RESEARCH ARTICLE

A quasi-experimental study of trigger films for teaching the doctor-patient relationship

FARAH KHALIQ, NONITA GANGWANI, SATENDRA SINGH

Abstract

Background: *It is challenging to teach the complexity of the doctor-patient relationship through attitude, ethics, and communication (AETCOM) modules, particularly without being formally trained and especially to first-year medical students who do not interact directly with patients. The present study was undertaken to assess the effectiveness of trigger films (TFs) or short movie clips as a teaching-learning tool to train undergraduate medical students on various aspects of doctor-patient relationships.*

Methods: *Two modules on various aspects of the doctor-patient relationship were developed using TFs and written case studies and implemented on Phase I medical students. Quantitative and qualitative feedback were collected from learners. Perception, understanding, and knowledge were assessed using pre- and post-questionnaires. The results of the feedback and questionnaires collected after using TFs were compared with those collected after using written case studies.*

Results: *There was a gain in knowledge and understanding after TF sessions, and TF sessions were rated much higher by the students than traditional methods. Most students found TFs to be an innovative and interesting tool. The satisfaction index calculated for TFs from the feedback of both students and teachers was above 96%.*

Conclusion: *TFs engaged the students' affective domain, promoted reflective attitudes, and linked their learning to experiences. It was reported not only to be interesting and engaging but also effective as a teaching tool.*

Keywords: *doctor-patient relationship; AETCOM; medical students; trigger films; written case studies; physician-patient relations; medical ethics.*

Introduction

Competency-based medical education was introduced by the National Medical Commission with the goal of creating an "Indian Medical Graduate" (IMG) who possesses the necessary knowledge, skills, attitudes, values, and responsiveness. For the IMG to function appropriately, ethically, and effectively, the attitude, ethics, and communication (AETCOM) module was introduced into medical education in 2019 [1]. However, this reform in medical education has generated apprehension among teachers as it is challenging for them to teach the complexity of AETCOM skills without formal training, particularly to first-year medical students who have limited direct patient interaction [2].

To teach the AETCOM module, a wide range of teaching-learning methods have been tried, including problem-based learning, case vignettes, the use of standardised patients, simulations, and role plays [3-5]. One innovative method for engaged learning is teaching with movies. However, showing the full film may not be feasible. This is where trigger films (TFs) come into play. TFs are short clips, typically lasting between 3 and 10 minutes, which are specifically designed to encourage dialogue, foster reflection, help trainees to confront their emotions, and provide trainees with opportunities to respond to ethical dilemmas. It is an effective approach to engage the affective domain of students, promote reflective attitudes, and connect learning to real-life experiences. The use of TFs in medical education has been successfully implemented in the Western context [6-9].

In a pilot study conducted by our team, we utilised TFs to instil core ethics competencies among both nursing and medical students. The study revealed that TFs significantly improved the students' understanding of bioethics [10]. Additionally, most students expressed enthusiasm for TFs, considering them an innovative and captivating tool. Encouraged by the positive response, we embarked on the present project, which aimed to employ TFs to teach the AETCOM module, emphasising the doctor-patient

Authors: **Farah Khaliq** (farahphysioucms@gmail.com, https://orcid.org/0000-0002-3651-5087), Director Professor and Head, Department of Physiology, University College of Medical Sciences, Delhi University, Delhi, INDIA; **Nonita Gangwani** (corresponding author — nonitag.ng@gmail.com, https://orcid.org/0000-0001-8119-5791), Assistant Professor, Department of Physiology, University College of Medical Sciences, Delhi University, Delhi, INDIA; **Satendra Singh** (dr.satendra@gmail.com, https://orcid.org/0000-0002-4857-659X), Director Professor, Department of Physiology, University College of Medical Sciences, Delhi University, Delhi, INDIA.

relationship. Our objective was to compare the effectiveness of TFs with that of traditional written case studies (WCS) and evaluate TFs as an engaging and effective teaching-learning tool for training undergraduate medical students in various facets of doctor-patient relationships.

