RESEARCH ARTICLE

Student perceptions in regard to formative assessment in medical education

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ABSTRACT

Background: Formative assessment has been made a point of emphasis by recent National Medical Commission guidelines. It is a useful to ensure continuing progression, learning, and feedback of the student. Eventually, this successful formative assessment should lead to better performance in summative assessment and in their professional career. Aims and Objectives: (i) To evaluate basic understanding of students about formative assessment as well as change following educational session; (ii) To assess perceptions of students in relation to various aspects of formative assessment. Materials and Methods: This study was a cross-sectional study. Participants included second professional year undergraduate medical students. After a brief introductory session about formative assessment, a questionnaire was given to the students following informed consent. The participants had 30 min to fill out the questionnaire. Questionnaire contained 20 questions including different aspects of formative assessment. Change in response in regard to awareness of formative assessment was calculated. Results: Response rate obtained was 92.88%. Total respondents were 130. There was an increase in awareness by 76.92% after educational session. MCQ quiz in middle of teaching session was most commonly recommended form of formative assessment (66.92%). Teacher–student ratio was the most important factor for successful formative assessment. Most students (57.69%) believed that formative assessment should be done every month. Conclusion: Formative assessment is a useful tool for learning for undergraduate students from a student’s perspective. However, feasibility in terms of time and teachers remains the greatest limitation in its successful implementation.

KEY WORDS: Formative Assessment; Student Perceptions; Questionnaire

INTRODUCTION

Formative assessment has emerged as a useful tool in enhancing student learning and progression.¹⁻⁴ Formative assessment involves understanding the learning processes of students, giving feedback as well as modifying the teachers teaching strategies. Hence, formative assessment is of use to both educator and student. In fact, formative assessment is a form of teaching and assessment.⁵,⁶ Formative assessment differs from summative assessment in that it is a continuous process throughout the learning period while summative assessment occurs at the end of a specific learning duration. A number of studies have examined demonstrated the utility of formative assessment in a variety of settings.¹⁻⁴,⁷⁻⁸ The national medical commission has also emphasized the need for formative assessment in medical teaching.⁹,¹⁰ While internal examinations have always been conducted periodically, the need for more frequent feedback to allow
for earlier identification of learning deficiencies needs to be assessed. In addition, it is not necessary that all forms of formative assessment are effective. There may be limited feasibility to apply formative assessment particularly in large groups. The feedback of formative assessment may be in the form of teacher-led feedback or self-assessment or peer feedback.

It has been hypothesized that teachers often overestimate their own use of formative assessment methods. Medical education worldwide has not yet developed a uniform pattern or format of effective feedback systems. Countries such as Denmark have implemented competency-based medical education but have reported that formative assessment has not been sufficiently implemented. For formative assessment to be successful, willingness of students is required. It has been postulated that students may not value formative assessments, as they do not count toward their final assessment. Previously, studies have been conducted in other countries assessing perceptions of students about formative assessment. Studies assessing perceptions on online formative assessment have been done.

Studies assessing perceptions and understanding of students in relation to formative assessment in medical colleges in India remain few. Hence, this study has been conducted to better understand perceptions of students regarding formative assessment.

**Objectives**

1. To evaluate basic understanding of students about formative assessment as well as change following educational session
2. To assess perceptions of students in relation to various aspects of formative assessment.

**MATERIALS AND METHODS**

This was a cross-sectional study. It was conducted with second professional year MBBS students. Informed consent was first obtained from all students. Students who were unwilling to give informed consent were excluded from the study. Initially, awareness of formative assessment was assessed through a single question. This was followed by a half hour educational session on formative assessment. Following this session, a questionnaire was administered. Questionnaire contained 20 questions including different aspects of formative assessment. Change in response in regard to awareness of formative assessment was calculated.

**Statistical Methods**

Frequency of responses was calculated as (n, %). Statistical significance was determined using a Chi-square test or t-test with $P < 0.05$ being significant.

