ORIGINAL ARTICLE

## Feedback-giving Behavior of Medical Faculty towards Students in Clinical Education Based on Agenda-led Outcome-based Analysis (ALOBA) at Ibn Sina Teaching Hospital, Mashhad, Iran

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**Background:** Feedback is necessary for learners' development, and teachers and professors should be trained on the importance of feedback. This study aimed to determine the feedback status in clinical education using the agenda-led outcome-based analysis (ALOBA) feedback model.

**Method:** In this cross-sectional study, eight faculty members who were teaching in a 4-month period, at Ibn Sina Teaching Hospital were enrolled in Mashhad, Iran, in 2020. Their feedback-giving performance was recorded during a total of 66 clinical rounds. A valid checklist based on the ALOBA feedback model was used for collecting data.

**Results:** The status of the three areas of feedback, including organization of the educational feedback, constructive feedback, and feedback outcome, and the overall feedback status were desirable. The male faculty members had better educational feedback status than the female ones ($p < 0.001$). In addition, there was a significant difference between the scores of faculty members with less and more than 15 years of work experience ($p < 0.001$). Regarding the academic rank, the overall feedback status and feedback in each three areas of feedback were significantly different between associate professors and assistant professors ($p < 0.001$) and between full professors and associate professors ($p < 0.001$).

**Conclusion:** Feedback in the three areas of the ALOBA model was at a desirable level and was influenced by factors such as gender, work experience, and academic rank. Further studies are necessary to examine the status of providing feedback in clinical education.

**Keywords:** Feedback, ALOBA Model, Clinical Education, Medical Education, Faculty Performance

## سلوك أعضاء هيئة التدريس الطبيّة في تقديم التغذية الراجعة للطلاب في التعليم السريري بناءً على نموذج تحليل النتائج الموجه بالجدول (ALOBA) في مستشفى ابن سينا التعليمي، مشهد، إيران

**الخلفية:** تُعد التغذية الراجعة ضرورية لتطوير المتعلمين، وينبغي تدريب المعلمين والأساتذة على أهمية التغذية الراجعة. هدفت هذه الدراسة إلى تحديد حالة التغذية الراجعة في التعليم السريري باستخدام نموذج التغذية الراجعة الموجه بالجدول لتحليل النتائج (ALOBA).

**الطريقة:** في هذه الدراسة المستعرضة، تم شمل ٨ أعضاء هيئة تدريس الذين كانوا يدرّسون خلال فترة ٤ أشهر، في مستشفى ابن سينا التعليمي في مشهد، إيران، عام ٢٠٢٠. تم تسجيل أدائهم في تقديم التغذية الراجعة خلال إجمالي ٦٦ جولة سريرية. واستُخدمت قائمة تحقق صالحة بناءً على نموذج التغذية الراجعة ALOBA لجمع البيانات.

**النتائج:** كانت حالة المجالات الثلاثة للتغذية الراجعة، بما في ذلك تنظيم التغذية الراجعة التعليمية، والتغذية الراجعة البناءة، ونتائج التغذية الراجعة، والحالة العامة للتغذية الراجعة، مرغوبة. كان لأعضاء هيئة التدريس الذكور حالة تغذية راجعة تعليمية أفضل من الإناث ($p<0.001$). بالإضافة إلى ذلك، كان هناك فرق ذو دلالة إحصائية بين درجات أعضاء هيئة التدريس ذوي الخبرة العملية الأقل والأكثر من ١٥ عامًا ($p<0.001$). أما بخصوص الرتبة الأكاديمية، فإن الحالة العامة للتغذية الراجعة والتغذية الراجعة في كل مجال من المجالات الثلاثة كانت تختلف اختلافًا ذا دلالة إحصائية بين الأساتذة المساعدين وأساتذة المناصب العليا ($p<0.001$) وبين الأساتذة المساعدين والأساتذة المساعدين ($p<0.001$).

**الخلاصة:** كانت التغذية الراجعة في المجالات الثلاثة لنموذج ALOBA على مستوى مرغوب، وتأثرت بعوامل مثل الجنس والخبرة العملية والرتبة الأكاديمية. هناك حاجة إلى دراسات إضافية لفحص حالة تقديم التغذية الراجعة في التعليم السريري.

