

MEDICAL LEADERSHIP: IMPLEMENTING COMPETENCY BASED TRAINING AMONG UNDERGRADUATES POSTED IN COMMUNITY MEDICINE-A QUALITATIVE STUDY

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ABSTRACT

Background: Medical leadership, an essential skill for Indian medical graduates as per MCI has been rarely implemented as a training component during undergraduate medical education curriculum. **Objectives:** 1.To implement the leadership skill training program for the undergraduate medical students during the clinical postings at the department of Community Medicine through innovative teaching learning method 2.To assess the leadership skills acquired by the students at the end of teaching learning sessions by pre and post questionnaire and focus group discussions. **Methods:** Medical leadership as a competency based training was undertaken among 35 undergraduates posted in department of community medicine in the month of November-December 2018. Triangulation of free listing, pile sorting and buzz group discussions was done to elicit their perception on acquiring leadership skills during undergraduates training. This was followed by a semi-structured focus group discussion at the end of one month. The data was analysed using Visual Anthropac 4.98.1/X software. **Results:** Undergraduates perceived communication skills, calmness, decision making, approachable, empathy etc, as major characteristics of effective medical leader/leadership. The respondents admitted they perceived that there is no or limited scope of leadership development during undergraduate training prior to training program. The training program helped them identify specific areas to focus on leadership development such as positive personality development during the undergraduate period. **Conclusions:** Medical education reforms should support the implementation of leadership training in the MBBS undergraduate curriculum.

Keywords: Buzz Group Discussion, Free listing, Medical leadership, Pile sorting, Undergraduates

INTRODUCTION

Medical leadership is a highly-valued essential competency for Indian medical graduate and this has reflected in medical education reforms undertaken as latest as 2018 by Medical Council of India.(1) Leadership as a skill for Indian medical graduates was listed in the curriculum revisions dating back to 2012.(2) The recent advances in the undergraduate medical education regulations proposed by Medical

Council of India suggests a competency based undergraduate curriculum wherein the Indian medical graduate must be able to perform multiple roles as clinician, communicator, leader of a team, lifelong learner and professional appropriately and effectively.(1) Competency-based medical education provides an effective outcome-based strategy where various domains of teaching including novel teaching-

learning methods and assessment form the framework of competencies. The student should be trained to effectively communicate with patients and their relatives in a manner respectful of the patient's preferences, values, beliefs, confidentiality and privacy and to this purpose, a book on Attitude, Ethics & Communication was prepared by the Medical Council of India; the teaching faculty of medical colleges have been receiving training on this module since 2015.(3)

Leadership development often encompasses efforts to develop individual leaders as well as to build capacity for leadership within an organization.(4,5) Formal training in physician leadership has been shown to improve processes and outcomes in health care.(6,7,8,9) Currently there is minimal focus on formal training in this area for medical undergraduates. Globally, training programs have been attempted by medical professionals to integrate leadership training in First and Second year MBBS curriculum and reported successful learning outcomes.(10) Undergraduate medical education (UME) focussing on leadership training has been of interest in developed countries with varied approaches including classroom activities, simulation exercises, and integration into clinical experiences.(11) Innovation Collaborative study by Public Health Foundation of India (PHFI) in 2015 highlighted the inadequacies in current medical education curriculum for formal training in medical leadership skills.(12)

Doctors-in-training, especially undergraduates lack a formal, structured training in leadership owing to a hectic and rigid medical curriculum with sole focus on development of clinical skills rather than acquiring leadership skills by undergraduates. In the emerging health care scenario with diverse challenges, leadership training for medical undergraduates equips them with a skill-set to effectively address the challenges inherent in the health system, changing patients' perspectives and expectations from the graduating doctors to steer the national and regional health care delivery systems in progressive direction and improve the health care delivery at all levels including primary care, secondary care and tertiary care.

