"Cinemeducation" as a teaching–learning tool in Community Medicine for Phase II MBBS students

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ABSTRACT

Background: Many public health topics in the subject of Community Medicine have a psycho sociocultural aspect to them, and these are taught by traditional methods like didactic lectures with little or no interaction of faculty and students. This limits the comprehensive understanding of the students regarding sensitive issues. There is a felt need to improve the knowledge and understanding of many of these competencies among students through available cinema movies addressing these concepts. **Objectives:** 1. To assess effectiveness of "Cinemeducation" as a tool to teach identified competencies in Community Medicine subject. 2. To assess perception of students for "Cinemeducation" to enhance learning and communication skills. **Methodology: Study Design:** Nonrandomized intervention study. **Setting:** Department of Community Medicine, Government Medical College, Pali, Rajasthan. **Participants:** Year 2 from 2020 Batch. **Sample Size:** 159 students. **Sampling:** Complete enumeration. **Intervention:** All 159 students were divided into two groups and alternately shown movies, Toilet–Ek Prem Katha, Padman, Outbreak, and Steel Magnolias, or exposed to didactic lecture and were assessed using pre- and post-tests and student satisfaction and self-confidence in learning scale. **Results:** The post-test scores of cinemeducation showed an improvement by a mean of 1.88 ± 0.7 points. The self-confidence and learning scale showed that 86% of students agreed that cinemeducation was better than didactic lectures. The mean satisfaction index of cinemeducation as a teaching–learning method was 97.6. Three out of the four movies addressed the competency well, and the difference between the pre- and post-test scores was statistically significant following cinemeducation as compared to lectures. **Conclusions:** As the student correlates real-life situations in movies like Toilet–Ek Prem Katha, Outbreak, and Padman, they definitely understood the topic better with cognitive scores showing an increase.

Keywords: Cinemeducation, community medicine, education, medical, teaching–learning

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Background

Movies are increasingly being used to educate students about many of the essential aspects of medical profession.[1] Many public health topics in the subject of Community Medicine have a psycho sociocultural aspect to them, and these are

taught by traditional methods like didactic lectures with little or no interaction of faculty and students.[2] This limits the comprehensive understanding of the students regarding sensitive issues. There is a felt need to improve the knowledge and understanding of many of these competencies among students through available cinema movies addressing these concepts. Movies may address various consequences of diseases such as suffering, emotions, social conflicts, and ethical dilemmas.

Movies have been used as teaching–learning aids in diverse subjects/areas such as Microbiology, Pharmacology, medical ethics, doctor–patient relationship, clinical research, mental illness, and professionalism among others.[2,3] "Cinemeducation" was coined by Matthew Alexander, Hall, and Pettice in the journal Family Medicine in 1994 to refer to the use of clips from movies and videos to educate medical students and residents about the psychosocial aspects of medicine.[3] The new term is known as "cinemeducation," which is used at all the levels of the medical curriculum including the undergraduate and postgraduate studies and also in the newly added curriculum, attitude, ethics, and communication (AETCOM) modules.[4] "Cinemeducation" provides the opportunity for all the medical students to learn all the ethical and psychosocial subjects which are related to medicine by observing and reflection on the films.[5]

Structured viewing and discussions on public health issue-based cinema movies will help students to have a more comprehensive understanding of the topic.[6] Using movies in medical education has a great impact and favors a positive attitude in the field of education.[7] The Ever since National Medical Commission has introduced the revised curriculum as "Competency-based medical education" (CBME) in the year 2018;[8] it has proposed to use the new technologies for teaching–learning methods, and this intervention is one of them. The selected competencies for this intervention are regarding conduct of an outbreak investigation, Swachchta - Health and Sanitation, Menstrual Hygiene, and person-centric care in noncommunicable diseases like diabetes. The intervention was divided in multiple stages: briefing, pre-evaluation, structured group viewing of cinema movies on the topic, postevaluation/reflective writing, and debriefing to test cognitive and affective domains.

Objectives

1. To assess effectiveness of "Cinemeducation" as a tool to teach identified competencies in Community Medicine subject
2. To assess perception of students for "Cinemeducation" to enhance learning and communication skills.

