

A Survey of Medical Interns' Viewpoints on Feedback in Internal, Surgery, Pediatrics, Obstetrics and Gynaecology wards at Shiraz University of Medical Sciences

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Abstract

Background: Assessment forms the backbone of undergraduate medical training especially in clinical contexts and clerkships, which are typically situated in environments lacking educational structure. This study aims to evaluate the viewpoints of medical interns in internal medicine, surgery, pediatrics and obstetrics and gynecology wards about feedback and formative assessment.

Methods: 100 medical interns attending internal medicine, surgery, pediatrics and obstetrics and gynecology wards comprised the subjects of the study. They filled out a questionnaire containing 20 items on formative assessment. The data obtained were analyzed, using SPSS version 14.

Results: Among the wards studied the obstetrics & gynecology achieved the highest score and the surgery ward the lowest. The difference between the scores was statistically significant ($P = 0.007$)

Conclusion: The highest score to formative assessment in the obstetrics & gynecology ward reveals the students' more positive viewpoints on formative assessment in this ward in comparison to the other three major wards. The surgery ward received the lowest score suggesting that the feedback in surgery ward was very low.

Keywords: FORMATIVE ASSESSMENT, FEEDBACK, MEDICAL INTERNS, SHIRAZ MEDICAL SCHOOL, POINT OF

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Introduction

Assessment as a tool to ensure quality in training programs is very important in medical education. It forms the backbone of undergraduate medical training especially in clinical contexts and clerkships, which are typically situated in environments lacking educational structure.(1,2,3) Formative assessment which is generally carried out through a course or project is referred to as

“formative” since it is used to aid learning.(4,5,6) Formative assessment helps not only the teachers to monitor their students' progress and to modify the instruction accordingly but also the students to monitor their own progress as they get feedback from their peers and teachers. Furthermore, the students find opportunity to revise and refine their thinking. Korszun et al in 2005 evaluated the effectiveness of formative assessment and found that formative assessment not only helped the students to appreciate the subject matters better but also led to the formation of positive views on the course they were studying.(7) In 2006, Krasne et al investigated how performance on two different modes of

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formative assessment correlate and also whether they correlate with summative assessments in an integrated, medical-school environment. Two types of formative assessment were administered to 146 first-year medical students each week over 8 weeks: a timed, closed-book component to assess factual recall and image recognition, and an un-timed, open-book component to assess higher order reasoning including the ability to identify and access appropriate resources and to integrate and apply knowledge.(8) Carrillo-de-la-Pena in 2007 carried out a study to find out to what extent participation and performance in formative assessment are associated with positive academic outcomes of pre-graduate students of health sciences. A total of 548 students from three health science degrees (Medicine, Psychology and Biology) from four Spanish universities were involved in this study. The students having mid-term formative assessment got better marks and had higher success rates in final summative assessment than the students without any formative assessments. In addition, success in formative assessment tests was associated with better summative marks. Interestingly, participation in formative assessment was a better predictor of final outcome than success in such an assessment. This supports the key role of feedback in formative assessment. Students who took the formative assessments, irrespective of their success, obtained feedback about their achievement and probably this determined their greater involvement in the learning process. Although causal relationships between formative and summative assessment cannot be established from this research, the general benefits of formative assessments found here encourage the practice of such assessments in health sciences education (9). Hundson in 2006 in a study on formative assessment concluded that formative assessment, known to produce learning gains in a range of educational settings, was an important activity in contemporary medical education. Such assessments caused first-year

undergraduate medical students to value learning with peers in an enjoyable, interactive environment, where they were able to shed light on uncertainties and clarify answers. With a greater emphasis on self-directed learning and less well-defined curriculum boundaries, feedback gained through the formative assessments helped students to understand and apply the important physiological concepts that underpin the practice of medicine (10). Sicaja et al. in 2006 tried to evaluate self-assessed level of clinical skills of graduating medical students at Zagreb University School of Medicine and compare them with clinical skill levels expected by their teachers and those defined by a criterion standard. The study included all medical students ($n=252$) graduating from the Zagreb University School of Medicine in the 2004-2005 academic year. Participants were grouped according to their descriptive characteristics for further comparison. The response rate was 91% for students and 70% for faculty members. Students' self-assessment scores in all nine groups of clinical skills ranged from $2.2\text{-}/+0.8$ to $3.8\text{-}/+0.5$ and were lower than those defined by the criterion standard ($3.0\text{-}4.0$) and those expected by teachers (from $3.1\text{-}/+1.0$ to $4.4\text{-}/+0.5$) ($P<0.001$ for all). Students who had additional clinical skills training had higher scores in all groups of skills, ranging from $2.6\text{-}/+0.9$ to $4.0\text{-}/+0.5$ ($P<0.001$ for all). Teachers' expectations did not vary according to their sex, academic position, or specialty. Students' self assessed level of clinical skills was lower than that expected by their teachers. Education during clinical rotations is not focused on acquiring clinical skills, and additional clinical skills' training has a positive influence on students' self assessed level of clinical skills. There was no consensus among teachers on the required level of students' clinical skills (11). In 2007 Lewis et al. tried to examine the effectiveness of providing formative feedback for summative computer-aided assessment. Two groups of first-year undergraduate life science