Since 2016, the department of Community Medicine, Tagore Medical College and Hospital (TMCH), Chennai, Tamil Nadu is training the undergraduate medical students during their clinical postings by implementing various innovative teaching learning (TL) methods and technology-based learning activities incorporating maximum student's participation.(13,14) Attitude, Communication skills-ATCOM2 module was successfully implemented for two batches of MBBS students from different academic years from 2016 and papers were published in international peer reviewed journals. The training focussed on enhancement of communication skills (doctor-patient communication) involving the students in role plays, dramas, demonstrations and tag-along sessions.(15)

A qualitative study was undertaken among trainee interns in CRRI postings in the department in October 2018 with the objective to gain insights to develop training module for medical undergraduates. The study identified undergraduate period as a "golden window" of opportunity to introduce medical leadership training module during Community Medicine clinical posting. Focus-group discussions (FGD) with the interns yielded suggestions that a structured training on medical leadership skills and personality development blended with immersive learning environments in undergraduate period will enable them emerge as confident leaders.

Hence, a leadership skills training was implemented to undergraduates with the following objectives: 1. To implement the leadership skill training program for the undergraduate medical students during the clinical postings in the department of Community Medicine through innovative teaching learning (TL) method 2. To assess the leadership skills acquired by the students at the end of postings by pre and post questionnaire and focus group discussions.

MATERIAL AND METHODS

An innovative medical leadership training module was introduced for third semester undergraduates posted in Community Medicine for a duration of one month during November-December 2018. A batch of 30 students were posted for one month duration, during which they had exposure to diverse learning opportunities including classroom-based activities and

field-based activities. Training methodology and material/content for this module were based upon findings of qualitative study (16) and FGDs conducted with interns posted in the department in October 2018. The training module consisted of three sessions (approximately 1-2 hours each) and the sequence of the sessions were i. first session conducted on the third day of the posting (duration of posting is one month) ii. second session-buzz group was conducted 7 days after the first session and iii. third session was conducted on the last day of the posting. The details of each session are as follows

First Session:

- a. **Pre-session assessment (20 minutes)** a pre-tested structured questionnaire which included items to assess their self-rating on four major leadership skills, perspectives on the scope of medical leadership training to acquire leadership skills during undergraduate period was used. All undergraduates (30) posted in practical posting during this period participated in this training module and written consent was obtained from the participants.
- b. **Free-listing exercise (20 minutes)**, was conducted after the pre-session assessment and the participants were instructed to list individually the perceived traits, characteristics and attributes of medical leader/leadership. This was entered in the Notepad data entry sheet and analysed on the same day by the authors in Visual Anthropac software, in order to identify the major perceived attributes of a leader/leadership. The top thirty attributes list with high Smith's S value was generated. The Smith's S (Smith's saliency score) refers to the importance, representativeness or prominence of items to individuals or to the group, and is measured in three ways: word frequency across lists, word rank within lists and a combination of these two.
- c. **Interactive lecture (30 minutes)** was conducted including elements of evidence-based, competency-based medical leadership traits/characteristics and effective leader behaviours embedding interactive training elements.

Second Session:

- I. Pile-sorting exercise(10 minutes) in which the participants were divided into groups of two and were asked to pile items of similar attributes from the top thirty attributes generated by free-listing exercise according to their own individual perception. Multiple piles (3-7) were submitted by each group. The pile-sort data were analysed by hierarchical cluster analysis and depicted in Figure1.
- II. Buzz Group session (40 minutes): The total number of undergraduates in posting was 30 and they were divided into 8 groups, each group consisting of 4-5 participants. Each round of buzz group involved two groups randomly picked from the total groups (8) by the facilitator. In each buzz round a specific question was allotted to the two groups to discuss within the group (generating buzz around the question) for duration of 3 minutes and write the responses as phrases on a sheet of paper provided (2 response sheets from two groups participating in the round), with groups number mentioned in the response sheet. After 3 minutes, one representative from each buzz group were invited to come up to the white board and list down the top 8 responses from the buzz-discussion on the white board (2minutes). The non-buzz group participants in the class were then asked to identify similar items from two different lists and give a common name connecting these listed items from both the lists and faculty member wrote down this list on the white board while facilitating the discussion of the class. In a similar fashion four rounds of buzz group were conducted for a duration of (10 minutes for each round). The process is seen in Figure 1.