**الكلمات المفتاحية:** التغذية الراجعة، نموذج ALOBA، التعليم السريري، التعليم الطبي، أداء أعضاء هيئة التدريس

## وضعیت بازخورد آموزشی به دانشجو در عرصه تدریس بالینی بر اساس اصول تحلیل منبعث از نیاز و مبتنی بر پیامد (ALOBA) در بیمارستان آموزشی ابن سینای مشهد

**زمینه و هدف:** ارائه بازخورد برای یادگیری فراگیران ضروری است و معلمان و اساتید باید در مورد اهمیت بازخورد آموزش ببینند. در این مطالعه وضعیت بازخورد آموزشی به دانشجو در عرصه تدریس بالینی بر اساس اصول تحلیل منبعث از نیاز و مبتنی بر پیامد (ALOBA) بررسی شده است.

**روش:** در این مطالعه مقطعی، هشت نفر از اعضای هیأت علمی بیمارستان آموزشی ابن سینای مشهد که در بازه زمانی چهار ماهه در سال ۱۳۹۹ مشغول آموزش بوده اند در ۶۶ راند از لحاظ بازخورد آموزشی مورد بررسی قرار گرفتند. از یک چک لیست روا که بر اساس مدل ALOBA تهیه شده بود برای جمع آوری داده ها استفاده شد.

**یافته‌ها:** سه حوزه بازخورد شامل سازماندهی بازخورد آموزشی، بازخورد سازنده به دانشجو و پیامد بازخورد آموزشی به دانشجو و وضعیت کلی آن در سطح مطلوب بود. وضعیت بازخورد اعضاء هیأت علمی مرد بهتر از اعضاء هیات علمی زن بود ($p < 0.001$). تفاوت نمره وضعیت بازخورد آموزشی طبق مدل ALOBA در اعضاء هیات علمی کمتر از ۱۵ سال سابقه خدمتی با اعضاء هیأت علمی بیشتر از ۱۵ سال سابقه خدمتی معنی دار بود ($p < 0.001$). وضعیت کلی بازخورد و بازخورد در هر سه حوزه سازماندهی برحسب رتبه علمی عضو هیات علمی نیز متفاوت بود. تفاوت بین استادیاران و دانشیاران ($p < 0.001$) و نیز بین استادان تمام و دانشیاران ($p < 0.001$) از نظر آماری معنادار بود.

**نتیجه گیری:** بازخورد در سه حوزه مدل ALOBA در سطح مطلوبی بود و عواملی مانند جنسیت، سابقه کاری و رتبه علمی در وضعیت آن مؤثر بودند. مطالعات بیشتر برای بررسی وضعیت بازخورد آموزشی در عرصه آموزش بالینی ضروری است.

**واژه های کلیدی:** بازخورد، مدل ALOBA، آموزش بالینی، آموزش پزشکی، عملکرد هیأت علمی

## ایران کے مشہد میں ابن سائن ٹیچنگ ہسپتال میں کینیڈا کے تحت طبی اساتذہ کی طرف سے طلباء کو کلینیکل تعلیم میں فیڈ بیک دینے کا رویہ، ایجینڈا لیکڈ آؤٹ کم بیسڈ اینالیسز (ALOBA) کے مطابق

**پس منظر:** فیڈ بیک سیکھنے والوں کی ترقی کے لیے ضروری ہے، اور اساتذہ اور استادوں کو فیڈ بیک کی اہمیت پر تربیت دی جانی چاہیے۔ اس تحقیق کا مقصد ایجنڈا لیکڈ آؤٹ کم بیسڈ اینالیسز (ALOBA) فیڈ بیک ماڈل کا استعمال کرتے ہوئے کلینیکل تعلیم میں فیڈ بیک کی حیثیت کا تعین کرنا تھا۔

**طریقہ:** اس کراس سیکشنل تحقیق میں، ۲۰۲۰ میں ایران کے مشہد میں ابن سائن ٹیچنگ ہسپتال میں ۳ مہینوں کی مدت میں تدریس کرنے والے ۸ اساتذہ عملہ شامل کیے گئے۔ کلینیکل راؤنڈز کی کل ٦٦ میں ان کے فیڈ بیک دینے کا کارکردگی ریکارڈ کیا گیا۔ ڈیٹا اکٹھا کرنے کے لیے ALOBA فیڈ بیک ماڈل پر مبنی ایک درست چیک لسٹ کا استعمال کیا گیا۔

**نتائج:** فیڈ بیک کے تینوں شعبوں، جن میں تعلیمی فیڈ بیک کی تنظیم، تعمیراتی فیڈ بیک، اور فیڈ بیک کے نتائج شامل ہیں، اور فیڈ بیک کی مجموعی حیثیت مرغوب تھی۔ مرد اساتذہ کی تعلیمی فیڈ بیک کی حیثیت خواتین سے بہتر تھی ($p<0.001$)۔ اس کے علاوہ، ۱۵ سال سے کم اور زیادہ پریکٹیکل تجربات رکھنے والے اساتذہ کی اسکورنگ کے درمیان نمایاں فرق پایا گیا ($p<0.001$)۔ ایکادیمک رینک کے حوالے سے، فیڈ بیک کی مجموعی حیثیت اور فیڈ بیک کے ہر تینوں شعبوں میں فیڈ بیک پروفیسرز اور اسسٹنٹ پروفیسرز ($p<0.001$) اور اسسٹنٹ پروفیسرز اور پروفیسرز ($p<0.001$) کے درمیان نمایاں فرق پایا گیا۔

