DOI: https://doi.org/10.4038/seajme.v18i2.604

Original Research Paper

SWOT Analysis for Strategy Building to improve Learning Outcomes of Prescription Communication in Medical Students

Murthy M.B., Ramanand S, Karande V. B, Gaidhankar S, Sakhare P.

Abstract

Introduction: Despite being a certifiable competency, students find it difficult to learn communication skills effectively. Learner initiated individualized strategies can be developed by students by making utmost use of strengths and opportunities while minimizing the weaknesses and threats. Application of SWOT analysis (strength, weakness, opportunities and threats analysis) by students for establishing learning strategies could be evaluated for its effectiveness in improving learning outcomes.

Methods: After seeking IEC approval, baseline formative assessment for prescription communication was conducted. Participants were briefed about SWOT and were helped with plotting SWOT tables and building individual strategies. After one month, second formative assessment was conducted. Outcomes of two assessments were compared. Students' perception of utility of SWOT analysis was assessed by scoring on a 6 point likert scale.

Results: 83 participants who consented to participate in the study and present for all 4 sessions conducted were enrolled. There was a significant improvement in post test scores from mean of 5 (1.02 SD) to 7 (0.4 SD). 98% of students scored a 3 or more on likert scale indicated a positive perception of utility of SWOT analysis based strategies in improving learning outcomes.

Discussion: Educational research studies based on SWOT analysis has been used for situational analysis as well as to develop strategic countermeasures in medical education but not for leverage of learning outcomes.

Conclusion: SWOT analysis for strategy building to improve learning outcomes of prescription communication in medical students is effective as well as perceived as an important tool by students.

Key words: Prescription communication, SWOT analysis, Learning outcomes

Introduction

Implementation of Competency based medical education has brought up two important changes in the medical curriculum. It has made medical education learner centric, as well given a lot of emphasis to communication in medical education (Supe, 2019 and Patankar, 2023). One of the essential, certifiable competencies in second MBBS Pharmacology curriculum is not only writing a prescription, but also its communication to the patients. It has been observed that students exposed to these competencies find it difficult to learn communication skills as effectively as it should be

Rajarshi Chhatrapati Shahu Maharaj Government Medical College, Kolhapur, India

Corresponding author: Dr. Mangala Bhaskar Murthy
Email: mangalabhaskarmurthy@gmail.com

and hence demonstrate poor learning outcomes in this field.

SWOT analysis is a business tool that helps in assessing market situation with respect to strength, weakness as well as opportunities and threats to a product so as to develop strategies that assist in decision making and optimizing benefits. Same tool can be of help to leverage learning by a student by helping him to draw a SWOT analysis and set a strategic plan to reach well defined learning goals. Thus it was hypothesized that learning of communication skills is driven by individual needs and has to be dealt with on case to case basis and this approach could lead to betterment of learning outcomes. Learner initiated individualized strategies can be developed by students by making utmost use of strengths and opportunities while minimizing the weaknesses and threats. Thus application of SWOT analysis (strength, weakness, opportunities and threats analysis) by students for establishing learning strategies could be evaluated for its effectiveness in improving learning outcomes.

Methodology

This was an educational interventional study with quantitative and qualitative components, conducted over a period of 5 months on students of phase 2 MBBS at Rajarshi Chatrapati Shahu Maharaj Government Medical College, Kolhapur, India with the aim of evaluating the effectiveness of application of SWOT analysis for improving learning outcomes in prescription communication as well as to assess the extent to which students perceived the importance of the above initiative for improving learning outcome. Approval from Institutional Ethics Committee was sought before beginning the study.

Quantitative component of study consisted of comparison of baseline and second formative assessment scores for prescription communication. Qualitative component of study included preparation of SWOT tables by students, suggestion of strategies based on SWOT table by teachers and application of these strategies by students for betterment. Second qualitative component was to assess the perception of importance of SWOT based strategies by students in improvement of learning outcomes.