students in pharmacy and neuroscience who were studying an e-learning package in a common pharmacology module were presented with a computer-based summative assessment. A sheet with individualized feedback derived from each of the 5 results sections of the assessment was provided to each student. Students were asked via a questionnaire to evaluate the form and method of feedback. The students were able to reflect on their performance and use the feedback provided to guide their future study or revision. This style and method was appreciated and valued by students (12). Kibble J in 2007 introduced online quizzes into a large Medical Physiology class to provide students with formative assessment before midterm and final summative examinations. Unsuper-vised online quizzes were chosen to provide a flexible supplementary learning tool for students without overwhelming a small faculty. Several quiz models were applied, which varied in the availability of course credit points for participation and performance. The aims of the study were to investigate whether participation in formative assessment was associated with improved course outcomes, use of incentives for completing quizzes affected student participation, and quiz performance was predictive of summative examination outcomes. Results showed that students who elected to use online quizzes performed better in summative examinations (13).

Materials and Methods

The subjects of this descriptive study were 100 medical interns (seventh year) attending internal medicine, surgery, pediatrics and obstetrics and gynecology wards. They were completing a 15-month medicine internship in 4 teaching hospitals (Nemazee, Shahid Faghihi, Hafez and Zeinabie) during December 2008. A standard questionnaire containing twenty items was used to evaluate the subjects' viewpoints on the formative assessment in their own ward. For each item

there were four choices: always, often, sometimes and seldom. Always was given 100, often 70, sometimes 35 and seldom 0 points, respectively. The study outcomes were grouped into 3 broad categories: below 40 ($x < 40$), more than 40 and below 60 ($40 < x < 60$) and more than 60 ($x > 60$). Differences in categorical variables were tested by chi-square analysis. Statistical significance was set at $p \leq 0.05$. The data were analyzed using SPSS version 14.

Results

Overall 100 students participated in this study. Although the distribution of the students was even in all rotations, i.e., 25 students were attending each ward (internal medicine, surgery, obstetrics & gynecology and pediatrics), the distribution of the students was not even in the 6 hospitals. 58, 19, 10 and 13 students were attending Nemazee, Shahid Faghihi, Hafez and Zeinabie hospitals, respectively. The reason is that these hospitals may contain one or more of the above-mentioned wards. For instance, Nemazee hospital had internal medicine, surgery and pediatrics wards, Shahid Faghihi hospital internal medicine, surgery and obstetrics & gynecology wards, and Hafez and Zeinabie hospitals had only obstetrics and gynecology wards. The table shows the students responses to 32 percent of the students believed that their teachers always were present in the ward on time.

But 15 percent of them said that their attending never attended the ward on time. Thirty nine percent of the students believed that the teaching practice of attendings were fair while 10 percent believed the opposite. Thirty six percent of the students believed that they were sometimes taught on communication with patient in the ward which they thought was not enough. Twenty nine percent of the students believed that their attending often accept feedback from the students in order to modify the teaching practice in the ward. Forty four percent of the

Table 1. Frequency distribution of responses to the questionnaire items.

