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Engaging medical students in the feedback process

David A. Rogers, M.D., M.H.P.E.*, Margaret L. Boehler, R.N., M.S., Cathy J. Schwind, R.N., M.S., Andreas H. Meier, M.D., M.Ed., Jarrod C. H. Wall, M.D., Ph.D., Michael J. Brenner, M.D.

Department of Surgery, Southern Illinois University School of Medicine, PO Box 19655, Springfield, IL 62704-9655, USA

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Abstract

BACKGROUND: There are potential advantages to engaging medical students in the feedback process, but efforts to do so have yielded mixed results. The purpose of this study was to evaluate a student-focused feedback instructional session in an experimental setting.

METHODS: Medical students were assigned randomly to either the intervention or control groups and then assigned randomly to receive either feedback or compliments. Tests of knowledge, skills, and attitudes were given before and after the intervention.

RESULTS: There was a significant gain of knowledge and skill in the group that received instruction. Satisfaction was higher after compliments in the control group but higher after feedback in the instructional group. There was no change in the subject's willingness to seek feedback.

CONCLUSIONS: A student-focused component should be carefully included as part of an overall effort to improve feedback in surgical education. The role of medical student attitudes about feedback requires further investigation.

Feedback in clinical medical education is specific information provided by the teacher given with the intent to improve the student's performance.[1–3] Feedback has been described as an essential, even "crucial," feature of medical education,[1,2] and yet continues to be a source of dissatisfaction for students.[4,5] Considerable attention has been given to improving feedback in medical education to address the gap between the current reality and the ideal situation. Many of these efforts have been directed at the teacher and commonly have included faculty development programs focused solely or significantly on feedback.[6–10] There also have been systems developed that are designed to prompt faculty to provide feedback such as the use of e-mail prompts.[11]

An alternative strategy to improving feedback in medical education is through interventions that focus on the student. A potential advantage of this approach is that medical students would gain an understanding of the value of feedback in improving physician performance[12] and develop the lifelong habit of seeking it.

The most common student-focused approach used with medical students involves different types of encounter cards. The assumption for this approach is that giving these cards to the medical students both motivates and empowers them to seek feedback. When used within a single clerkship, this intervention was associated with increasing quantity, although not necessarily the quality, of feedback given to the medical students.[13–16] When applied to the entire clerkship year of a medical school curriculum, the use of these cards was associated with a significant reduction in the medical students' perceptions of the usefulness of the feedback that they received.[17]

* Corresponding author. Tel.: +1-217-545-6893; fax: +1-217-545-8971

E-mail address: drogers@siumed.edu

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A student workshop focused on feedback is another student-focused approach to improving feedback in clinical education. In the single report of this type in medical education, students participated in a 2-hour workshop in which they received information about feedback and had an opportunity to participate in a feedback role-playing exercise.[18] The impact of this intervention was evaluated using a quasi-experimental method that measured student perceptions related to feedback. There was a significant improvement in a number of measures of the medical students' perceptions related to feedback including their effectiveness in soliciting it. The purpose of the present study was to examine the strategy of a student-focused approach to engage medical students in the feedback process. The study was performed in an experimental setting and included multiple outcomes: knowledge about feedback, acquisition of a skill, satisfaction with feedback, and a global measure of the subject's willingness to seek feedback from a faculty member. The study hypotheses were that the intervention would produce an increase in knowledge about feedback and an increase in a global measure of the willingness to seek feedback from a faculty member. Consistent with previous research,[19] subjects receiving feedback would be less satisfied but obtain a higher level of technical skill proficiency than those who received compliments. After the intervention, this pattern of satisfaction would be reversed so that subjects receiving compliments would not only achieve a lower level of skill proficiency but also would be less satisfied when compared with those receiving feedback.

Methods

Institutional Review Board approval was obtained and then medical students were recruited to serve as study subjects. These medical students were in the clinical clerkship year but had not been on the surgical clerkship. A power analysis performed before the study commenced showed that there would need to be 14 subjects in each limb of the study to detect a 1-point difference on the 7-point scale used to measure the subject's satisfaction. Before randomization, each subject was given a written test of knowledge about feedback that required them to identify whether a phrase was feedback or a compliment. In addition, each subject was asked to indicate using a 7-point global rating their willingness to approach a faculty member for feedback with descriptors ranging from very unwilling to very willing. Finally, all subjects were videotaped tying a single 2-handed square knot. Subjects then were randomized into either the instruction group or the control group (Fig. 1). Subjects in both groups received identical technical skill training. Subjects in the instruction group also received a brief instructional session focused on feedback that included a definition of feedback and compliments, and examples drawn from everyday experiences. For example, the subjects were told that the phrase, "That is a lovely outfit" is a compliment whereas the comment, "You should wear black shoes with a black belt" would represent feedback. The instructional session also included a description of how feedback and compliments had affected skill acquisition and subject satisfaction in prior research.[19] All subjects then performed the skill in the presence of an instructor and were assigned randomly to receive either a compliment or feedback.

The post-test assessment of all subjects included a videotape of them performing the skill, a written test of their ability to distinguish between feedback and compliments, and a 7-point global rating of satisfaction with the feedback and their willingness to seek feedback from a teacher. The descriptors of the satisfaction scale ranged from very poor to truly exceptional. The videotapes were coded and rated by 4 blinded surgeon faculty members using a previously validated knot-tying evaluation instrument.[19] This instrument had been designed for evaluating 2 complete knots and so only the first part of the instrument was used for this study with a maximal score of 16.

The double randomization resulted in 4 groups for comparison. Some subjects received instruction about feedback and then received either feedback (IF) or complements (IC). Subjects in the control group did receive the skill instruction but did not receive the feedback instruction. Some of these subjects received feedback after their skill performance (CF) with the other subjects in this group receiving compliments (CC). The percentage of correct answers on the written test of knowledge about feedback and the knot tying score were compared using a paired samples *t* test. A 1-way analysis of variance (ANOVA) was used to evaluate the interaction between instruction and satisfaction, and independent sample *t* tests were used to compare the between-group average ratings of satisfaction. A 2-way ANOVA was used to evaluate the interaction between the change in the subject's rating of their willingness to seek feedback and the feedback instruction type.

Results

A total of 54 subjects completed the study with 13 subjects in the IF group, 14 in the IC group, 14 in the CF group, and 13 in the CC group. There was a significant difference between the pretest and post-test knowledge score in the instruction group (IF and IC) (67% vs 82%; $P = .001$) and no difference in these scores in the control group (CF and CC) (60% vs 63%; $P = .587$). The interclass correlation coefficient of the technical skill performance rating was .896 for the entire cohort. The performance ratings of the skill improved significantly in the group that received feedback (IF and CF) (5.2 vs 8.4; $P = .001$), whereas no improvement was observed in the group that received compliments (IC and CC) (5.1 vs 5.1; $P = .892$). The ANOVA showed a significant interaction between the average satisfaction rating and instruction type ($F = 9.8$;