Methods

The study was conducted in the Department of Physiology at University College of Medical Sciences, Delhi, after ethics clearance was granted by the Institutional Ethics Committee (IECHR-2022-54-6-R1). This quasi-experimental study with a mixed-method research design was conducted from June 2022 to February 2023. Since AETCOM is a mandatory part of the curriculum, all Phase I undergraduate medical students were eligible to participate in this study. However, only the data of those students who voluntarily participated and provided written informed consent were included. Students who were absent from either of the sessions were excluded from the study.

Development of study tools

Considering the diverse backgrounds and cultural differences among the students, we chose Bollywood (Hindi) cinema clips with subtitles in English rather than Hollywood clips. This decision aimed to ensure that everyone could understand and connect with the content. We selected short clips from freely available films on open-access social media platforms like YouTube to avoid copyright issues. The TFs were selected based on the ethical, legal, and societal principles covered in the module. WCS having the same content as that shown in the trigger films were prepared for the control group. Internal validation was done for these case studies to check if they depicted the same themes as the trigger films on which they were based. All the feedback given by the faculty was incorporated into them before using the case studies to teach students. The aspects of the doctor-patient relationship chosen for the two sessions were communication, informed consent, privacy and confidentiality, shared decision making, duties of a doctor, and breaking bad news, in the first session; whereas right to emergency medical care, empathy, autonomy, discrimination and boundary crossing were covered in the second session as depicted in Figure 1, available online only. A quiz, based on the TFs used in the sessions, was developed on Mentimeter, an online polling tool, to test the active involvement of the students. Mentimeter allows teachers to gauge the understanding and participation of students in real-time.

Preparing and validating the questionnaires

A distinct questionnaire was created for every module to evaluate the comprehension, knowledge, and attitude of the medical students in alignment with the teachings of the AETCOM module. Questionnaire 1, which was used in the first session, contained five open-ended questions designed to gather specific information about what the students had learnt and 10 clinical scenario-based multiple-choice questions to assess the change in applied knowledge and understanding. Since Questionnaire 1 was lengthy, we designed Questionnaire 2 to obtain improved responses. Questionnaire 2, which was made for the second session, consisted of two open-ended questions and 10 multiple-choice questions. A comparative feedback questionnaire was prepared using a five-point Likert scale to analyse the differences between the two teaching strategies (TFs or WCS) used, the experience of the students, and the suitability of the teaching strategy. It also included a few negative questions, such as "Did it distract you from the theme of the lecture?" The questionnaires were piloted on 11 residents in the department. Validation was done by two members of the Medical Education Unit of our institute. The same questionnaire was used in both groups.

Teaching strategies and conducting of the AETCOM module

The sampling technique was complete enumeration. The students were divided into two groups according to their roll numbers (85 in each group). Group 1 (intervention group) consisted of students with roll numbers 1 through 85, and group 2 (control group) had students with roll numbers 86 through 170.

Session 1: TFs were used as a tool for teaching in group 1. A WCS having the same content as that shown in trigger films was used for group 2. The content embedded in both formats was identical. The class started with a brief introduction and a pre-test. A few TFs, with a duration of 3 to 5 minutes each, containing scenes based on various aspects of the medical profession were shown to students in group 1. Each TF was followed by a short discussion based on it. Similarly, WCS based on the same theme as the TF were presented to group 2 via PowerPoint on the projector screen. Each WCS was followed by a short discussion based on it. The facilitators guided the discussion based on the ethical, legal, societal and communication aspects of the case. Each student was encouraged to provide suggestions and alternatives to the approach of the doctors depicted. It was reiterated that there may not be one correct way to resolve a case. The session was followed by a post-test. The approach allowed students to reflect, make choices, and defend their choices based on their values and learning. Crossover of the two groups of students was done for the second session.

