

ORIGINAL RESEARCH ARTICLE

EARLY EXPOSING PRECLINICAL UNDERGRADUATE MEDICAL STUDENTS TO COMMUNICATION-SKILLS: A PRE-TEST POST-TEST EXPERIMENTAL STUDY

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ABSTRACT

Background: Effective physician-patient communication is integral to building confidence, improving patient compliance, satisfaction, and, avoiding mishaps, and, malpractice suits. Communication-skills (CS) training is an internationally accepted essential component of medical education. This study aims to assess the communication-skills knowledge of pre-clinical undergraduate medical students pre- and post- CS course. We expect an improvement in CS knowledge post-intervention.

Methods: Between March and September 2019, 100 first year pre-clinical undergraduate medical students at Chitwan Medical College were enrolled in CS course. The intervention was conducted in 10 team-based learning (TBL) sessions on selective study areas based on Calgary-Cambridge model. Attitude towards learning CS using communication skills attitude scale (CSAS) and assessment on knowledge of CS was conducted pre- and post-intervention.

Results: Among 100 students, 70% were males and 30% females. Positive attitude towards learning CS improved by 5%. Statistically significant progress was noted in post-intervention mean scores implying CS to be teachable and learnable. (Wilcoxon Signed ranks test $z=-6.178$ $p<0.001$). Knowledge on medical CS improved in the study participants irrespective of sex, entry-type, past-educational institute or attitude. Students with pre-intervention negative attitude showed marked improvement in post-intervention knowledge score ($z=-5.674$ $p<0.001$).

Conclusions: The intervention was effective in increasing students' knowledge of medical CS, but we did not assess the skills of the students. Continuation of this study is recommended to explore whether CS training could actually improve soft skills of medical students in our part of the world.

INTRODUCTION

Improper or inadequate physician-patient communication has been regarded as one of the factors affecting patient's compliance, and, treatment outcomes; thus unintentionally inviting workplace violence. Effective communication is central to improving patient satisfaction and avoiding legal battles. Undergraduate medical students in Nepal, acquired their CS knowledge entirely through observation of consultations by their supervisors.

The introduction of CS curriculum into the undergraduate medical syllabus of Tribhuvan University (TU) in 2008 officially paved way for formal CS course. This encouraged foreign aspirant medical students, as assessment of CS is a key part of international licencing examination. However, as of present context, these courses do not bear any academic consequence, is often neglected and left unattended. To address this, we planned to rigorously implement CS course among pre-clinical undergraduate medical students.

The study aimed to assess medical CS knowledge among undergraduate medical students pre- and post- CS course.

METHODS

All 100 first year preclinical students were invited to participate in the study on March 2019. Ethical approval for the study was obtained from Institutional Review Committee- Chitwan Medical College (Ref: CMC-IRC/075/076-122). A written consent obtained from the participants informed them of their rights to not participate in the study, and non-participation would not bear internal academic consequence. We instructed the students to complete a self-administered survey which included questions of socio-demographics (age, sex, entry-type and past educational institute). We divided the students into 10 groups of 10 students each. Ten sessions on theoretical aspects of medical CS employing TBL as teaching-learning method was conducted by the principal investigator. TBL is a team-oriented collaborative process that involves pre-class preparation, in-class individual, and, group readiness assurance testing, and application focused-activities. The immediate peer and faculty feedback, self-reflection, peer evaluation, and, self-assisted group learning are cornerstones of this strategy.¹ This group of study participants had previously been exposed to TBL.²

The CS course dictated by TU curriculum emphasized

patient-centered communication. Several didactic methods were used including lectures, PowerPoint presentation, e-books, video-tape, role-playing and small-group discussion. Selective study areas included building relationship, problem clarification integrated with specific history, obtaining consent, advising discharged patients for common conditions and arranging follow ups based on Calgary-Cambridge model.³ ⁴ Both formative and summative assessments were used as assessment tools. Participant's improvement in medical CS knowledge was assessed using pre- and post-intervention Single and Multiple-Choice questions, True-False statements constructed by a panel of experts. Attitude towards learning CS was assessed using CSAS.⁵ Data were analyzed using SPSS version 21. Chi-squared test was done to find the association between different demographic variables and attitude with knowledge scores. Wilcoxon Signed ranks test was done to assess the effectiveness of the intervention. The numerical values were expressed as mean \pm SD and categorical variables as percentage. Statistical significance was considered at $p < 0.05$.

RESULTS

The sample consisted of 100 preclinical undergraduate students: 70 (70%) males and 30 (30%) females with age ranging between 17-21 years (mean: 18.99 ± 0.95 years). Over 50% of the students had positive attitude towards learning CS (Table 1).

