Barriers to feedback in undergraduate medical education

Male students' perspective in Central Saudi Arabia

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ABSTRACT

الأهداف: استطلاع وجهات نظر طلاب كلية الطب حول وجود المعوقات التي تحول دون التغذية الراجعة الفعالة في العملية التعليمية، بالإضافة إلى تحديد مصادر هذه المعوقات.

الطريقة: أُجريت هذه الدراسة المقطعية في كلية الطب، جامعة الملك سعود بن عبد العزيز للعلوم الصحية، الرياض، المملكة العربية السعودية خلال الفترة من ابريل إلى يونيو 2010م. ولقد قمنا باستخدام أوراق الاستبيان التي تُعبئ ذاتياً من قبل الطلبة لاستكشاف أهداف الدراسة.

النتائج: شارك في هذه الدراسة 186 من طلاب كلية الطب، وقد أشار حوالي 45% منهم إلى وجود المعوقات التي تحول دون التغذية الراجعة الفعالة. وشملت هذه المعوقات كلاً من: عدم وجود نظام واضح من التغذية الراجعة الفعالة، وعدم كفاية مهارات بعض المعلمين لإعطاء التغذية الراجعة، وبدرجة أقل خوف الطلاب من الإهانة بسبب التغذية الراجعة. وأظهرت الدراسة أن غالبية المشاركون لديهم الاهتمام والاستعداد لاستقبال المزيد من التغذية الراجعة المهنية في المستقبل.

خاتمة: أظهرت هذه الدراسة وجود المعوقات للتغذية الراجعة وذلك كما يشعر به طلاب كلية الطب، وهذا من شأنه أن يقلل بشكل كبير من الاستفادة من التغذية الراجعة الفعالة في مجال التعليم الطبي. وينبغي معالجة هذه المعوقات التي ذكرت في الدراسة للاستفادة من الدور الجوهري للتغذية الراجعة الفعالة في العملية التعليمية لطلاب الطب.

Objectives: To explore the views of undergraduate medical students regarding the presence and sources of barriers to effective feedback in their setting.

Methods: This cross-sectional study was conducted at the College of Medicine, Department of Medical Education, King Saud bin Abdul-Aziz University for Health Sciences, Riyadh, Kingdom of Saudi Arabia from April to June 2010. A self-administered questionnaire was used to explore the objectives of the study.

Results: One hundred and eighty-six male undergraduate medical students participated in this study. Approximately 45% indicated presence of barriers to effective feedback. These include: absence of a clear system of feedback; inadequate skills of teachers for provision-effective feedback; and to a lesser extent, students' fear of insult due to feedback. Most participants showed their interest and readiness to receive more professional feedback in the future.

Conclusion: This study has showed the presence of barriers as perceived by medical students, which could significantly minimize utilization of feedback in medical education. The reported barriers should be addressed to utilize the vital role of feedback in the learning process of undergraduate medical students.

Provision of constructive feedback has been recognized as an essential feature of effective teaching that facilitates learning of medical students.[1] Giving feedback to students is a critical skill for effective teaching and learning, and considered as the "heart of medical education".[2,3] Feedback to be effective, should be delivered in a systematic way, and with the intention to improve the learner's knowledge and performance.[4] Both faculty and students value the fundamental role of feedback for students' personal and professional development.[5] Providing feedback is an interactive process between supervisor and student with a specific aim, for example, to correct misconceptions of a student regarding a certain disease, or to improve their manner of interviewing the patient. Undergraduate medical students report that feedback is not sufficiently offered to them. Fernando et al[6] during a formative mini-Clinical Evaluation Exercise (min-CEX) assessment found that: 23% of cases' positive features were not identified; 28% of cases - no suggestions for development were highlighted; and 50% of cases - no action plan was formulated.[6] Furthermore, feedback process can be disturbed by many factors. These include insufficient training of supervisors, lack of time, and to a lesser extent, fear of disturbing the student-supervisor personal relationship.[7,8] In a local study, undergraduate medical students consider the provision of feedback to them as a determinant of effective teaching strategy, which could motivate them for a better learning.[9] Although medical students link the effectiveness of their educational experiences to the provision of feedback from their teachers, their utilization of feedback varies considerably.[9,10] Students' acceptance of the process and outcomes of feedback varies, and could be considered as a major issue in their seeking and utilization of feedback.[10] As the available data indicated the presence of obstacles that could hinder or minimize the utilization of undergraduate medical students of feedback, little is known regarding the sources and nature of these barriers in a Saudi setting. This study was carried out to explore views of undergraduate medical students regarding the presence and sources of barriers to feedback in their educational process, and their opinion on seeking feedback in the future.

