Has the inclusion of a longitudinally integrated communication skills program improved consultation skills in medical students? A pilot study

Sameena Shah¹, Marie Andrades¹, Fasia Basir², Anila Jaleel³, Iqbal Azam⁴, Muhammad Islam⁴, Rashida Ahmed⁵

¹Departments of Family Medicine, ⁴Community Health Sciences and ⁵Pathology, Aga Khan University and Hospital, ²Department of Medicine, Ziauddin University, Karachi, ³Department of Biochemistry, Fatima Memorial College of Medicine and Dentistry, Lahore, Pakistan

Abstract

Background: Evidence highlights a lack of communication skills in doctors leading to dysfunctional consultations. To address this deficit, a private medical college instituted curricular reforms with inclusion of a longitudinal communication skills program. A pilot study was undertaken to evaluate the effectiveness of this program by comparing the consultation skills of medical students of this college with a medical college without a communication skills program. **Methods:** A 4-station Objective Structured Clinical Examination (OSCE) was conducted in the third and final year. Mann–Whitney U-test was used to compare the difference in the distribution between OSCE stations total and construct scores. **Results:** At the end of the third year, 21 (31.34%), students of the study site (medical college 1 [college with integrated longitudinal communication skills program]) and 31 (46.26%) students from the comparison site (medical college 2 [comparable college without communication skills program]) consented. Medical college 1 achieved a significantly higher overall mean total station score of 68.0% (standard deviation [SD] =13.5) versus 57.2% (SD = 15.4) ($P < 0.001$). Significantly higher mean scores were achieved on three stations. At the end of the final year, 19 students (29.3%) from medical college 1 and 22 (34%) students from medical college 2 consented. The difference in overall mean total station score reduced from 9.2% to 7.1% (70.2) (SD = 13.7) versus 63.1 (SD = 15.2) ($P = 0.004$). The mean scores of both colleges decreased in "Patient presenting with Hepatitis C Report" station (P values 0.004 and 0.775) and in "Patient Request for Faith Healing Therapy in Diabetes Mellitus" station (P values 0.0046 and 0.036), respectively. **Conclusion:** Longitudinal communication skills in an undergraduate curriculum positively impacted consultation skills. Community-based training and faculty development are required to develop effective patient-centered consultation skills.

Keywords: Communication, patient-centered care, pilot project, undergraduate medical education

Introduction

Extensive global evidence highlights a lack of communication skills in doctors that leads to dysfunctional consultations. It has also been seen that doctors lack skills required for patient-centered consultations.[1,2] Literature confirms that communication skills can be learned and taught and indicates that patient centeredness decreases as medical students progress into the clinical years.[3-5] Effective communication is a key competency required by international regulatory and accreditation bodies for both under and postgraduates.[6-8] Various communication models and teaching methodologies for teaching and learning have been reported in international literature.[9-11] Pakistan Medical and Dental Council, the national regulatory authority, stresses the

Address for correspondence: Dr. Sameena Shah, Department of Family Medicine, Aga Khan University and Hospital, Stadium Road, Karachi, Pakistan.
E-mail: sameena.shah@aku.edu

development of effective communication skills. However, among the over ninety registered medical colleges, communication skills are taught in a handful only.[12]

In 2002–2003, a private medical college in Pakistan instituted Problem-Based Learning with an integrated longitudinal communication skills program. The Cambridge-Calgary model of communication skills is used as the foundational framework for this program.[7,13] In the first 2 years, teaching involves the development of basic to complex communication skills including disclosing bad news, communicating with angry patients, and dealing with myths and misconceptions. The skills are reinforced in the subsequent 3 years within the clinical rotations of the medical students. Teaching–learning strategies include plenary lectures, small group experiential sessions, video discussion, and reflective assignments.[14] Formative and summative assessment of communication skills takes place annually through specific objective structured clinical examination (OSCE) stations.[15]

The objective of this study was to evaluate the effectiveness of the communication skills program by comparing communication skills of its medical students (medical college 1 [college with integrated longitudinal communication skills program]) with medical students of a matching medical college without formal communication skills teaching (medical college 2 [comparable college without communication skills program]).

