessions as outstretched and extensive exercise, because they were had to perform various other clinical as well as administrative duties.

Our study and reviewing literature had shown that good communication skills as well as confident behavior is must for maintaining good doctor-patient relationship. So, during studies of all phases of medical curriculum, interpersonal skills should be included longitudinally for medical undergraduates.^[20] The good behavior and better interpersonal skills of medical undergraduate are utmost important qualities among themselves to become a good doctor and build a healthy society and nation.

CONCLUSION

Our study had shown that this work place based assessment tool using mini-CEX was effective in evaluating the interpersonal skills of interns. Statistically significant improvement of mini-CEX scores of interns were seen during their visits to all encounters. In this tool constructive feedback given by faculty to interns has shown improvement in their communication skills as well as behavior in real time patients.

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