Methods. This cross-sectional, self-administered, anonymous, and questionnaire-based study was conducted at the College of Medicine, Department of Medical Education, King Saud Bin Abdul-Aziz University for Health Sciences (KSAU-HS), Riyadh, Kingdom of Saudi Arabia. The college was established in 2004 and adopted problem-based learning (PBL), system-based,

and community oriented curriculum. The curriculum at the College of Medicine, KSAU-HS is composed of 3 main phases: pre-professional; pre-clinical; and clinical. As the curriculum is problem-based, all PBL sessions are concluded by a feedback. Students are invited to give their feedback regarding the problem, the process of the session, and the contribution of all members of the group, including the tutor. In addition, students expect a feedback from the tutor regarding their performance in the PBL session. Other opportunities for the provision of feedback are not well-defined to undergraduate medical students, therefore, a part of the feedback activities at the end of PBL sessions, the students' experience with feedback is variable, and dependent on their request and interest of the teachers. All male medical students have been invited to participate in the study. The inclusion of only male students was due to the fact that at the time of the study, admission to the college was limited to male students, as some of its facilities including those for females were still under construction. The study was conducted from April to June 2010. The proposal of this study was reviewed and approved by the research ethics' committee at the King Abdullah International Research Center. The questionnaire was developed after an extensive review of relevant literature to include suitable items to achieve the study objectives.[4,6-8,10] The questionnaire includes general demographic information, which includes age and level of the study. The questionnaire also includes questions to explore views of students on the presence and sources of barriers to feedback in their setting, and their future seeking and utilization of feedback. Common barriers of feedback were listed in the questionnaire as follows: "student will not accept negative feedback"; "faculty does not have skills of providing effective feedback"' "no clear system of feedback"; and "feedback is considered as insult in our culture". The questionnaire also contains open-ended questions to encourage students to report other barriers. A question regarding future students' seeking and utilization of feedback was included, as well. Students were requested to express their opinions regarding the importance of these barriers by rating each barrier on a 5-point Likert scale, such as: 1 - strongly disagree; 2 - disagree; 3 - don't know; 4 - agree; and 5 - strongly agree. For analysis purposes, responses 1, 2 and 3 were collapsed as "disagree", and responses 4 and 5 were grouped as "agree". The authors felt that students might have different views on their perception of barriers of feedback as they progress in their study. This was assessed by grouping students to juniors (first 3 years in the medical curriculum), and seniors (last 3 years in the medical curriculum). Differences between

these 2 groups were examined. A pilot study of the questionnaire was carried out to validate and increase the clarity of the items in the questionnaire, and was finalized accordingly. The returned questionnaires from the pilot study were not included in the results. The total sample size was estimated to be 180 participants. This was concluded by assuming a proportion of barriers to feedback as 50% (due to lack of estimates from the previous studies) with ±8% of precision (width of 95% confidence interval [CI]), and at α= 0.05, the sample size needed was 150 subjects. A 20% non-response rate was considered as well.

Descriptive statistics (mean, standard deviation, and proportion) were used to quantify the quantitative and categorical study and outcome variables. Cronbach's alpha was calculated to assess the reliability of instrument. Pearson's Chi-square test was used to observe an association between the categorical study and outcome variables. A $p<0.05$ and 95% CI were used to assess the statistical significance and precision of estimates. Data was analyzed using the Statistical Package for Social Sciences version 16.0 (SPSS Inc, Chicago, IL, USA).

Results. A total number of 186 out of 291 students (64% response rate) have participated in this study. All participating students were males, with a mean age of 22.7 (± 3.6 SD). One hundred and thirty students of the sample were juniors (70%), and 52 were seniors (28%). The information regarding the level of study for 4 students (2%) was missing, and could not be determined. Approximately 45% (95% CI: 37.3-52.7%) of the students have indicated the presence of barriers that may disturb the process of feedback in their setting. The remaining students either felt that there are no barriers (23%), or say they do not know (32%). The perception of barriers is higher among senior students, as 60% of them indicated the presence of barriers to feedback compared to only 39% of the junior students. This difference is statistically significant (Chi-square: 5.97; degrees of freedom [df] - 2, p=0.05). The sources of barriers that minimize the utilization of feedback are illustrated in **Table 1**. Absence of a clear system of feedback that is known and followed by both students and faculty was perceived as the main problem. Factors related to faculty were considered as a problem by approximately 47% of students. This particular issue was reported by senior students more than the juniors. The difference was statistically significant (Chi-square: 7.76; df - 1; p=0.005. Most students (74%) have indicated their readiness to accept constructive feedback including the negative points regarding their performance. Approximately a quarter of the students think that feedback could be considered as an insult, and may prevent them from its utilization and acceptance. Most students (74%) have indicated their disagreement that culture is a probable barrier in utilization feedback. Approximately 86% of the sample has indicated utilization of feedback, if it is offered regularly. Nevertheless, a small number of students (1.2%), all from the senior subgroup think that they will not seek feedback in the future. The difference between the 2 groups was statistically significant (Chi square:

Table 1 - Sources of barriers to feedback obtained from the study sample.