Methodology

Study design: Nonrandomized intervention study.

Study Setting: Department of Community Medicine, Government Medical College, Pali, Rajasthan

Participants: Year 2 from 2020 Batch

Sample size: 159 students

Sampling: Complete enumeration.

Description of intervention

The intervention was divided into multiple stages: briefing, pre-evaluation, structured group viewing of cinema movies on the topic, debriefing, and postevaluation/reflective writing to test cognitive and affective domains.

A faculty sensitization session was initially organized to make faculty aware about the "Cinemeducation" to prepare the modus operandi of the whole process.

A total of 159 medical students of second professional MBBS course were taken for the study after obtaining a written informed consent from them.

All 159 students were divided into two groups as group I and group II. The following competencies are identified for Cinemeducation sessions:
1. CM 8.4 and 20.2 – Outbreak investigation and how to communicate with the family and patient with empathy and ethics on all aspects during an epidemic (Movie: Outbreak)
2. CM 4.2 and 8.3 – Motivation for menstrual hygiene health education (Movie: Padman)
3. CM 3.4 – Motivation for environmental sanitation and related Swachch Bharat Mission National Programme (Movie: Toilet–Ek Prem Katha)
4. CM 1.9 and 17.3 – Role of person-centric care in chronic diseases by family and community (Movie: Steel Magnolias)

One day in advance, all students were asked to give a pretest (MCQ and SAQ), after which they were introduced to the competencies, and lecture was taken before cinema show.

The process will involve five stages: briefing, pre-evaluation, group – viewing, postevaluation, and

debriefing. The faculty served as facilitators for the previewing and postviewing discussions.

Group I was assigned competencies 1 and 2-based movies, and they formed the nonintervention group for competencies 3 and 4 taught by traditional methods.

Group II was assigned competencies 3 and 4-based movies, and they formed the nonintervention group for competencies 1 and 2 taught by traditional methods.

Thereafter, the two groups were crossed over for the intervention.

Pre- and post-test (for "cognitive" domain), student satisfaction, self-confidence in learning scale (SCLS), and reflective writing (for "affect" domain) were completed. Likert scale was used to compare satisfaction levels – Cinemeducation versus traditional methods.

Study tool/s:

1. Pretest and post-test questionnaires for each movie.
2. Student satisfaction and SCLS for overall assessment of the teaching–learning method.

Data collection process

3. All students were asked to give a pretest (MCQ and SAQ) after being introduced to the competencies by an orientation lecture before the intervention. Later, they were subjected to a post- test and after the four sessions submitted their responses to the SCLS questionnaire. The questionnaires were validated by two subject experts, and the Cronbach's alpha was 0.94.
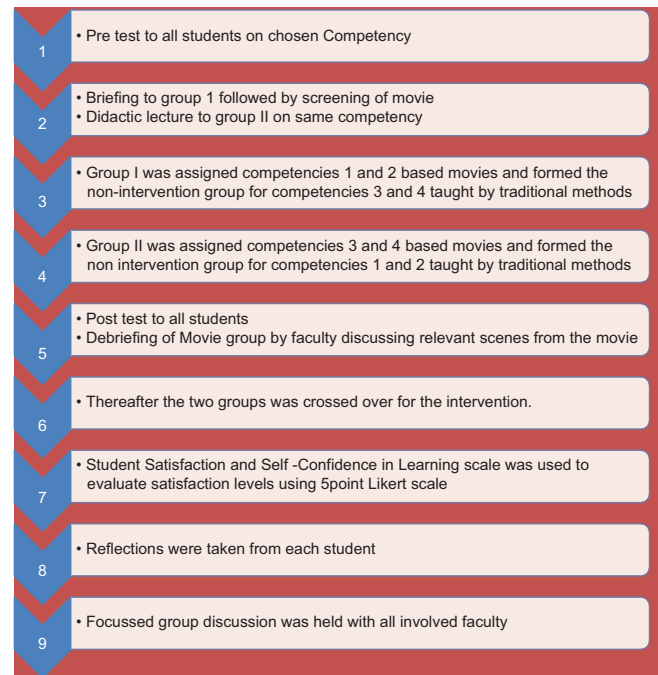
Data analysis