The following questions were asked in each round of the buzz group

1. To enlist the traits/characteristics of a medical leader
2. To enlist the opportunities available during undergraduate period to develop leadership skills
3. To identify the challenges or barriers in developing leaderships skills in undergraduate period

4. To enlist the measures/steps to be undertaken to overcome the barriers mentioned
- III. Summary and Conclusion (15 minutes): After the buzz rounds, the moderator summarized the inputs from the discussion.

Third Session:

Focus-Group Discussion sessions (45minutes): The FGD session was initiated with filling up of a post-session assessment questionnaire (5 minutes) which replicated the same questions asked in pre-session assessment. Sixteen participants were invited to volunteer to participate in focus-group discussion sessions and two semi-structured focus group discussion sessions with eight participants per session were conducted concurrently by the facilitators (2 different facilitators) with the help of a FGD guide to incorporate objectivity and uniformity during FGD. In each FGD, the facilitator moderated the discussion to be focussed on (Figure 2&3)

- i. The traits/characteristics of medical leader/leadership
- ii. The scope of developing leadership skills during undergraduate period
- iii. The perceived challenges to develop leadership skills as an undergraduate
- iv. Two or more areas of leadership that this training module equipped them to develop during the one month of the posting in the department.

STATISTICS: The statistics performed were Smith's S value and Chi -square test for this study.

RESULTS:

This training program was implemented for batch of 30 undergraduates. In the free list exercise, the thirty perceived attributes of effective medical leadership listed by the participants based on descending order of Smith's S value were as show in Table 1 and the Smith's S values for top ten leadership traits are listed in Table 2.

The thirty items were then subjected to pile sorting exercise (Figure 4). Perceived leadership attributes were clustered into three groups as mutually related to each other (Figure 4).

The competencies of leadership such as communication skills, confident personality, initiative taking and team work were self-rated by participants using Likert Scale during pre and post intervention using a pre-tested, structured questionnaire. The responses were analysed for sixteen participants who participated in FGD at the end of the posting and responses were classified as 1) Average and below average and 2) Above average. The above average response was higher after the intervention for all the four leadership competencies and it was found to be statistically significant, having a p value of < 0.05 (Table 3)

The perception of the undergraduates about the scope of developing leadership during the undergraduate period was assessed using Likert Scale rating-(no scope, very little scope, little scope, good scope and maximum scope). The responses which included no scope, very little scope, little scope were grouped to indicate poor perception about the scope and the responses which included good scope and maximum scope were grouped to indicate favourable perception. The number of participants having favourable perception towards the scope of developing leadership during the undergraduate period was higher after the intervention (**16**) comparable to before intervention (**3**), this difference in perception was found to be statistically significant with the p value of 0.00001.

The attitude of the undergraduates mentioned as challenging to develop leadership as undergraduates was assessed using a Likert Scale rating-(strongly disagree, disagree, neutral, agree and strongly agree). The responses which included strongly disagree, disagree, neutral were grouped to indicate favourable attitude towards facing the challenges and the responses which included agree and strongly agree indicate unfavourable attitude in facing the challenges. The number of participants having favourable attitude towards facing the challenges was slightly higher after the intervention (**9**) comparable to before intervention (**7**), though this difference in perception was found to be statistically non-significant with the p value of 0.47.