Methods

This was a pilot study to evaluate the effectiveness of the communication skills program. A private medical college (medical college 2) without formal communications skills teaching was chosen as the comparison group. It matched regarding socioeconomic background, curriculum, and academic schedule with the college teaching communication skills (medical college 1). Communication skills of the students of the two medical colleges were assessed longitudinally through an OSCE conducted in years three and five on the same cohort. For each OSCE, we invited all students available at the time according to the curricular schedules to participate in the OSCE.

The OSCE's consisted of four communication skills stations as this number has been found to measure communication skills with a good level of reliability.[16,17] Each station had a specific patient perspective built into the scenario and required an empathetic, nonjudgmental, and honest approach to elicit patients' ideas, fears, and expectations [Table 1].

Validity was ensured through multidisciplinary development of the stations on commonly encountered clinical presentations and was reviewed by faculty involved in teaching communication skills. To ensure inter-rater reliability, equal numbers of examiners were drawn from both the institutions. Examiner training and standardization was conducted through specially made teaching videos demonstrating desirable communication skills on the selected scenarios. Standardized patients were trained

Table 1: Patient scenarios in the 4-station objective structured clinical examination

Station	Gender	Age (years)	Presentation	Acronym	Consultation skills
1	Male	30	Worried patient presenting with prolonged fever	WPPF	Focus on history taking and eliciting patient perspective
2	Female	25	Anxious patient presenting with a headache	APWH	Focus on history taking and eliciting patient perspective
3	Female	40	Patient presenting with positive hepatitis-C report	PHCR	Focus on exploration of patient perspective and disclosing bad news
4	Male	55	Patient request for faith-healing therapy for diabetes mellitus	PFHT	Focus on exploration of patient perspective and dealing with myths and misconceptions

by examiners before each OSCE to ensure uniformity, and the Angoff method was used for setting the standard of each station.[18]

Ethical approval was granted by the Ethics Review Committees of both participating universities (1182-FM/ERC-AKU and 0769-ZU).

Instrument

We used a rating scale based on the Cambridge-Calgary Guide 1 for each station to assess the communication skills.[7,13] This contains six communication skills constructs in the form of subscales with individual items in each. The rating scale was modified according to the context and content of each station. The constructs included "Initiating the Session (ITS)," "Gathering Information (GI)," "Understanding Patient Perspective (UPP)," "Providing Structure to the Consultation (PSC)," "Building the Relationship (BTR)," and "Closing the Session (CTS)". For the disclosing bad news station, "Breaking the News (BTN)" construct was used instead of GI.

Statistical analysis

We analyzed the mean construct scores and the mean total scores with 95% confidence interval for each station of both OSCEs. Results of each OSCE station were converted into percentage scores derived from the sum of the construct scores divided by the total score and multiplied by 100. Kolmogorov–Smirnov and Shapiro–Wilk tests were used to observe normality of the scores. As the scores were not distributed normally, the Mann–Whitney U-test was used to compare differences in the distribution of construct scores and percentage scores by OSCE stations, universities, and year. Cronbach's alpha was calculated for each OSCE and for each station at the end of both years to test reliability. SPSS Statistics for Windows, Version 21.0, IBM, Armonk, New York, was used for data entry and statistical calculations.[19]

Results

Students of medical college 1 had higher mean percentage scores on all stations in both years. There was an increase in the scores from third to fifth year on stations focusing on history taking and patient's perspective in both medical colleges. The scores on stations focusing on the exploration of the patient's perspective decreased from third to fifth year in both medical colleges. The difference in scores between the two groups reduced in the fifth year.

At the end of the third year, 21 (31.34%) (10 male and 11 female) from the medical college with the longitudinally integrated communication skills program (medical college 1) and 31 (46.26%) (19 female and 12 male) students from (medical college 2) consented out of the 67 available students on each site. Similarly, at the end of the fifth year, out of the available 65 students, 19 students (29.3%) (8 male and 11 female) from medical college 1 and 22 (34%) (11 male and 11 female) students from medical college 2 participated after giving consent.

Comparison of mean percentage Objective Structured Clinical Examination station scores between the two medical colleges

At the end of the third year, medical college 1 achieved a significantly higher overall mean total station score of 68.0% (standard deviation [SD] =13.5) versus 57.2% (SD = 15.4) ($P < 0.001$).