Quantitative

The data were analyzed on IBM Statistical Package for the Social Sciences (SPSS) for Windows, Version 22.0. Pre- and post-test (for "cognitive" domain), student satisfaction, and SCLS, and reflective writing (for "affect" domain) were completed. Likert scale for satisfaction levels of faculty and students was used – Cinemeducation versus traditional methods. Descriptive statistics was done by calculating the mean and standard deviation, and paired *t*-test was applied to compare pre- and post-test scores post cinema and post lecture (the level of statistical significance was taken as *P* value ≤ 0. 05).

Qualitative: Thematic analysis of the qualitative data of the student's reflections was carried out. Focused group discussion (FGD) was conducted among all the involved faculty following a structured FGD guide prepared and validated by a subject expert. Recording of the same was done after prior permission was obtained from all participants. The conducting team was composed of a moderator and time keeper. The recording was transcribed using the software QD miner lite software to analyze the qualitative aspects of the study. Inductive coding of the data was done. Initial codes were generated, themes and subthemes were identified, and conclusions were drawn.

Ethical considerations

The Institutional Ethics Committee of GMC Pali approved the study, and all the participating students were informed regarding the study and consent was taken from all of them in written. All the due permissions for screening of movies were taken from relevant authorities.

Flow Chart

1 • Pre test to all students on chosen Competency

2 • Briefing to group 1 followed by screening of movie
• Didactic lecture to group II on same competency

3 • Group I was assigned competencies 1 and 2 based movies and formed the non-intervention group for competencies 3 and 4 taught by traditional methods

4 • Group II was assigned competencies 3 and 4 based movies and formed the non intervention group for competencies 1 and 2 taught by traditional methods

5 • Post test to all students
• Debriefing of Movie group by faculty discussing relevant scenes from the movie

6 • Thereafter the two groups was crossed over for the intervention.

7 • Student Satisfaction and Self -Confidence in Learning scale was used to evaluate satisfaction levels using 5point Likert scale

8 • Reflections were taken from each student

9 • Focussed group discussion was held with all involved faculty

Results

A total of 159 students were invited for the study on cinemeducation. Among the students, 100 (62.8%) were boys and 59 (37%) were girls, and the mean age of students was 20.5 years. The mean scores with standard deviation for pretest and post-test are shown in Table 1, where the movie Outbreak showed the maximum difference, 2.49 ± 1.77.

In post test scores, the least difference was seen with respect to the movie Steel Magnolias, 1.15 ± 0.91, although pre- and post test differences were statistically significant in all four movies [Figure 1]. The mean differences in post-test scores of all four competencies are depicted in Table 2, where cinemeducation is compared with lectures. The mean difference in scores post viewing of movies shown was found to be 1.88 ± 0.7 [Figure 2]. SCLC showed that 86% of students agreed that cinemeducation was better than didactic lectures [Figure 3]. The mean satisfaction index of cinemeducation as a teaching–learning method was 97.6%. The thematic analysis of the reflections submitted by students and the themes which emerged have been represented by a word cloud [Figure 4]. The faculty FGD comprising six faculty

Table 1: Analysis of pre- and post-test scores of each movie screened

| Test | Mean±Standard Deviation Score | | | |
	Pretest	Post-test	Mean difference	*P*
Padman	5.59±1.69	7.24±1.77	1.65±0.97	0.000
Steel Magnolias	6.31±1.85	7.45±1.7	1.15±0.91	0.000
Outbreak	5.20±2.13	7.69±1.7	2.49±1.77	0.000
Toilet–Ek Prem Katha	5.05±2.18	7.28±1.67	2.23±1.24	0.000
Overall	5.54±1.05	7.42±0.82	1.88±0.7	0.000