Session 2: This was conducted a month later. The mode of teaching was reversed in the two groups for this module. TFs were used as a tool for teaching group 2, while WCS were used for group 1. This session was conducted in a similar way to session 1. To avoid any kind of teacher bias, one teacher (FK) taught both the sessions for group 1 and another teacher (SS) taught both the sessions for group 2. The schematic representation of the work plan is shown in Figure 1, available online only.

Both sessions were preceded by pre-tests and followed by post-tests. The same questionnaires were used in both

groups. To assess active participation of the students in both the sessions, we conducted a Mentimeter quiz. After completion of the two sessions, the students were asked to fill out a comparative feedback questionnaire on a 5-point Likert scale to analyse the differences between the two teaching strategies used. Faculty members of our department and other departments were encouraged to attend both the trigger film sessions and then their feedback was noted.

After one week, a separate session was conducted to teach the students reflective writing. Following this, the reflections of the students on the TF sessions were collected using Rolfe's model, which consists of the three interlinked steps: "What" (descriptive level of reflection), "so what" (theory and knowledge building), and "what next" (action-oriented reflection) [11]. Reflective writing was selected for data collection as it allows for the exploration of responses in depth and provides the freedom to investigate ideas and themes.

Statistical analysis

Quantitative

Data was analysed after scoring all the questionnaires. For the open-ended questions, one point was given for every relevant line and a total of those scores was given to that question. For multiple-choice questions, all the correct answers were summed up together and a score was given. All the marks were then entered into the same Excel sheet. These were then analysed using the SPSS 20.0 statistical package. Paired t-test was used for analysing the difference between results of the pre- and post-tests. An unpaired t-test was used to compare the responses that the two groups gave to the comparative feedback questionnaire. Data were presented as mean ± Standard Deviation (SD), and P value <0.05 was considered as significant.

The satisfaction index was calculated using the following formula:

$$\frac{[(n1*1) + (n2*2) + (n4*4) + (n5*5)] * 20}{(n1 + n2 + n4 + n5)}$$

In the equation, 'n' is the total number of students who gave the question "how satisfied were you with this mode of teaching" in the comparative feedback questionnaire a score using a 5-point Likert scale. The scores were rated on a 1–100 satisfaction index scale.

Qualitative

The reflections on the TF sessions were collected from the students, manually coded using semantic codes, and thematically analysed. The data was read several times in order to understand the context and meaning. Steps for thematic analysis were followed as per the AMEE (Association for Medical Education in Europe) guide No.131, which was also used for validation of the codes derived [12]. The codes were derived in an iterative manner, ensuring that the coded fragments retained their original meaning. Fragments

assigned to the same code were collected and compared, ensuring coding consistency. Similar codes were grouped under one category. Subsequently, subthemes and themes were derived to represent the voices of all participants.

Results

Out of the 170 students in the batch, responses were obtained from 163 (95.88%) in the first session, 148 (87.05%) in the second session, and 156 (91.76%) in the reflective writing session. In the first session, responses were obtained from 81 students (response rate = 95.29%) in group 1, and from 82 students (response rate = 96.47%) in group 2. In the second session, responses were obtained from 76 students (response rate = 89.41%) in group 2, and from 72 students (response rate = 84.70%) in group 1.

The comparison of the pre-test and post-test scores of TF sessions is shown in Table 1. A significant gain in understanding and knowledge was observed in both the TF sessions.

The comparison of the pre-test and post-test scores of WCS sessions is shown in Table 2. A significant gain in knowledge was observed in most aspects. However, understanding as determined by MCQs did not improve after the first WCS session.

Comparative feedback of TFs and WCS based on 5-point Likert scale scores was carried out after the sessions. There was a significantly higher score for TFs as compared to WCS (Figure 2, available online only).