At the end of the fifth year, the overall mean total station score of medical college 1 remained significantly higher, although the difference had reduced from 9.2% to 7.1% (70.2%) (SD = 13.7) versus 63.1% (SD = 15.2) ($P = 0.004$) [Table 2].

Comparison of mean percentage construct scores between the two medical colleges

At the end of the third year, the mean overall percentage score of each construct was significantly higher in medical college 1. At the end of the fifth year, medical college 1 received higher scores in the BTR construct on "Worried Patient Presenting with Fever (WPPF)" and "Patient Presenting with Positive Hepatitis C Report (PHCR)" stations with $P = 0.026$ and $P = 0.017$, respectively. In the UPP construct, marginally significantly higher scores were obtained on two stations again, "Anxious Patient Presenting with Headache (APWH)" and WPPF with ($P = 0.052$) and ($P = 0.083$), respectively. In the' Breaking the News'(BTN) construct on the PHCR station, the difference in scores between the two medical colleges was insignificant. (P 0.12) between the two medical colleges. Reliability was checked by calculating Cronbach's alpha for each OSCE at the end of each OSCE and was found to be 0.751 and 0.815, respectively [Table 3].

Comparison of mean station and construct scores within medical colleges over time

The mean station scores in APWH station of medical college 1 and medical college 2 increased in the fifth year with a

Table 2: Mean percentage scores and mean *P* values of the constructs and total objective structured clinical examination scores of both medical colleges

Construct	Mean (95% CI)		*P*
	Medical college 1*	Medical college 2†	
Third year			
Initiating the session	74.9 (71.6-78.1)	68.7 (65.6-71.8)	0.019
Gathering information	69.7 (66.3-73.0)	61.3 (58.0-64.7)	0.002
Understanding patients' perspective	62.5 (58.1-66.9)	47.8 (44.4-51.3)	<0.001
Providing structure to the consultation	66.5 (62.3-70.6)	56.6 (52.8-60.4)	0.001
Building the relationship	73.0 (69.3-76.7)	59.9 (56.2-63.6)	<0.001
Closing the session	52.0 (45.7-58.3)	36 (31.9-40.1)	<0.001
Total OSCE score	68.0 (65.1-71.0)	57.2 (54.4-59.9)	<0.001
Fifth year			
Initiating the session	77.9 (75.1-80.7)	71.8 (68.6-74.9)	0.007
Gathering information	73.1 (69.9-76.2)	67.7 (64.5-70.9)	0.029
Understanding patients' perspective	64.5 (60.7-68.3)	57.2 (53.5-61.0)	0.016
Providing structure to the consultation	69.0 (64.9-73.2)	62.9 (59.1-66.7)	0.041
Building the relationship	74.4 (71.5-77.3)	65.3 (61.7-68.9)	0.001
Closing the session	52.1 (45.3-58.8)	40.1 (33.3-46.9)	0.016
Total OSCE score	70.2 (67.1-73.3)	63.1 (59.9-66.3)	0.004

*Medical college 1: College with integrated longitudinal communication skills program, †Medical college 2: Comparable college without communication skills program. OSCE: Objective structured clinical examination; CI: Confidence interval

significant increase in medical college 2 scores with $P = 0.048$ and $P = 0.004$, respectively. The mean score of WPPF station increased significantly in both medical colleges with $P \leq 0.001$ and $P < 0.001$. However, the mean station score of medical college 1 decreased significantly in the disclosing bad news in PHCR station ($P = 0.004$), whereas it increased insignificantly in medical college 2 ($P = 0.775$). The mean station scores of "Patient Request for Faith Healing Therapy for Diabetes Mellitus" station decreased in the fifth year with $P = 0.0046$ and $P = 0.036$, respectively, for both medical colleges 1 and 2 [Table 3].

Limitations

As this was a pilot study, the results cannot be extrapolated widely. A pretest was not realistic in such a situation where students are entering the program for the first time. Increasing the number of stations to more than four may have increased the validity. As sampling was nonrandom with a low response rate, the results may not be generalizable. Responder bias is a possibility as students with better communication skills may have been more likely to have accepted the invitation to participate in the OSCE.