	Always	Often	Sometimes	Seldom
Teachers presence in the ward	32	30	23	15
Providing a safe environment	26	28	26	20
Fairness in teaching practices	39	29	22	10
Focus on learning of the students	32	30	26	13
Motivating students for learning	25	21	34	20
Focus on clinical skills	11	19	39	31
Feed back on patient-physician communication	22	28	36	14
Not making students dispirited	37	29	18	16
Not humiliating the students	29	30	28	13
Using mistakes as source for further learning	27	29	21	23
Asking students for their feedback	17	32	29	21
Giving appropriate exams	7	25	24	44
Accepting feedback from students	14	21	43	22
Paying attention to clinical skills	16	28	38	18
Giving feedback in appropriate quantity	12	25	47	16
Giving feedback to correct behavior	14	35	40	11
Agreement with students on the time and place of giving feedback	14	32	38	16
Trained to be a useful member of health care team	15	36	36	13
Getting the maximum feedback	19	30	32	19
Feedback has corrected my behavior	17	28	41	14

students believed that their attending never evaluate the students educational needs. Forty three percent of the students believed that their attending sometimes accept feedback in all aspects (ie. educational, social and cultural). 36 percent of the students believe that their education is sometimes helpful in order to be a useful member of the health team. Only 19 percent of the students believed that they have received the maximum feedback in their educating ward. At last 41 of the students said that they sometimes receive enough feedback to improve their professional skills and reactions. The distributions of the students' answer to theses twenty questions are shown in Table 1.

The mean score was 50.48 ± 20.1 , 43.22 ± 16.5 , 53.7 ± 20.02 and 64.7 ± 23.58 for internal medicine, surgical, pediatrics and

obstetrics and gynecology wards respectively. The comparison between these groups was meaningful ($P = 0.007$). This shows that students believed that obstetrics & gynecology ward was doing better than others in terms of formative assessment. After that pediatrics ward was the best ward regarding the formative assessment. Surgery ward received the lowest score for formative.

In obstetrics & gynecology wards 15 students gave the score of more than 60 and 7 students gave the score of between 40 and 60 and 3 other students gave the score of fewer than 40. In pediatrics wards 10 students gave the score of more than

60 and 7 students gave the score of between 40 and 60 and 8 other students gave the score of fewer than 40. In internal medicine wards 9 students gave the score of more than 60 and 8 students gave the score of between 40 and

60 and 8 other students gave the score of fewer than 40. In surgery wards 3 students gave the score of more than 60 and 11 students gave the score of between 40 and 60 and 11 other students gave the score of fewer than 40. Comparison between these groups using

Chi-square test showed significant difference between obstetrics and gynecology wards and the other three major wards ($P = 0.008$).

But comparison of the variants between the four hospitals was not meaningful ($P > 0.05$). Frequency distribution of the scores of different wards is shown in Table 2.

Table 2 Frequency distribution of the scores of different wards

Score	< 40	40<Score<60	Score>60
Internal Medicine	8	8	9
Surgery	11	11	3
Pediatrics	8	7	10
OB/GYN	3	7	15
Total	30	33	37

Discussion

Within resource-constrained environments, typical of developing-world countries, the utility of educational innovations is largely determined by the balance achieved between the resource demands of the method and the perceived benefits thereof. This study shows that longitudinal in-course formative assessment, with immediate feedback, can be resource-constrained setting. While the use of workplace-based multiple real patient encounters is an increasingly popular formative assessment strategy in the developed world (14,15) descriptions of its use in the developing world are lacking. This article also expanded on existing work by exploring students' perceptions of the impact of this type of assessment strategy on clerkship learning. Students readily appreciated the learning value of formative assessment, in particular the role of feedback

in informing them of their own level of competence and guiding them regarding personal learning needs. The vast majority also attributed an improvement in clinical reasoning skills to the use of BPEs, the basis of the assessment strategy. This represents a better student appreciation of the educational value of this strategy than previously reported (16) and highlights the importance of determining perceptions within specific contexts of implementation rather than assuming similar perceptions worldwide. (17,18)

Most students believed that presence of attending in the ward will enhance the educational value of teaching rounds. In the other hands the obstetrics & gynecology ward achieved the highest score among the four major wards while surgery ward received the lowest score. This shows that the attending of obstetrics and gynecology spend more time in their wards and pay more attention to clinical teaching. The low score of surgery ward can be explained due to less educational programs and less time spent in attending rounds. At all only 14% of the students believed that their attending accept feedback from their students. This shows that educational programs are based on pre-known schedule and cannot be changed based on students' opinion. This may cause a sense of obligation in all students which may cause disappointment in them. The inability of this study to demonstrate a relationship between feedback and better academic performance may reflect the lack of a true control group in the study, the bias of the summative assessment composition (focus on knowledge acquisition rather than clinical competence) or a need for more sustained feedback before a measurable impact on performance can be expected to be observed. So duo to results, we recommended staff development in student evaluation domain is necessary. (19,20)

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