When the post-test scores of TFs and WCS were compared, a significant difference (P=0.000) was found after session 1 for MCQ and for subjective questions on the topics doctor as a team leader, breaking bad news, and when confidentiality can be breached (P=0.000 for all). After the second session, significant improvement was found only for the MCQ questions (P=0.000). From the student's responses during the session, we found that with TFs, students were able to identify the key points that we wanted to highlight and could discuss them with enthusiasm. However, with WCS, there was a lack of enthusiasm and students also found it difficult to relate to the situation. With the TF method, students could relate to the characters of the film and, with a very strong conviction, put their observations forward. A few students could also discuss the nonverbal aspects and the body language of the characters that they observed and put forward new points for discussion. Although students could identify the movie and the plot on which the WCS were based, it was difficult for them to focus, and keep themselves engaged.

For TFs, the satisfaction index among students calculated for the question asking about satisfaction in the comparative feedback questionnaire based on 5-point Likert scale was 97%, whereas for WCS it was 67%. The satisfaction index among teachers — who attended only the trigger film

Table 1: Comparison of pre-test and post-test scores on the two trigger film sessions.

TF1 (n=81)	Questions	Pre-test Mean ± SD	Post-test Mean ± SD	P
MCQs				
	Score out of 10 (Understanding-based)	5.88±1.83	7.61±1.21	0.000
SAQs				
1	What are the components of effective communication between a doctor and a patient?	2.32±1.09	4.07±1.96	0.000
2	What are the duties of a doctor as a leader of a healthcare team?	1.35±1.13	2.66±1.36	0.000
3	What are the components of informed consent for a medical procedure?	1.11±1.09	3.32±1.55	0.000
4	What are the steps in breaking bad news to the patient or their relatives?	1.45±1.15	3.44±1.46	0.000
5	When can confidentiality be breached (can be broken)?	0.28±0.61	1.06±1.11	0.000
TF2 (n=76)				
MCQs				
	Score out of 10 (Understanding-based)	3.86±2.42	4.68±2.00	0.000
SAQs				
1	How can empathy be developed in a doctor?	0.88±1.05	2.43±1.81	0.000
2	What is the difference between boundary-crossing and boundary violation in a doctor-patient relationship?	1.31±2.39	5.27±3.66	0.000

TF1: Students taught with trigger films in the first session (group 1), TF2: Students taught with trigger films in the second session (group 2), MCQs: Multiple choice questions, SAQs: Short answer questions.

session — on the conduct of the session was 96.66% and on the content of the session was 98.88%.

Thematic analysis

Codes were identified from reflections and grouped under themes and sub-themes. Results of the inductive analysis of the reflections of students and teachers on the TFs are shown in Table 3.

Discussion

We conducted this study to analyse the change in knowledge and understanding of medical students on various aspects of the doctor-patient relationship with the use of TFs. We found that TFs were an effective method of teaching. They help provoke their inquisitive minds, generate curiosity, and make them think about being in the medical profession, and TFs could, thus, have the potential to contribute more effectively to making them compassionate doctors.

Perception of the teaching strategy

This theme described the value and worth attributed to TFs as a mode of teaching the AETCOM module. When asked about their feelings on the TF sessions, almost all participants responded that TF sessions were enlightening and impactful. They believed that these sessions would encourage students, who are future medical professionals, to behave as better doctors who are mindful of patients. According to the students, such lively interactive sessions made the class more interesting and conducive to learning. One participant expressed that the session was planned meticulously which made an important and difficult topic interesting and easy to understand. This was in sync with what other studies show [7,13].

Medical students had given mixed responses in another study done to assess the use of video clips from television series in medical education, with some saying the events portrayed were relatable to real-life situations, and others

Table 2: Comparison of pre-test and post-test scores on the two WCS sessions.