All second MBBS students were taught about principles of prescription communication. Ten therapeutic case scenario based prescriptions were prepared by faculty members based on pharmacology topics covered during first term as shown in table 1. Checklists for assessment of appropriateness of prescription communication of above prescriptions were prepared by faculty members beforehand. The checklist had a maximum score of 10 for each prescription and each step was scored as per the importance of the step in the process of communicating the prescription as depicted in table 2. Checklist was peer evaluated by faculty and shared with students and other faculty members so as to maintain uniformity in teaching as well as assessment process. The objectives of study were briefed to the whole class and students were invited to participate in the study. Only students who volunteered to participate were included as participants after obtaining a written informed consent. Baseline formative assessment was conducted by asking participants to complete communication of one of the prescriptions from the list to standardized patients and their outcome assessed by checklist shared with them (Scored out of 10 by faculty members). This yielded a baseline assessment score for each student.

Table 1: List of hypothetical case scenario based prescriptions

Sr. No	List of dosage forms chosen for prescription communication	Hypothetical case scenario
1	Timolol eye drops	Galucoma
2	Calamine lotion	Eczema
3	Turpentine liniment	Osteoarthritis
4	Omeprazole enteric coated tablet	GERD
5	Aspirin dispersible tablet	Headache
6	Bupropion Transdermal patch	Migraine
7	Lumefantrine +artesunate tab	Falciparum malaria
8	Insulin aspart pen	Diabetes mellitus
9	Salbutamol Metered dose inhaler	Bronchial asthma
10	Budesonide Rotalhaler	Bronchial asthma

Table 2. Scoring pattern of prescription communication

Sr. No	General prescriptions of prescription communication check list	Score for each step
1	Greet the patient	0.5
2	Seek history, active listening with eye contact	0.5
3	Convey the diagnosis	0.5
4	Describe the importance of drug administration for the particular disease- consequences of noncompliance to instructions	1
5	Explain the goal or therapeutic objective -symptomatic, curative, palliative	1
6	Explain drug administration in simple steps- including route , method of administration, dose, frequency, duration of treatment	3 (0.5 points each while 1 point for right method of administration)
7	Stress on important points of administration like Close inner canthus of eye for timolol eye drops, do not break capsule for enteric coated tablet, consumption of lumefantrine with fatty meal, hold breath for 10 secs after inhalation for metered dose inhaler, do not rub for lotion, antiseptic measure before injection, etc.	1
8	Add a note on important adverse effects, which to ignore and when to contact doctor	1
9	Ensure patient understanding and ask him/her to repeat instructions.	1
10	Give instructions for refill, reassure and thank the patient.	0.5
	Total score	10

Second part of the study comprised of qualitative component of briefing the participants about SWOT analysis. Resource material including articles that explain principles of SWOT analysis and drafting SWOT table were shared with students in a large group session. Later, a focused group discussions with 10 students per group was conducted to help them identify their strengths and weaknesses, opportunities and threats with regards to prescription communication. They were also extended help in building individual strategies to improve learning

outcomes by optimizing their strengths and opportunities available and minimizing negative factors like weaknesses and threats. Thus, at the end of the session, each student had an individual SWOT table with strategies suggested for improvement. Students were given 1 month time to apply these strategies.

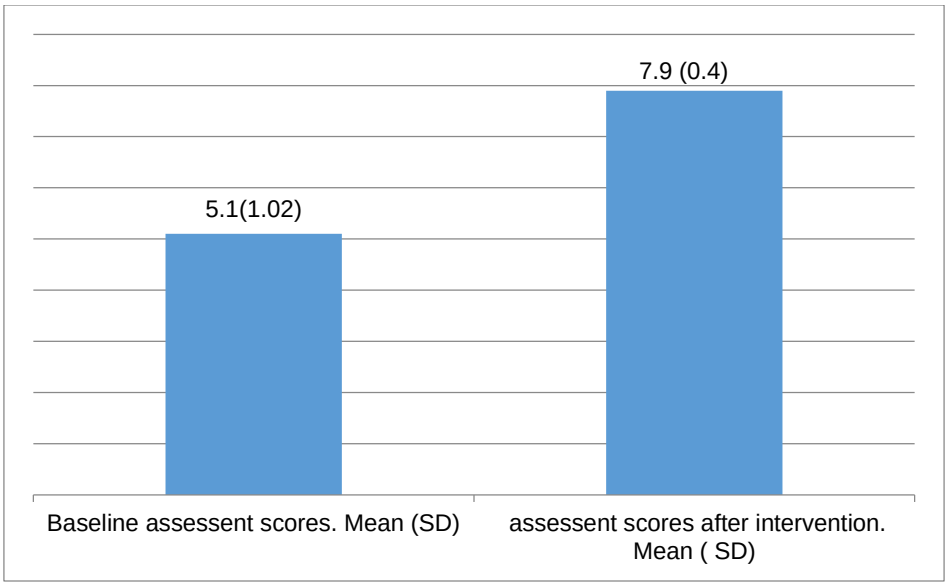
At the end of one month, a second formative assessment was conducted for prescription communication where students were assessed again for one of the prescriptions from table 1 based on same checklist (scored out of 10). Outcomes of second formative assessment were compared with baseline to see the effectiveness of the entire exercise.