The initiatives undertaken by the participants to develop leadership skills were categorized into two areas 1) personality development 2) availing existent opportunities (CME, seminars, conferences etc). The

number of participants focusing on personality development was higher after the intervention (13) compared to before intervention (7), this difference in perception was found to be statistically significant with the p value of 0.02. However the improvement in participants availing existent opportunities was minimal after the intervention (14) comparable to before intervention (11), this was found to be non-significant with p value 0.19.

Undergraduates perceived communication skills, calmness, decision making, approachable, empathy etc, as major characteristics of effective medical leader/leadership. The respondents admitted they perceived that there is no or limited scope of leadership development during undergraduate training prior to training program. The training program helped them identify specific areas to focus on leadership development such as positive personality development during the undergraduate period.

DISCUSSION

Doctors-in-training, especially undergraduates lack a formal training in leadership as such programs are not part of medical undergraduate training curriculum. Lack of studies implementing innovative leadership training in undergraduate curriculum from India in this area, suggests this remained a rarely studied topic.

We undertook a leadership training program including a series of innovative teaching learning activities such as free listing, pile sorting, buzz group discussions and focus group discussions (FGD) with third semester undergraduates posted in the department of Community Medicine. We found leadership attributes identified by them in congruence with literature available. Leadership attributes identified by them such as communication skills, bold, kind, approachable, decision making and empathy highlight the need for the development of their personality from early stages of medical school training. Training on development of personality for medical undergraduates might also contribute to develop leadership skills at innate level by enhancing inherent positive personality traits such as being bold, confident, kind equipped with good communication

skills. Our findings are similar to a study by AIIMS-Jodhpur, Rajasthan, which also identified personality development as grossly unrecognized training need in current medical curriculum. (17) As undergraduates they are attuned to focus mostly on developing clinical skills and patient engagement skills with limited scope to develop as leaders. A structured training on leadership skills and personality development in undergraduate period was identified as an effective way to approach medical leadership training for undergraduates in a qualitative study done with interns in 2018. (16) Health care delivery is emerging as a collaborative service delivery system and medical undergraduates in training need exposure to self-awareness on leadership development. We attempted to raise this self-awareness by introducing this training program and the emerging results revealed a felt need for training on leadership among medical undergraduates. Our study had similar findings as in Innovation Collaboration study by PHFI-2015 which highlights the inadequacies in curriculum for formal training in medical leadership skills. (12)

Role modelling is yet another methodology which can influence the medical undergraduates with positive influence to model their own behaviours and practices. It is defined as demonstration of skills, provision of feedback, and emulation of specific professional behaviours, as is established as an important component of undergraduate training. 18The implementation of the leadership training for undergraduates lead to intensive and multiple roundtable discussions sessions among the faculties of the department during preparation phase. This lead to heightened awareness among faculties on importance of grooming leadership skills for medical undergraduates and also enthusiasm to self-analyse leadership potential and improvement of the same among the faculties. This will translate in future towards exhibiting positive leadership styles and behaviours by faculties and will serve as learning platforms for undergraduates to mould their behaviours by observing faculties with whom they interact on a daily basis. We recommend that conducting TED style talks with medical professionals who are renowned for their leadership accolades can

act as a powerful trigger for training undergraduates in modelling themselves as leaders infusing their own learnings and aspirations. Incorporating training components on leadership development, assessment and training during advanced medical education training aimed at faculties by medical education units (MEU) in medical colleges across India will escalate the efforts towards undergraduate training in leadership in the departments.

Implementing a competency based leadership training for medical undergraduates yielded positive learning outcomes including self-reported satisfaction for the training provided and positive feedback on the innovative methodology used i.e, free listing, pile sorting and buzz group discussion from the undergraduates. The transfer effects of implementing the leadership training program resulted in improving the awareness on medical leadership for both the faculties and students alike. Immediate training effects on undergraduates were perceived in initiative taking during various activities, interactive participation during class presentations and incremental efforts towards personality development with effective communication skills.