WCS 1 (n=82)	Questions	Pre-test Mean ± SD	Post-test Mean ± SD	P
MCQs				
	Score out of 10 (Understanding-based)	6.68±1.81	6.71±1.59	0.78
SAQs				
1	What are the components of effective communication between a doctor and a patient?	2.30±1.10	4.18±2.02	0.000
2	What are the duties of a doctor as a leader of a healthcare team?	1.54±1.18	1.67±1.14	0.36
3	What are the components of informed consent for a medical procedure?	1.29±1.18	3.23±1.84	0.000
4	What are the steps in breaking bad news to the patient or their relatives?	1.87±1.19	4.42±2.13	0.000
5	When can confidentiality be breached (can be broken)?	0.43±0.71	1.75±1.04	0.000
WCS 2 (n=72)				
MCQs				
	Score out of 10 (Understanding-based)	4.61±1.83	6.48±2.23	0.000
SAQs				
1	How can empathy be developed in a doctor?	0.76±0.79	2.45±1.84	0.000
2	What is the difference between boundary-crossing and boundary violation in a doctor-patient relationship?	0.38±1.23	4.75±0.29	0.000

WCS1: Students taught with written case studies in the first session (group 2), WCS2: Students taught with written case studies in the second session (group 1), MCQs: Multiple choice questions, SAQs: Short answer questions.

saying that they were exaggerated and overdramatised [7]. Our students perceived teaching through TFs as informative and entertaining. They appreciated it as an innovative tool, that was quite different from traditional teaching methods.

Active participation of students

The online quiz which was interspersed throughout the session showed that almost 98% of students were actively participating. Nearly all students described the session as engaging, thrilling, or lively. Each TF, being of short duration (3 to 8 minutes), was able to keep the audience (students) engrossed. Each TF was followed by a discussion on it where the teacher tried to bring out the principle or theme to be highlighted. This made the session interactive. Most students felt that critically analysing such situations using films was not only interesting, relatable and engaging but also highly fruitful in the process of learning. This is suggested by the following quote from a student — "The session helped me to grasp various essential topics in a crisp time. It was an engaging and interesting session". There was a sense of excitement that prevailed with each TF, and TFs were rated as

a better modality of education than WCS by most students.

Teachers perceived these sessions to be convincing and highlighted movie clips as an effective tool for engaging students and introducing key concepts to them. Teachers, in other studies, also perceive this methodology as being active and superior to the passive methods [14]. They emphasised that this modality is beneficial for adult learners, promoting the development of humanistic, empathetic, and rational skills [15].

Gain in knowledge and understanding

In the present study, students gained more knowledge and understanding of concepts when they were taught using trigger films rather than written case studies. Other studies also showed that video case studies increase the knowledge of students who were learning different professional competencies [16-20]. They provide a visual representation of the scenario, enhancing the process of understanding. A similar gain in knowledge of ethics and professionalism is observed in a previous study we had conducted [10]. This is

Table 3: Results of the thematic analysis of the reflections of students and teachers following the TFs

Themes	Inductive category	Exemplary quotes
Perception of the teaching strategy	• Refreshing • Interesting • Entertaining • Novel • Enriching • Impactful	• This session felt like a breeze of fresh air. • The session was planned meticulously which made such an important and difficult topic, easy to understand and interesting through the use of TFs. • TFs are the best possible way to fascinate the students and make them aware of how things should take place. • These types of sessions help us in understanding the soul of the topic better. • Beautiful initiative to make such emotionally mature topics understandable. • The analysis of clips gave me a neo-vision to act in such situations.
Active learning	• Engaging • Thrilling • Interactive • Lively	• I have never been so attentive in the class • The session was so engaging and thrilling. • I learned a lot as it was very interactive. • The quiz was so much fun, it made me attentive throughout.
Improved knowledge and understanding in the cognitive domain	• Better understanding and learning • New learning • Added to my knowledge and personality • Deeper comprehension • Longer retention	• These short films help me to learn fast and retain. • Since audio and visual memory stays for way longer duration and it was easier to understand as well. • They provide a visual aspect of the entire scenario, enhancing the entire process of understanding. • The session helped me to grasp various essential topics in a crisp time. It was an engaging and interesting session. • The audio-visual aids help to retain the learning for a longer period of time & such interactive sessions really make the class more interesting and conducive for learning.
Improvement in psychomotor domain (skill development)	• Skills enhanced • Triggered social skills • Extra-academic skill development • Communication skills	• While the medical curriculum teaches us to tackle medical situations related to patients, there are several associated problems to be faced while practicing medicine. These sessions are here to fill this very gap. • Helping us to be better prepared to face the real problems beyond the wards. • TFs helped us to gain experience in the practical lives of doctors that we are going to jump into. • Sessions like these enhance our interest in the medical field and open the door for imagination and creativity and make us think about necessary aspects of being in the medical profession.
Impact on the affective domain	• Powerful message • Introspect deeply • Deep impact on the psyche • Ethical/empathetic • Building qualities • Emotional • Heartening • Thoughts and emotions got imprinted in the mind.	• The session led to the engraving of numerous moral values in us related to the medical field, which can be retained for a long time due to the way it was presented. • The session helped me to introspect deeply. • These trigger films were like boosters for our emotional quotient and empathy development. • These sessions will encourage students i.e. future medical professionals to behave as better doctors, who are mindful of patients. • The emotions and the real-life situations made a deep impact on my psyche. • A lively interactive session that instilled a feeling, an emotion of responsibility as a doctor. • These sessions will encourage students (future medical professionals) to be mindful of patients' comforts and rights.
Satisfaction	• Feel-good effect • Holistic development • Help in making quality doctors • Help in making sensitive human beings	• More such sessions will be instrumental in our training to not just be good clinical practitioners but also be sensitive human beings in society. • TFs are the best possible way to fascinate the students and make them aware of how things should take place. • This has the potential of making quality doctors.