on the use of Cinemeducation in medical education specifically from Department of Community Medicine was analyzed, and the summary of the findings is depicted in a diagram highlighting themes and subthemes [Figure 5].
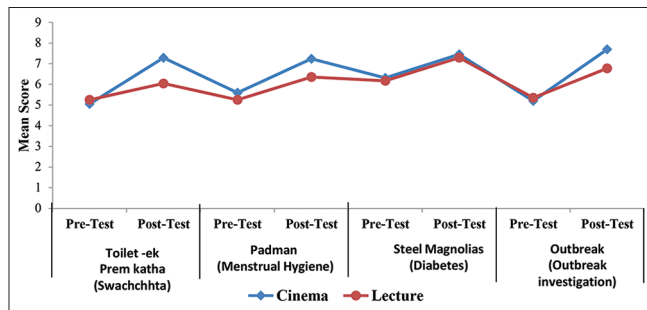

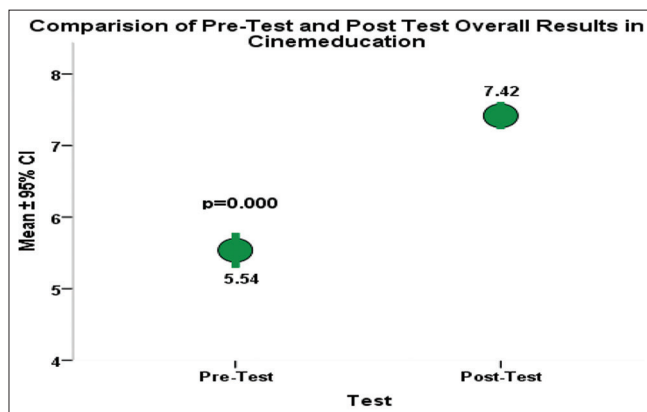**Figure 1:** Graphic comparison of pre- and post-test mean scores of all four movies screened

Figure 2: Overall result of post-test scores using Cinemeducation intervention

Discussion

Cinemeducation as a teaching–learning method is gradually gaining popularity in the field of medical education.[9] In our study, three out of the four movies addressed the competency well and the satisfaction level among both students and faculty was high. The post-test scores of the movie Steel Magnolias did not show any statistical significance, nor did it significantly capture student interest regarding their understanding about diabetes (self-care in NCDs) as compared to the didactic lecture on the topic. Language and cultural differences were a barrier for (less than 1%) some students as two of the movies were Hollywood movies. Students felt that the length of the movie was a major drawback, although the application of the competencies was better understood through the storyline of these public health-based movies rather than a didactic lecture. The mean

| Table 2: Comparison of pre- and post-test scores in moviewise cinema versus the lectures on the same topic			
TOPIC/MOVIE	**Method**		**P**
	Cinema	**Lecture**	**(Paired)**
Swachchta (Toilet–Ek Prem Katha)			
Pretest	5.05±2.18	5.25±1.73	0.000
Post-test	7.28±1.67	6.04±1.31	0.000
Menstrual Hygiene (Padman)			
Pretest	5.59±1.69	5.25±1.37	0.000
Post-test	7.24±1.77	6.35±1.46	0.000
NCDs – Diabetes (Steel Magnoilias)			
Pretest	6.31±1.85	6.17±1.19	0.000
Post-test	7.45±1.7	7.29±1.48	0.000
Outbreak investigation (Outbreak)			
Pretest	5.20±2.13	5.35±1.61	0.000
Post-test	7.69±1.7	6.77±1.25	0.000
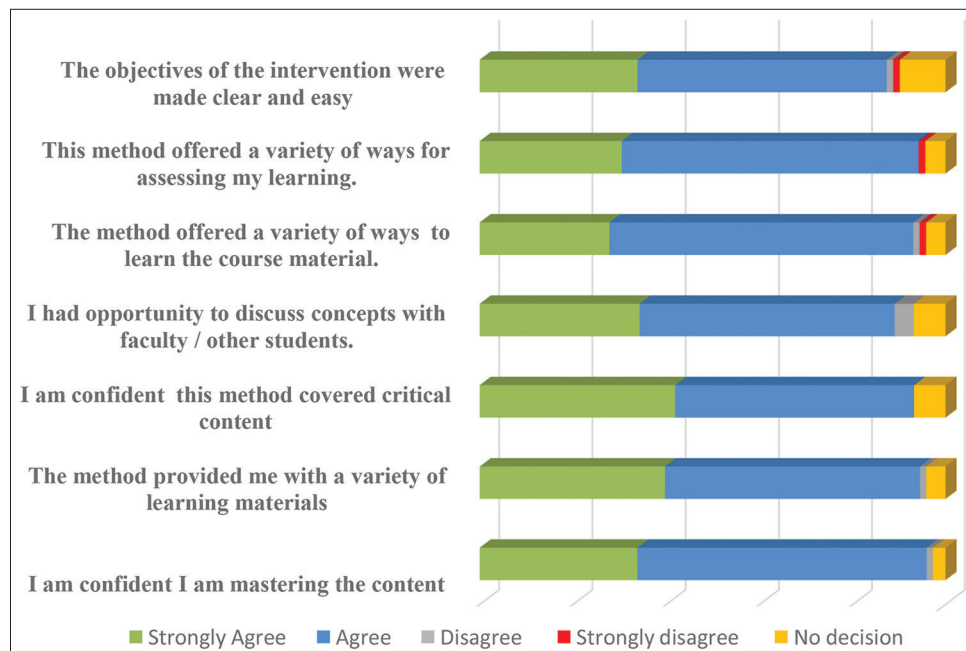
Figure 3: Key findings of self confidence and learning scale (SCLS) among the students