Table 2: Association between knowledge score and participant characteristics

| Variable | Knowledge Score | | | χ^2 | p-value |
|--|-----------------|---------------|----------|----------|---------|
| | Positive n(%) | Negative n(%) | Tie n(%) | | |
| Sex | | | | | |
| Male | 49 (70) | 16 (22.8) | 5 (7.2) | -5.207 | 0.000 |
| Female | 22 (73.3) | 6 (20) | 2 (6.7) | | |
| Entry-type | | | | | |
| Freshmen | 45 (67.1) | 18 (26.8) | 4 (6.1) | -4.508 | 0.000 |
| Old-batch | 26 (78.7) | 4 (12.1) | 3 (9.2) | | |
| Past Educational Institute | | | | | |
| Private Institute | 66 (77.6) | 16 (18.8) | 3 (3.6) | -6.352 | 0.001 |
| Government Institute | 12 (80) | 1 (6.6) | 2 (13.4) | | |
| Communication Skills Attitude Scale | | | | | |
| Positive | 28 (53.8) | 18 (34.6) | 6 (11.6) | -2.295 | 0.022 |
| Negative | 43 (89.5) | 4 (8.3) | 1 (2.2) | | |

Table 3: Effectiveness of intervention on communication skills learning attitude and knowledge

| Variable | Pre-intervention n (%) | Post-intervention n (%) | χ^2 | p-value |
|---|------------------------|-------------------------|----------|---------|
| Communication Skills Learning Attitude | | | | |
| Positive Attitude | 52 (52) | 57 (57) | 8.859 | 0.012 |
| Negative attitude | 48 (48) | 43 (43) | | |
| Knowledge Scores | 23.16 \pm 4.95 | 27.93 \pm 5.58 | -6.178 | 0.000 |

DISCUSSION

Transition from "physician-centred" to "patient-centred" approach of treatment in our context of "see-do-teach" themed medical school is challenging. The challenge of teaching CS is daunting as this soft skill is thought unteachable, unlearnable

Table 1: Characteristics of Study Participants

| Variable | Frequency (%) |
|---|---------------|
| Sex | |
| Male | 70 (70%) |
| Female | 30 (30%) |
| Entry Type | |
| Freshmen | 67 (67%) |
| Old Batch | 33 (33%) |
| Past Educational Institute | |
| Government Institute | 15 (15%) |
| Private Institute | 85 (85%) |
| Communication Skills Attitude Scale (Pre-intervention) | |
| Positive Attitude | 52 (52%) |
| Negative Attitude | 48 (48%) |

Knowledge on medical CS knowledge improved in the study participants irrespective of sex, entry-type, past-educational institute or attitude (Table 2).

Knowledge scored improved in both sets of students with either positive or negative attitude towards learning CS pre-intervention, however, students with pre-intervention negative attitude showed marked improvement in post-intervention knowledge score ($z = -5.674$ $p < 0.001$). There was a statistically significant improvement in post-intervention knowledge scores ($p < 0.05$) (Table 3).

The never-ending litigations against doctors with poor CS could be another factor driving students to enrol in the intervention. Also, newly admitted medical students could have unrealistic and high notions regarding importance of CS. It suggested early need of intervention among medical students.^{7,8}

Various strategies have been used worldwide in teaching medical CS with none superior to the other.^{9, 10} We opted inexpensive methods over CS labs and simulated patients (SP) due to financial constraints. All the study materials were in accordance with the TU curriculum, Calgary-Cambridge model and Kalamazoo Essential Elements Communication Checklists.^{3,4}

There are conflicting reports on change in attitude of medical students' post-CS course.¹¹ Our study reported improvement in learning attitude post-intervention^{12,13} as evidenced by CSAS score indicating attitude to be a learned response amenable to change. Dissimilar reports could have been because of different context and intervention methods.

In the present study, we employed TBL and small group teaching as teaching-learning method. Though small group teaching puts huge work burden on the trainer, only one trainer was utilized to minimize trainer discrepancies between groups,⁸ but, evaluation was conducted by other investigators to avoid biasness. Most medical schools in our part of the world use English as primary instructional method. The patients, however, use native language for communication during medical consultation. We employed Nepali language as both instructional and assessment method. The impact of using native language as instructional method has not been studied. On one hand it could be fruitful for future doctors wanting to work in Nepal but, on the other hand could not be as productive to foreign aspirants.

Defying CS learning as unteachable and unlearnable myth, students' performance improved significantly in post-interventional summative assessment scores, highlighting the effectiveness of early intervention. There was statistically significant improvement in knowledge scores in either sex, entry-type or past educational institute. This suggests every type of medical students could learn CS. Studies have shown a decline in CS of medical students with passing years. The present study needs to be more comprehensive to extract such a conclusion. Previous studies have utilised various strategies like OSCE

(Objective Structured Clinical Examination),^{14, 15} SP¹⁵, True False Statements, Multiple and Single Choice Questions to assess improvement in knowledge of the study participants. However, no goal standard assessment model has been suggested as different assessment methods have different values.^{9, 10, 16} Use of SP's and CS-lab has been widely reported in literature to evaluate CS of the students. The lack of funds hindered both our intervention and evaluation plan with SP's using CS-lab.

The early enthusiasm with encouraging participation was short-lived. During subsequent formative assessments, the progress and assessment scores were not promising. High-stake medical subjects' knowledge-based exams in our part of world could avert medical students towards learning CS. Also, TU provision of Not Fit for Technical education (NFTE) after 5 unsuccessful passing attempts in other basic science subjects could help lack motivation to studying CS.

CONCLUSION

Effective doctor-patient communication is a core physician competency fundamental to establishing relationship, successful diagnosis and treatment, and both doctor-patient satisfaction. Since CS can be learned and mastered by either gender, freshmen or old batch irrespective of past educational institute, it is worthwhile imparting the knowledge since early undergraduate years. CS training with visits to health centres and early patient exposure may benefit better students learning. This study can be replicated in other medical institutes to confirm the findings.

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CONFLICT OF INTEREST: None

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