contrary to the findings of other studies that found that videos and conventional lectures are equally effective or that conventional lectures are more effective than videos [21, 22]. However, in these studies, students retained information for longer when they were taught using video clips. Further, students preferred learning through trigger films as mentioned in their feedback forms. TFs were easier to understand and grasp as the audio and visual memory is retained for a longer duration [21].

In the present study, nearly all participants appreciated TF sessions as a form of experiential learning. Experiential learning is the construction of knowledge and meaning from real-life experiences [23]. The TF sessions enabled them to appreciate the feelings of patients and developed their empathy. The improvement in knowledge and understanding in all three domains (cognitive, psychomotor, and affective) could be appreciated from our pre- and post-test results.

The impact of TFs was most palpable in the affective domain. The emotions and scenes portrayed in the TFs that mimicked real-life situations made a deep impact on their psyche. As quoted by one of the students, "These trigger films were like boosters for our emotional quotient and empathy development". Students felt that TFs helped them to reflect deeply and gain insights into the lives of doctors. Similar improvements in attitudes and beliefs are also noted among prelicensure nursing students using TFs combined with facilitated debriefing [24]. The use of more such sessions can be instrumental in the training of medical students to help them not just be good clinical practitioners but also sensitive human beings in society.

Satisfaction

The satisfaction index calculated using the feedback given by both students and teachers was very high (above 96%). Most participants rated TFs as being more satisfying and preferable to traditional methods. They reported that they had a "feel-good effect" and considered this method ideal for holistic development. Almost all the students desired that more such sessions be conducted in the future. The teachers were similarly satisfied. They felt that the students connected better when they learned theoretical concepts through real life situations they can understand. According to one of the teachers, *"Even if a part of the topic being taught is conveyed through such directed, interesting audio-visual (movie) inclusion, it would surely have a great say in livening up the education and help in deeper comprehension and longer retention of subject matter"*

The findings of this study are limited to a specific institution, so their generalisability may be limited. However, the study highlights the efficacy of innovative teaching methods, particularly for new medical students who have limited contact with patients. TFs can be effective in promoting a patient-centred attitude, leading to better patient care and a positive work environment. To further enhance learning, future studies should explore new tools, and faculty and residents must be provided the relevant training. Establishing a repository of TFs would facilitate shared learning among institutions.

Conclusion

TFs help students by engaging the affective domain, promoting reflective attitudes, and linking their learning to experiences. They allow students to critically analyse ethical dilemmas in doctor-patient relationships through an engaging and relatable medium. Trigger films are not only interesting and engaging but are also highly effective in the process of learning.

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