**RESULTS**

Response rate obtained was 92.88%. Total respondents were 130. Before educational session, only 25 (19.23%) students knew about formative assessment. After educational session, 125 (96.15%) students knew about formative assessment [Figure 1]. Seventy-eight participants (60%) were female while 42 participants were male (40%). One hundred and three students (79.23%) believed that some form of formative assessment was required in medical education. The most common formative assessment technique recommended was MCQ quiz in middle of the class (106, 81.54%) followed by oral questions (102, 78.46). The technique rated most effective was MCQ quiz in middle of the class (87, 66.92%) followed by oral questions (15, 11.54%). One hundred and twenty eight students (90.77%) regarded teachers as competent and able to implement formative assessment. One hundred and eighteen students (90.77%) do not consider competency of teacher as a limitation. However, greater teacher–student ratios (110, 84.61%) were considered a positive indicator. Electronic logbooks were preferred by 73.07% (95) students for feedback. Thirty-five students (26.93%) preferred physical logbooks. One hundred and one students (77.69%) recommend verbal feedback but only 43 (33.08%) students thought that this was feasible. Seventy-five students (57.69%) believed that formative assessment should be done every month while thirty-five (26.92%) believed that it should be done thrice a year. One hundred and twelve participants (86.15%) would want individualization of feedback but only twenty-five (19.23%) thought it to be feasible. One hundred and eighteen students (90.77%) believed that stress would increase due to formative assessment. Twenty-five (19.23%) believed that they would not focus on formative assessment if it did not count toward final results.

**DISCUSSION**

Medical education in India has undergone significant changes with a focus on curriculum-based medical education. Attainment of satisfactory achievement of competencies is required. Focus on just summative assessment has lessened. Continuous periodic assessment with feedback forms the backbone of the new curriculum. The precise format of formative assessment is not yet fully understood by educators and students as well. Hence, this study was conducted with the core aim of assessing understanding of formative assessment from perspective of students.

Before educational session, only 19% students were aware of formative assessment. This indicates a low baseline awareness of formative assessment and this may be explained due to the historically high emphasis on summative assessment in medical education. This awareness increased to 96% following an education session. This is a short-term finding immediately after educational session. It is possible that
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It was interesting that 20% did not believe that formative assessment was important. This is a relatively high number of students. However, 19% students did not believe that they would focus on continuous assessment and feedback systems as they would count toward final result. Systems may have to be modified to ensure compliance and interest from students in this regard.

The most recommended method of formative assessment was MCQ quizzes in middle of teaching session. It was also rated the most effective. Asking questions was rated as second most recommended method. However, most students did not rate it as effective. The recommendation to use this technique may be due to its feasibility.

Majority of students (91%) did not view competency of their educators as a limitation toward implementation. This is a positive sign, with educators being viewed as largely competent. However, most students felt that teacher–student ratio was a limitation toward implementation. Higher the number of teachers, easier it is to give feedback and individualize the learning system for students. Most students (86%) would want individualization of learning but only 19% believe this to be feasible.

Logbooks have been mandated to be used for charting progress of students. Our study indicates that 73% would rather have electronic logbooks as opposed to physical logbooks. Electronic logbooks may be more accessible and more feasible than physical logbooks.

Mondal et al. studied the perceptions of students in relation to online formative assessments among 36 first MBBS students. It found that formative assessment is a good learning activity.[19] Most preferred frequency of formative assessment is monthly. Such frequent assessments may not be feasible as it is resource intensive. Panchibhai et al. studied perceptions of seventy dental students. In this study, fifty-seven participants found frequency of 3 per year adequate.[20] Lim studied perceptions of medical students (1st, 2nd, and 3rd year) in New York through online questionnaire. This study demonstrated that overall medical students had a favorable view of formative assessment in medical curriculum. This study suggested that female students tend to have a more positive perception of feedback driven learning. This study also found a significant number of students who found formative assessment “overwhelming.”[4] Often perceptions may differ based on learning strategies. Students utilizing deep learning strategies may have more positive views toward formative assessment while those who utilize superficial strategies may have more negative views regarding formative assessment.[21-23]

Stress is a growing factor affecting well-being of students. The true goal of formative assessment is not to over burden the students but to enhance their overall development. Giving them early feedback allows students to modify their approach. Awareness sessions emphasizing the importance of formative assessment are required.

CONCLUSION

Overall educational sessions are required to increase awareness of formative assessment. There is a need to emphasize to students how continuous feedback mechanisms will help reduce stress. Students overall feel that formative assessment would be useful if held monthly but have doubts of feasibility.

REFERENCES


Figure 1: Awareness of formative assessment before and after educational session