**نتیجہ:** ALOBA ماڈل کے تینوں شعبوں میں فیڈ بیک مرغوب سطح پر تھا اور اس پر جنس، کام کا تجربہ اور ایکادیمک رینک جیسے عوامل نے اثر انداز کیا۔ کلینیکل تعلیم میں فیڈ بیک دینے کی حیثیت کا مطالعہ کرنے کے لیے مزید تحقیق کی ضرورت ہے۔

**کلیدی الفاظ:** فیڈ بیک، ALOBA ماڈل، کلینیکل تعلیم، طبی تعلیم، اساتذہ کی کارکردگی

## INTRODUCTION

The complex process of learning does not result from the mere teaching of theoretical knowledge. Crucial components for enhanced learning are reflection and feedback (1). Feedback is a core element of medical education. There are different definitions for feedback, but all existing literature reflects that it is a constructive process designed to achieve ongoing elevation in the learner's practice, and its main purpose is to identify and convey the strengths and weaknesses of the learner's performance (2). Constructive feedback influences cognitive and behavioral processing and is often linked to motivation with a growth mind-set, which helps to identify and correct mistakes, foster clinical skills, and boost patient care (1, 3, 4). Many factors influence the effectiveness of feedback, such as the ability of faculty members, the characteristics of learners (confidence and fear), and the feedback message, which should be nonjudgmental, nonthreatening, clear, specific, timely, and actionable (2, 5, 6).

Different models of giving feedback have been introduced. The learner's role was usually neglected in the traditional models. However, the contemporary models emphasize the learner's role as an active participant in both seeking and responding to feedback (4, 5).

Pendleton's Rules, a conventional feedback model, and the agenda-led outcome-based analysis (ALOBA) are the two models that are used more extensively. In Pendleton's Rules, the educator first highlights the positive aspects, then discusses areas of improvement and the required skills to achieve them (7). The two sides can then continue their discussion on what could be done differently. The Pendleton's Rules has some drawbacks, such as inefficient management of time and reinforcement of the learner's strengths in the beginning, which could create rigidity and artificiality; thus, the learner loses the opportunity to discuss topics interactively (8). These limitations were compensated for by Silverman, who devised the ALOBA model, in which the principal idea is first to identify the areas that the learner needs help with; then direct the discussion toward achieving the learner's goal, encouraging them to perform self-assessment (2, 9). At the right time, the person gives feedback or the facilitator provides the agenda, new concepts, and theories. This right of choice empowers the learner, reduces defensiveness, and provides an opportunity for changes in behavior.

Kurtz et al. classified the ALOBA principals as follows (10):

1. Organizing the feedback process
2. Giving useful and efficient feedback to each other
3. Ensuring that feedback has led to a deep understanding and development of specific skills (feedback outcome)

Although feedback is an important component of the hidden curriculum, which is defined as values, views, and lessons learned in educational environment which are unwritten, unofficial, and often unintended (11), studies show that the faculty-student relationship, which is an indicator of faculty professionalism (12) and a key step in obtaining clinical skills, has often been improperly handled or even neglected by clinical educators (13, 14), and trainees have often been dissatisfied with the quantity and quality of feedback they receive (4, 15). Besides, the unprofessional application of feedback could lead to nervousness, shame, or defensiveness in the learners, which is why some faculty members avoid providing feedback and state that they are not sufficiently prepared to give it constructively (2, 14). Assessing the current status of feedback delivery is crucial in order to identify gaps and improve the feedback quality, particularly in clinical settings where medical students should acquire a plethora of theoretical knowledge and practical skills (16).

Since the status of giving feedback to medical students during clinical education in Iran is not clear, we performed this study to determine the feedback-giving behavior of medical faculty members in clinical rounds using the ALOBA model at Ibn Sina Teaching Hospital, Mashhad, Iran.

