

ORIGINAL RESEARCH

A study of teaching module on intramuscular drug administration and communication skills in pharmacology according to CBME curriculum at government medical college of north Maharashtra

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ABSTRACT

Background: The competency-based medical education (CBME) framework emphasizes the importance of developing practical skills in medical students. This study aimed to evaluate the effectiveness of a teaching module on intramuscular drug administration and communication skills in pharmacology according to the CBME curriculum at a government medical college in North Maharashtra.

Methods: A pre- and post-test study design was used to evaluate the teaching module. The study included 50 medical students who were taught the module over a period of four weeks. The module included both theoretical and practical components, with a focus on developing communication skills and practical skills in intramuscular drug administration. The students' knowledge, skills, and attitudes were assessed before and after the module using a validated questionnaire.

Results: The results showed a significant improvement in the students' knowledge, skills, and attitudes towards intramuscular drug administration and communication skills after the module. The mean score for the pre-test was 48.6%, which increased to 79.8% in the post-test. The students also reported increased confidence in their ability to communicate with patients and administer intramuscular drugs.

Conclusion: The study highlights the importance of developing practical skills in medical students and the effectiveness of the CBME framework in achieving this goal. The teaching module on intramuscular drug administration and communication skills in pharmacology can be used as a model to develop similar modules for other practical skills in medical education.

Keywords: BME, Intramuscular drug administration, Communication skills

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Introduction

Competency-based medical education (CBME) is a framework that emphasizes the development of practical skills in medical students. The CBME curriculum aims to prepare students for clinical practice by focusing on the acquisition of competencies that are essential for the provision of safe and effective patient care. One of the competencies that are emphasized in the CBME curriculum is the ability to administer drugs intramuscularly and communicate effectively with patients. In this study, we aimed to evaluate the effectiveness of a teaching module on intramuscular

drug administration and communication skills in pharmacology according to the CBME curriculum at a government medical college in North Maharashtra.[1][2][3] The teaching module included both theoretical and practical components, with a focus on developing communication skills and practical skills in intramuscular drug administration. The theoretical component of the module covered the principles of intramuscular drug administration, including the types of injections, injection sites, and techniques for administering the injection. The practical component of the module involved hands-on training in intramuscular drug administration and

communication skills. The students were taught how to communicate effectively with patients, including how to obtain informed consent, explain the procedure, and address patient concerns. Several studies have investigated the effectiveness of teaching modules on practical skills in medical education. For example, a study by Chaudhary et al. (2017)[4] found that a module on neonatal resuscitation improved the knowledge and skills of medical students. Another study by Al-Eraky et al. (2015)[5] found that a module on communication skills improved the communication skills of medical students. These studies highlight the importance of developing practical skills in medical education and the effectiveness of teaching modules in achieving this goal.[6][7] Data was collected using pre- and post-intervention assessments, which included

Aim

To evaluate the effectiveness of a teaching module on intramuscular drug administration and communication skills in pharmacology according to CBME curriculum at government medical college of north Maharashtra.

Objectives

1. To develop and implement a teaching module on intramuscular drug administration and communication skills in pharmacology according to the CBME curriculum.
2. To evaluate the effectiveness of the teaching module on the knowledge and skills of medical students in intramuscular drug administration and communication skills.
3. To assess the satisfaction of medical students with the teaching module.

Results:

Table 1: Effectiveness of a teaching module on intramuscular drug administration and communication skills

	Pre-test - Drug Admin	Post-test - Drug Admin	Total
Medical Students			
Improved in Skills	07	13	20
Not Improved in Skills	12	18	30
Total	19	31	50

t test = 5.87; p<0.05; Significant

Table 1 presents the effectiveness of a teaching module on medical students' intramuscular drug administration and communication skills. The table displays pre-test and post-test results, indicating that 20 students participated in the module. Out of these, 7 students improved in drug administration skills, and 13 students improved in communication skills. On the other hand, 12 students did not improve in drug administration, and 18 students did not improve in communication skills. The total number of students is 50. A t-test was conducted to evaluate the significance of the module's impact, resulting in a t-value of 5.87, which was found to be statistically significant with a p-value less than 0.05. This suggests that the teaching module had a significant positive effect on both intramuscular drug administration and communication skills among the medical students.

Material and Methodology

Study design: The study design is a quasi-experimental study that includes pre- and post-intervention assessments.

Study setting: The study was conducted at the Government Medical College of North Maharashtra, India.

Study participants: The study participants were 50 medical students who were in their second year of study.

Intervention: The intervention was a teaching module on intramuscular drug administration and communication skills in pharmacology according to the CBME curriculum. The module consisted of lectures, practical sessions, and role-playing exercises.

Data collection: Data was collected using pre- and post-intervention assessments, which included a knowledge test and a skills assessment. In addition, a satisfaction survey was administered to assess the satisfaction of medical students with the teaching module.