satisfaction index with Cinemeducation to enhance learning and communication skills by cinemeducation was 97.6%.

The use of cinemeducation has its pros and cons. Many times, the length of the movie was too long to cover the concept compared to a one hour lecture where the prepared slides covered all the factual information, statistics, key terms, and definitions and exam oriented knowledge as also stated in the study by Lumlertgul *et al.*[10] The movies however were perceived as a good mix of information and entertainment and captured the interest of the students as they were exposed to real-life situations with the protagonists trying to resolve the public health problems. In the debriefings, varying opinions and interpretations were a reflection of the student's capacity to comprehend in different ways what the director of the movie was portraying.[11] A similar

observation was made by Astha Das in her study recently, where she has stated that different interpretations by students have to be aptly moderated by faculty.[12] Overall, most participants reflected more critically on the topic at hand and got to know newer perspectives of the topic. The film helped to motivate the students to look closely at public health topics and their implications, especially in rural populations.

Like in our study with a high satisfaction index of 97.6% among students, multiple pieces of evidence show that it is very efficient to use interactive teaching using movie clips or screening whole movies for educating residents and medical students in the psychosocial aspects of medicine. The use of cinemeducation is useful in both building a humanistic perspective of doctoring and increasing students' motivation, engagement, and learning as stated by Kadivar *et al.*[13] Although some students interpreted the film in different angles, the postfilm discussions helped to bring up important points to be noted and remembered enhancing their understanding of the topic. A similar observation was made in the study by Goodwin in 2021.[14] As per the feedback of students, the 'discussion helped to clarify unclear questions and opened up new perspectives by making the public health connection to the film.[15] This similar experience has been cited by Rueb *et al.* and Gallagher P *et al.* in a public health film festival in Germany where postmovie discussions with the movie director itself enhanced the understanding of the subject.[7,16]