Medical leadership training for undergraduates during Community Medicine postings seems feasible to identify leadership potential through self-awareness among undergraduates and to develop constructive influence on the young minds for successful leadership from early stages of medical education/training. Medical education reforms should support the mandatory implementation of leadership and personality development training in the MBBS curriculum incorporating innovative and creative teaching learning methods for fixed hours like 3-5 hours per semester during Community Medicine practical postings. This is bound to result in emergence of medical leaders who are epitome of quality medical education in Indian medical schools.

CONCLUSIONS

Medical education reforms should support the implementation of leadership training in the MBBS undergraduate curriculum

TABLES

Table 1: Perceived attributes of effective medical leadership traits among undergraduates, Chennai

S.n	Leadership traits	S.n	Leadership traits
1	Communication skills	16	Problem solving
2	Calm	17	Patience
3	Decision making	18	Discipline
4	Approachable	19	Guide
5	Empathy	20	Good attitude
6	Kind	21	Understanding
7	Listening skills	22	Loyal
8	Bold	23	Punctuality
9	Honest	24	Confident
10	Knowledge	25	Truthful
11	Impartial	26	Personality
12	Confidence	27	Eye-contact
13	Teamwork	28	Inspirational
14	Good appearance	29	Leading
15	Friendly	30	Good thinker

Table 2: Perceived attributes of effective medical leadership traits among undergraduates as per Smith's S value, Chennai.

Item	Frequency (%)	Average Rank	Salience
1. Communication skills	52.9	5	0.282
2. Calm	41.2	4.07	0.271
3. Decision making	35.3	4.92	0.223
4. Approachable	32.4	4.36	0.207
5. Empathy	29.4	6	0.136
6. Kind	29.4	5.3	0.171
7. Listening skills	26.5	5.44	0.13
8. Bold	26.5	2.89	0.2
9. Honest	23.5	4.13	0.164
10. Knowledge	23.5	4.75	0.163

Table 3: Self-rated categories on competencies of leadership traits among undergraduates, Chennai

Sr.no	Leadership competency	Pre-intervention		Post-intervention		Significance P Value
		Average & below Average	Above average	Average & below average	Above average	
1	Communication skills	9	7	1	15	0.002
2	Confident personality	11	5	1	15	0.002
3	Taking initiative	13	3	4	12	0.001
4	Team work	8	8	1	15	0.005

FIGURE LEGENDS

Figure 1 Buzz Group Session



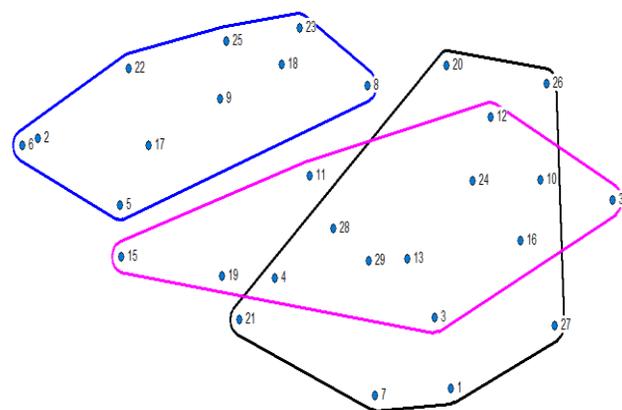
Figure 2 Focus Group Discussions



Figure 3 Focus Group



Figure 4: Pile sorting of various perceptions on medical leadership (hierarchical cluster analysis).



1. Communication skills
2. Calm
3. Decision making
4. Approachable
5. Empathy
6. Kind
7. Listening Skills
8. Bold
9. Honest
10. Knowledge
11. Impartial
- 12.

Confidence 13.Teamwork 14.Good appearance
15.Friendly 16.Problem solving 17.Patience 18.
Discipline 19.Guide 20.Good attitude 21.
Understanding 22. Loyal 23. Punctuality 24. Confident
25.Truthful 26.Personality 27.Eye-contact
28.Inspirational 29.Leading 30.Good thinker

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