Students were also asked to score on a 6 point likert scale with respect to their perception of utility of SWOT analysis in improving learning outcomes (Likert scale ranged from 0-not useful, 1- barely useful, 2- interesting, 3-I would like to use it again, 4- its useful to 5- it's definitely useful).

In the analysis, a significant increase in second formative assessment score as compared to baseline scores by using paired T test and 80% of students scoring 3 or more on Likert scale with respect to their perception of utility of SWOT analysis in improving learning outcomes was deemed to be considered as a positive impact of the SWOT based strategy.

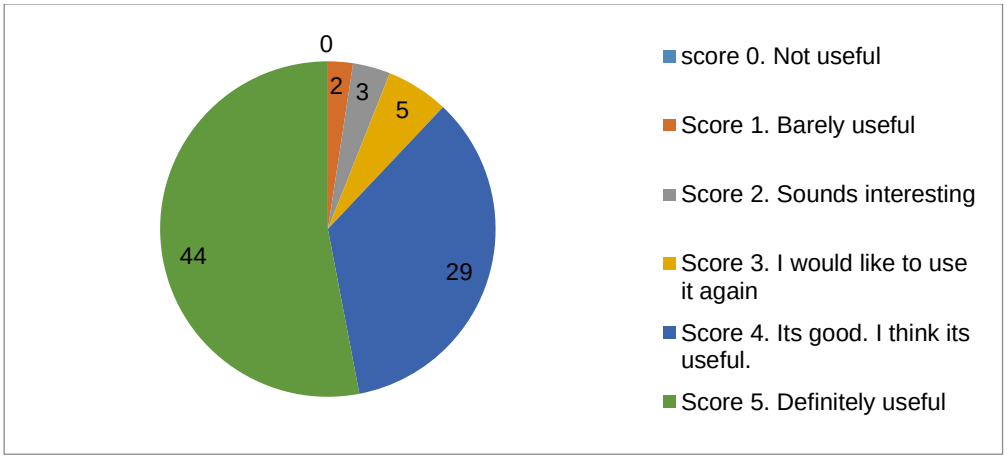
Results

The study was conducted on 83 participants who consented to participate in the study and were present for all 4 sessions conducted. The first step of the study was to help students plot a SWOT table individually with respect to learning of prescription communication and it was noted that ability to speak in local language and ability to understand concepts taught in class, hardworking and willing to practice and willingness to implement corrective measures were important strengths pointed out by students. Availability of videos, standard textbooks, and checklists on which students would be scored beforehand, training materials like mannequins, and teachers for feedback were regarded by students as opportunities. Similarly, inadequate knowledge about diseases to confidently communicate prescription information, inability to remember sequence and importance of each step and embarrassment to communicate steps to standardized patients were themed as weaknesses. The most important threat was stress of performance in the exam followed by Inability to express themselves in words, body language. Based on subthemes, students were suggested strategies which were then modified by students on individual basis. Important strategies suggested to maximize strengths were to communicate in a language that the patient was comfortable, correlate concepts taught in class with relevant knowledge for communicating a prescription and to practice with peers incorporating feedback suggested. Strategies suggested to make the most out of opportunities and minimize weaknesses included use textbooks , package inserts to collect knowledge about drugs before attempting practice of prescription communication, and to correlate drug knowledge like pharmacokinetics with each advice for communication and to keenly observe communication of prescriptions being performed by faculty, PG students and pharmacists. Important strategies suggested to overcome threats included reassurance about non biased assessment during exams to make situation less stressful and repeated practice and feedback till perfection. They were also asked to record videos while practicing communication in front of mirrors for self-appraisal. A month after these strategies were incorporated by students, significant improvement in second formative assessment scores from mean of 5 (1.04 SD) to 7 (0.8 SD) indicated a positive impact of the intervention and 98% of students scored a 3 or more on likert scale indicated a positive perception of utility of SWOT analysis based strategies in improving learning outcomes (Figure 1 and 2 respectively).