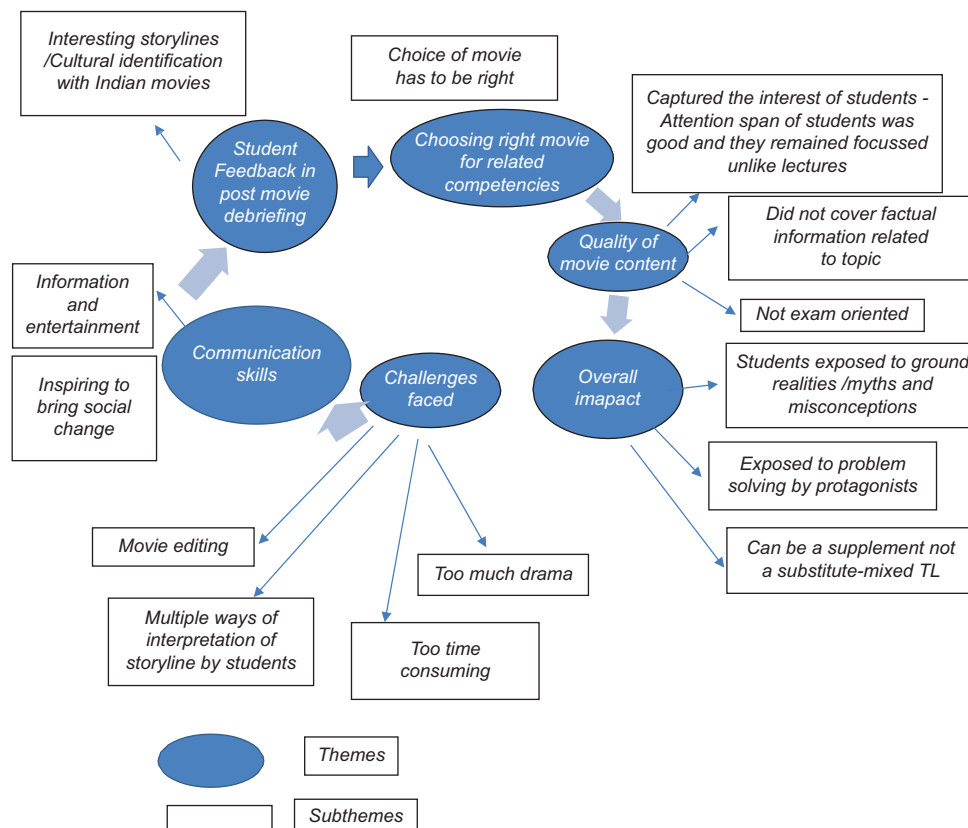**Figure 4:** Word cloud depicting students' perception of Cinemeducation

Figure 5: Diagram depicting perception of faculty on Cinemeducation

In today's medical field, communication skills, humanities, and professionalism are the aspects where instead of citing examples from the book, we should provide the students with the audiovisual mode to reflect on.[16] The screening of movies like Outbreak and Toilet–Ek Prem Katha should be made mandatory when these competencies are covered. Internationally, many countries have already adopted Cinemeducation in their curriculum, especially short films and documentaries.[17]

Implications of the study: Cinemeducation is a powerful teaching method, and this study provides evidence on the impact of social issue-based movies relevant to topics in curriculum of Community Medicine among undergraduates. Watching these movies was a tailored and structured experience for the students. Cinemeducation has the potential to have a long-lasting impact on students as they link learning to experiences depicted in the films. It can revolutionize the way important and sensitive public health issues are taught to the undergraduates in a more effective manner to enable them to communicate better and discuss sensitive issues among themselves and with the community.

The use of Cinemeducation to enhance learning and communication skills in Community Medicine has to be further explored with multiple batches. The faculty involved felt that this method can supplement but not substitute the traditional method of teaching, and hence, mixed methodology will be most suited to ensure a deeper psycho-socio-cultural understanding of the topic.

Limitations of the study

This study was restricted to a medical college in Rajasthan and brings out the perspective of only one batch of medicos. There are many more movies which match a particular competency; some are already in existence and some may be made in the future. It is important to remain vigilant to view any movie made on social issues from the lens of a Public Health Professional.

Conclusions

Cinemeducation is a useful tool to teach interdisciplinary topics like professionalism, medical ethics, and psycho sociocultural issues. Our study showed that three out of the four movies chosen were apt for being adopted as a permanent method in teaching the competency along with brief sensitization of the competency.

Recommendations

Cinemeducation can supplement but not substitute the traditional method of teaching, and hence, a balanced mix of both lectures and movies will be most suited to ensure a deeper psycho-socio-cultural understanding of important public health topics. The quality and content of more films which cover a certain competency comprehensively need to be researched further.

Conflicts of interest

There are no conflicts of interest.

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