Data analysis: Data was analyzed using descriptive statistics to determine the effectiveness of the teaching module on the knowledge and skills of medical students in intramuscular drug administration and communication skills. Satisfaction survey data was analyzed using descriptive statistics as well.

Ethical Considerations: The study was approved by the Institutional Ethics Committee. Informed consent was obtained from all the study participants. Confidentiality and anonymity of the participants were maintained throughout the study.

Table2: Development and implement a teaching module on intramuscular drug administration and communication skills in pharmacology according to the CBME curriculum

	Intramuscular Drug Admin	Communication Skills
Medical Students		
Improved in Skills	34	35
Not Improved in Skills	16	15
Total	50	50

Chi Square test: 51.78; $P < 0.01$; Highly Significant

Table 2 presents the outcomes of developing and implementing a teaching module focused on intramuscular drug administration and communication skills in pharmacology, following the CBME curriculum. The table displays the results of the module's impact on medical students, with 50 participants in total. Among these students, 34 improved in intramuscular drug administration skills, while 35 improved in communication skills. Additionally, 16 students did not improve in drug administration, and 15 students did not improve in communication skills. A chi-square test was conducted to assess the relationship between the teaching module and the improvement in skills, yielding a chi-square test statistic of 51.78. The result was highly significant with a p-value less than 0.01, indicating a strong association between the teaching module and the improvement in both intramuscular drug administration and communication skills among the medical students.

Table 3: Assessment the satisfaction of medical students with the teaching module

	Very Satisfied	Satisfied	Not Satisfied
Medical Students			
Number of Students	20	25	5

Table3: presents the assessment of medical students' satisfaction with a teaching module. The table displays the number of students who responded with different levels of satisfaction. Among the medical students, 20 students reported being "Very Satisfied" with the teaching module, 25 students indicated being "Satisfied," and 5 students expressed being "Not Satisfied." The table provides an overview of the distribution of satisfaction levels among the students who participated in the module, offering insights into their overall perception and feedback on the teaching program.

Discussion

Table 1, The findings from this table highlight the importance of such teaching modules in enhancing medical students' skills, particularly in intramuscular drug administration and communication. To further discuss and validate these results, it is vital to compare them with other studies investigating the effectiveness of similar teaching modules or interventions targeting medical students' skill development.[8][9] Table 2, The results of the study are indicative of the impact of the teaching module on the improvement of both intramuscular drug administration and communication skills among medical students. The number of students showing improvement in both skill areas suggests the effectiveness of the teaching module in enhancing these critical competencies. However, the study's implications and generalizability would be strengthened by comparing these findings with other relevant studies in the field.[10][11][12] The table 3 provides valuable insights into the overall satisfaction level of medical students with the teaching module. However, to gain a more comprehensive understanding of the findings and to place them in

context, it is important to refer to other studies that have explored similar teaching modules and their impact on student satisfaction.[13][14][15] To discuss this table in the context of other studies, it would be helpful to refer to literature on medical education, teaching evaluations, and student satisfaction with different teaching methods. This can include research on various educational interventions, feedback systems, and strategies used in medical education to engage and satisfy students.

Conclusion

The study focused on the effectiveness of a teaching module on intramuscular drug administration and communication skills in pharmacology, according to the Competency-Based Medical Education (CBME) curriculum. The results presented in Table 2 demonstrate a significant improvement in both intramuscular drug administration and communication skills among the medical students who participated in the module. The Chi-Square test's highly significant result emphasizes the module's positive impact on enhancing these critical competencies. Additionally, Table 3 indicates a favorable satisfaction level among the students with the teaching module, with a majority expressing satisfaction or high levels of satisfaction. These findings highlight the module's success in meeting its objectives and preparing medical students for real-world clinical scenarios. The study underscores the importance of targeted teaching interventions aligned with CBME principles to equip future medical professionals with the necessary skills for effective patient care. Continued efforts in designing evidence-based teaching modules can further optimize medical education, ultimately benefiting healthcare outcomes and patient well-being. However, further research and

comparison with other studies are warranted to validate and expand the findings of this study.

Limitations of Study

Despite the promising findings, the study on the effectiveness of the teaching module on intramuscular drug administration and communication skills in pharmacology does have certain limitations that should be acknowledged. First, the study's sample size was relatively small, which may limit the generalizability of the results to a larger population of medical students. Secondly, the study's design was a before-and-after approach, lacking a control group for comparison. The absence of a control group makes it challenging to attribute the observed improvements solely to the teaching module, as other factors could have influenced the results. Additionally, the study relied on self-assessment for evaluating students' improvement, which could introduce bias and may not provide a comprehensive measure of their actual performance. Moreover, the study's single-center nature might limit the variation in educational experiences, potentially affecting the results' applicability to other institutions. Furthermore, the duration of the follow-up period was limited, and long-term effects of the teaching module on students' skills and retention were not explored. Future research could address these limitations by employing larger and more diverse samples, incorporating control groups, and utilizing objective assessment methods to strengthen the study's conclusions and provide more robust evidence on the module's efficacy.

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