Paired t test. P=0.0115 statistically significant

Figure 1: Mean scores obtained before and after intervention



*Note: Numbers in the graph indicate absolute number of students allotting a particular score.

Figure 2: Perception of utility of SWOT analysis by students

Discussion

SWOT analysis has been practically used by educationists in various circumstances to assist learning and development. Here are a few paradigms. In a study conducted by Nengliang *et al*, SWOT analysis was used for determining situational analysis of online medical teaching during epidemic and develops countermeasures and suggestions accordingly (Nengaling, 2022). It was concluded that online teaching was one of the most effective measures to continue teaching.

A situational analysis in Kerala used SWOT to see if their institute had norms laid down by accreditation agency (Sathidevi, 2013). In a study conducted by Avinash Vikram Turankar *et a*l, SWOT analysis was used as a learning tool in medical education to consider ways of improving learning in clinical settings. The aim of the study was to determine learning outcome after a specific training program in medical students. In this study, students were asked to prepare a SWOT table on any topic of interest. Around 80% students exhibited attitude towards

recommending SWOT analysis as a learning tool to others. It was concluded that SWOT analysis could be inculcated in medical curriculum to improve analytical skills (Turankar, 2018). A study conducted by Kala tried to find the feasibility of student adaptation to online teaching (Kala, 2023). Thus from literature review it can be seen that SWOT analysis has been used lately as a common tool for situational analysis as well as to develop strategic countermeasures in medical education. However, studies have not objectively assessed the effectiveness of implementation of strategies built on the basis of SWOT framework in achieving predefined learning objectives like advancement in learning outcomes. However, this study brings in a favorable outcome and strategy building and implementation based on SWOT analysis if integrated into medical education at some point of time, students would become aware of the availability of this tool and apply it to most of their obstacles. Since this would be learner initiated and learning strategies individualized, improvement in individual learning outcomes may be expected.

Conclusion

SWOT analysis for strategy building to improve learning outcomes of prescription communication in medical students is effective as well as perceived as an important tool by students.

Acknowledgement

I would like to thank DOME faculty Seth GS medical college and KEM Hospital Mumbai for their guidance and support.

ACME 24 A batch members for their valuable inputs.

The Dean RCSM GMC Kolhapur and MEU in charge RCSM GMC Kolhapur for their support and cooperation.

Phase 2 MBBS students for their cooperation during the study.

References

Kala P, Kiran B, Rani RJ, James J. (2023). 'A Cross-sectional Survey of SWOT Analysis on Online Teaching Methodology during COVID-19 Pandemic among Undergraduate Students at a Tertiary Care Teaching Hospital,'J Clin of Diagn Res. 17(10), FC06-FC09. https://www.doi.org/10.7860/JCDR/2023/64387/18579

Nengliang D, Zhixiang G, Xiaolong L, Zhiyuan O. (2022) 'The SWOT analysis of online medical teaching in the context of "Internet plus" during epidemic prevention and control.' Research square. https://doi.org/10.21203/rs.3.rs-1645044/v1 accessed on 19/7/2024.

Patankar, F (2023) 'Competency Based Medical Education: A SWOT Analyis.' Indian J Prev Med, 11(2). PP 53-55.

Sathidevi VK, Sivdas MG. (2013) 'SWOT analysis of medical education and training in Government Medical College, Kerala. India.' International Journal of scientific and research publications. 3. pp 1-5.

Supe, A. (2019) 'Graduate Medical Education Regulations 2019: Competency-driven contextual curriculum.' Natl Med J India. 32. pp 257-261.

Turankar AV, Bargade M, Balpande S. (2018) 'SWOT analysis: the possibility as a learning tool in medical education training, a knowledge, attitude and practice based study in medical students.' J. Evid. Based Med. Healthc. 5(4). pp 3119-3123