Discussion

This is the first pilot study exploring the outcome of communication skills training in the undergraduate curriculum in Pakistan. Improvement in communication skills as a result of formal teaching using a variety of approaches has been demonstrated

Table 3: Longitudinal comparison of the mean percentage construct and total scores for each station between and within universities

Construct score	Mean percentage score (95% CI)							
	Medical college 1*				Medical college 2†			
	Anxious patient presenting with headache	Patient request for faith healing therapy for diabetes mellitus	Worried patient with prolonged fever	Patient presenting with positive hepatitis-C report	Anxious patient presenting with headache	Patient request for faith healing therapy for diabetes mellitus	Worried patient with prolonged fever	Patient presenting with positive hepatitis C report
Third year								
ITS	81.2 (74.1-88.3)	74.3 (69.6-79)*	64.6 (59.3-70)	79.4 (71.7-87.1)	74.5 (69.2-79.8)	66.7 (61.9-71.6)	59.6 (53.4-65.8)	73.9 (66.3-81.4)
GI	72.1 (63.1-81.1)*	74.4 (69.1-79.8) EOP	65.3 (62.2-68.4)	66.8 (58.2-75.4)* BTN	61.5 (54.9-68)	69.5 (64.6-74.5)‡EOP	65.1 (59.7-70.4)	49.3 (41.3-57.3)§ BTN
UPP	56.1 (43.2-69.1)*	71.4 (64.4-78.5)	56.5 (50.2-62.7)	66.0 (58.4-73.5)*	35.4 (28.9-41.9)	63.9 (59.1-68.8)	51.5 (45.7-57.3)	40.6 (33.9-47.2)
PSC	60.5 (49.1-72.0)	73.9 (67.3-80.6)	59.6 (51.9-67.4)	71.8 (65.5-78.1)*	53.5 (44.6-62.3)	63.9 (56.9-70.9)	55.0 (47.1-62.9)	54.1 (46.9-61.2)
BTR	71.3 (61.6-81)*	76.9 (71.1-82.6)*	62.9 (56.0-69.8)	81.0 (75.1-86.8)*	56.5 (48.6-64.3)	66.0 (59.5-72.5)	56.9 (49.3-64.5)	60.3 (52.1-68.4)
CTS	40.8 (25.5-56.1)	61.2 (52.2-70.2)*	45.9 (30.9-60.9)	59.9 (49.0-70.8)*	27.2 (18.4-35.9)	46.9 (38.5-55.3)	38.9 (30.3-47.5)	31.3 (24.8-37.9)
Total score	66.8 (58.4-75.3)*	73.1 (68.4-77.9)*	61.0 (57.2-64.8)	71.2 (65.9-76.5)*	54.8 (49.1-60.5)	64.7 (60.1-69.3)	56.9 (51.4-62.4)	52.2 (46.3-58.2)
Fifth year								
ITS	82.4 (79.7-85.1)**	68.3 (62.9-73.7)	84.8 (80.1-89.6)**	76.2 (69.3-83)	76.9 (71.7-82.1)	62.6 (54.4-70.8)	78.7 (75-82.4)	68.9 (62.5-75.4)
GI	75.5 (70.2-80.8)	67.4 (61.6-73.1) EOP	85.1 (81.3-88.9)**	64.4 (57.5-71.3) BTN	67.9 (61.0-74.9)	63.3 (56.9-69.7) EOP	80.5 (77.7-83.3)	59.5 (53.3-65.8) BTN
UPP	70.9 (64.5-77.3)**	63.2 (58.2-68.2)	75.8 (68.7-82.8)**	48.4 (41.6-55.1)	61.9 (55.1-68.6)	55.6 (47.1-64.1)	66.7 (61-72.4)	45.4 (38.5-52.3)
PSC	74.4 (67.3-81.6)	57.6 (49.8-65.5)	83.7 (76.8-90.7)	60.3 (53.4-67.1)	63.2 (56.8-69.6)	53.9 (44.6-63.2)	75.2 (69.2-81.3)	59.3 (52.4-66.3)
BTR	72.0 (64.9-79.1)**	70.1 (65.5-74.6)	85.2 (80.3-90)**	70.3 (65.4-75.2)**	62.0 (54.1-69.9)	63.5 (55.7-71.3)	76.4 (70.5-82.2)	59.8 (53.3-66.3)
CTS	71.4 (62.9-79.9)	27.8 (16.3-39.3)**	79.7 (74-85.4)	29.3 (22.3-36.4)**	61.4 (53.3-69.4)	12.6 (5.6-19.6)	70.8 (60.6-80.9)	15.5 (7.6-23.4)
Total score	75.1 (69.9-80.3)**	62.6 (57.3-67.8)	82.9 (78.7-87)**	60.2 (55.3-65.1)	66.6 (60.5-72.7)	56.4 (49.3-63.4)	75.6 (71.8-79.4)	54.1 (49.1-59.1)