Variables	Agree		Disagree		Total		X^2	P-value
			n (%)					
Students will not accept negative feedback								0.25
Junior	27	(24.0)	86	(76.0)	113	(100)	1.27	
Senior	15	(33.0)	31	(67.0)	46	(100)		
Total	**42**	**(26.0)**	**117**	**(74.0)**	**159**	**(100)**		
Faculty does not have skills for providing effective feedback							7.76	0.005
Junior	44	(40.0)	67	(60.0)	111	(100)		
Senior	30	(64.0)	17	(36.0)	47	(100)*		
Total	**74**	**(47.0)**	**84**	**(53.0)**	**158**	**(100)**		
No clear system for feedback							1.08	0.29
Junior	74	(66.0)	38	(34.0)	112	(100)		
Senior	35	(74.5)	12	(25.5)	47	(100)		
Total	**109**	**(69.0)**	**50**	**(31.0)**	**159**	**(100)**		
Feedback is an insult in our culture							0.51	0.47
Junior	27	(24.0)	84	(76.0)	111	(100)		
Senior	14	(30.0)	33	(70.0)	47	(100)		
Total	**41**	**(26.0)**	**117**	**(74.0)**	**158**	**(100)**		

*significant p-value. Only students who responded to the questionnaire were included in the analysis

6.38, df - 2; *p*<0.05. The reliability of the questionnaire was assessed by calculating Cronbach's alpha (0.76; 95%CI - 0.69 to 0.81).

Discussion. In this study, the reliability of the used questionnaire as reflected by Cronbach's alpha (0.76; [95% CI: 0.69-0.81]) indicates a significant intercorrelation reliability among the items of the instrument. Approximately half of the participating students perceived the presence of barriers to feedback in their medical education. This finding signifies the importance and the urgency of addressing these problems. The higher perception of barriers by the senior students probably indicates the validity of this observation, as their longer exposure compared to their junior colleagues, permits for better evaluation. Unavailability of a clear system of feedback known to both students and faculty was perceived as the main obstacle facing proper implementation and utilization of feedback. The provision and utilization of feedback is an ongoing and systematic process, and its vital role will be affected seriously by the lack of a well known system to both students and faculty. Feedback should be incorporated within the curriculum, and offered to the students through a continuous and well-organized process.[4,11] Issues related to faculty were thought to be barriers to feedback. Issues such as lack of time and high clinical workload were reported as identified barriers to feedback by clinical teachers.[12] Lack of recognition of the teaching roles including the provision of effective feedback by clinical supervisors could negatively affect the provision of feedback to medical students.[12] Inadequate training of supervisors, especially in providing constructive feedback could lead to infrequent provision of feedback by tutors,[6] which could contribute to the reduced use and utilization of feedback by medical students.[13] In addition, clinicians occasionally may not be able to recognize the many opportunities for feedback in clinical settings, and tend to under-utilize them as a teaching tool.[3] However, there is always room for improvement in the tutors' provision of feedback.[14]

The new innovative trends in medical education, as the use of simulation and newly emerging teaching methods as gaming, could enhance opportunities of interactive student-teacher activities, and the availability of resources including time, and hence, increase the opportunities of the provision and utilization of feedback.[15-17] Acceptance of feedback might vary among different cultures. The Saudi culture is thought to be a conservative culture and probably students will be hesitant to seek and accept critical comments

regarding their performance. However, in this study, culture was not perceived as a barrier to feedback by medical students, as only a minority of students think that they will not seek feedback in future. Nevertheless, further studies are needed to clarify the influence of culture on the process and acceptance of feedback in medical education.

Undergraduate medical students expressed a positive attitude toward feedback. They expressed their interest to accept feedback and utilize it for their development. In fact, most of the sample indicated their need for feedback and expressed their readiness for its utilization. The activities of receiving constructive feedback are valued by medical students, and were perceived as an indication of high quality teaching.[18,19] However, senior students probably need more reassurance of proper implementation of feedback, and to monitor outcomes if they make use of feedback.

A limitation to this study is the fact that this study was conducted in only one medical college. This might affect the generalizability of the results of this study to other medical colleges. The second limitation of this study is that the reported barriers of feedback were based on the subjective view of undergraduate medical students, and not based on objective assessment. Despite these limitations, the findings of this study deserve serious consideration as the reported barriers of feedback could have short and long term implications that could adversely affect the learning of undergraduate medical students. Further studies are needed to confirm these barriers and propose for effective interventions.

In conclusion, this study has shown presence of obstacles, as perceived by medical students that could significantly disturb the process of feedback and minimize its utilization by undergraduate medical students. These reported barriers should be addressed by the decision makers of medical education to utilize the vital role of feedback in the learning process.

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Ethical Consent

All manuscripts reporting the results of experimental investigations involving human subjects should include a statement confirming that informed consent was obtained from each subject or subject's guardian, after receiving approval of the experimental protocol by a local human ethics committee, or institutional review board. When reporting experiments on animals, authors should indicate whether the institutional and national guide for the care and use of laboratory animals was followed.