*University with integrated communication skills program; †Comparable college without communication skills program; **Significance, ‡EOP: Exploration of problem. EOP construct on "request for faith healing" station only instead of GI construct, §BTN: Breaking the news. BTN construct on hepatitis-C station only instead of GI construct. ITS: Introducing the session; GI: Gathering Information; UPP: Understanding patients perspective; PSC: Providing structure to the consultation; BTR: Building the relationship; CTS: Closing the session; CI: Confidence interval

repeatedly in various studies.[5,7] Based on this principle, the longitudinal integrated communication skills program of medical college 1 utilizes a range of evidence-based teaching and learning strategies in delivering the content.[4,13] The Cambridge-Calgary Guide assessment instrument has been rated very highly on the measures of psychometric properties, practicality, and overall value in a review of assessment tools.[20] Improvement in communication skills was sustained in the medical college with the longitudinally integrated communication skills program (medical college 1), even though the difference between the two colleges decreased over time. This can be attributed to a longitudinal program with earlier initiation of communication skills teaching in this college. Research has shown that communication skill programs introduced earlier initially lead to a greater improvement which declines over time, although it never reaches preintervention level.[21]

Communication skills required for eliciting and understanding patients perspective and building a patient–physician relationship decreased in both groups regardless of the additional teaching. This decrease was demonstrable in both colleges and can be attributed to an overall decline in patient-centeredness, increased cynicism, increased doctor centeredness, and matches previous literature findings.[12,22,23]

In our case, this decline may also be due to the concentrated communication skills teaching sessions in the first and second year, resulting in much better scores in the first OSCE, followed by a reduced rate of improvement in the clinical years commensurate with the reduced curricular time for communication skills teaching. One of the main challenges was deficiency of faculty training in teaching communication skills in clinical years in addition to lack of time in busy clinics. Limited time for communication skills teaching has often been reported as a challenge for teaching programs.[21] Other reasons included a deficit of desirable role modeling compounded by a lack of concurrent faculty development.[24] The majority of the undergraduate training is based in a private, highly specialized tertiary care setting with a focus on volumes and specific organ systems in specialty clinics causing the consultation to become disease oriented. It is well recognized that private hospitals' volume and revenue-oriented goals are frequently in conflict with an ideal environment for the reinforcement of skills that are oriented to elicit the patient's perspective that includes concerns, fears, and expectations of the patients.[25,26] The vast majority of patients' complaints stem from a real or perceived lack of patient-centered communication skills and supports this position.[24,26]

The consultation skills of the comparison medical college also improved longitudinally over time, and can be attributed to maturation of the students commensurate with experience. We postulate that training in wards and clinics through role modeling and observation on real patients improves consultation skills.

To counteract the drift toward the disease-oriented model, communication skills teaching requires curricular time in the clinical years. Contextual and repetitive teaching that is patient-oriented and is supported by appropriate role modeling by trained faculty in all clinics and wards will allow greater integration.[22,25] In addition, at all stages of teaching, special focus and attention need to be given to specific communication skills required for a patient-centered consultation that can build a therapeutic relationship and elicit the patient's perspective.[7,23] Running long-term and sustainable longitudinal programs for specific communication skills teaching/learning in appropriate contexts, with the support of trained and motivated faculty, is a well-recognized challenge.[23,27]

Conclusion

Longitudinally integrated communication skills teaching in an undergraduate curriculum positively impacted communication skills of the students. Undergraduate curriculum positively impacted communication skills. Community-based undergraduate training in the clinical years, supported by a longitudinal communication skills program with on-going faculty development, should ensure appropriate role modeling to reinforce a patient-centered approach.[26,28,29]

A large-scale study evaluating the effectiveness of undergraduate communication skills training in community-based settings is required to assess the success of the above-mentioned interventions in preventing the drift toward the disease-oriented approach.

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Conflicts of interest

There are no conflicts of interest.

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