## METHODS

This was a cross-sectional study that included all clinical rounds, which were held in a 4-month interval, at Ibn Sina Teaching Hospital affiliated to Mashhad University of Medical Sciences, Mashhad, Iran, in 2020. At first, all educational feedback models were analyzed, among which the ALOBA model was selected as the most comprehensive one. Then, a checklist was created according to which the professor's status of the feedback was scored after being evaluated based on the ALOBA model. The checklist, including the mentioned areas, was provided based on the ALOBA model. It was composed of 20 questions, organized into 3 groups. The first 4 questions were related to organizing the feedback process, 11 questions were related to constructive feedback, and 5 were about feedback outcomes. Also, the checklist concluded questions ranging from zero to ten in the area of clinical teaching and included questions about age, gender, length of professional work experience, academic rank of the faculty member, and the number of students who attended each clinical round as well as questions which determined the status of the organization of feedback, constructive feedback, and feedback outcome. Content validity of the checklists was confirmed by a number of medical education and clinical medicine specialists.

One of the hospital's nurses who was present at all clinical rounds was selected to complete the checklist. This nurse, who was familiar with faculty members, completed the checklist and this prevented the error caused by the presence of strangers in the rounds. This nurse was trained on the content of the checklist and how to fill it out for 6 hours. Then, some samples of the checklists were filled out by the nurse, and the errors in the checklists were corrected. After coordinating with the head of the Psychiatry department and obtaining the consent of the group members, data were collected by the trained nurse during the clinical rounds, without letting the faculty members notice that their activity was being recorded.

The statistical methods used in this study include the central index mean, T-test, and one-way ANOVA. Mean was used to determine the status of the three feedback areas of the ALOBA model. T-test and one-way ANOVA were used to compare the status of feedback between two groups and within multiple groups, respectively. All statistical analyses were performed using SPSS statistical software (version 16), and in all statistical tests, the significance level was considered as $p < 0.05$.

## RESULTS

The status of educational feedback was assessed from a total of 66 clinical rounds, performed by 9 clinical faculty members in the Psychiatry department of Ibn Sina Teaching Hospital in Mashhad, Iran. Out of a total of 66 rounds, 11 rounds were conducted by faculty members with the rank of full professor, with a mean age of 52 years and a mean professional experience of 21 years. Also, 31 rounds were conducted by associate professors with a mean age of 48 years and 15 years of professional experience. The remaining 24 rounds were conducted by assistant professors, with a mean age of 46 years and professional experience of 7.5 years.

Sixty rounds (90%) were conducted by male faculty members, and the rest by female faculty members. Overall, 15 (22.7%) of the faculty members had less than 15 years of professional experience, while the rest had more than 15 years of experience. Regarding the number of students present in each clinical round, 21 rounds (32%) were conducted with more than 4 students and the rest with fewer students. The characteristics of the clinical rounds are given in Table 1.

The results of the feedback evaluation were examined based on the ALOBA model in three areas of feedback organization status, constructive feedback, and the outcome of educational feedback to the student.

The overall feedback status was in a favorable state with a score of $8.19 \pm 0.92$ out of a total score of 10. In the area of the organization of educational feedback to students, the score was in a favorable state, with a mean of $7.98 \pm 1.07$ out of 10. This area included attention to the goals and needs of the learner and the patient, encouragement of self-assessment and problem-solving, and the participation of all learners in problem-solving during the feedback process.

The second area, the status of constructive feedback to students in clinical teaching areas, was also in a favorable state, with a mean score of $8.35 \pm 0.84$ out of a total score of 10. This area of feedback included items such as timeliness, non-judgment, and balance in paying attention to strengths and weaknesses, respectfulness, and realism in feedback.

Finally, the third area, the status of the outcome of educational feedback to students in the areas of clinical teaching, demonstrated satisfactory results, with a mean score of $8 \pm 1.11$ out of a total score of 10. This section included items such as repetition of practical skills, broader presentation of the topic, ensuring comprehensive understanding by the learner, and summarizing the content during the feedback process (Table 2).

The results were also compared according to the variables of gender, academic rank, professional experience of faculty members, and the number of students present in clinical rounds.

The overall feedback status of male faculty members, with a mean score of $8.31 \pm 0.88$, was better than that of female faculty members with a mean score of $6.98 \pm 0.19$, and this difference was significant at the 0.05 level ($P<0.001$). This difference was evident in the three areas of organization, constructive feedback, and feedback outcome.

The overall feedback status of faculty members with more than 15 years of experience was better

**Table 1. The number of performed clinical rounds, in regard to faculty members' characteristics**

| Characteristics | | Number of clinical rounds | Mean Professional work experience (years) | Mean Age (years) |
|---|---|---|---|---|
| Faculty ranking | Full professor | 11 | 21 | 52 |
| | Associate professor | 31 | 15 | 48 |
| | Assistant professor | 24 | 7.5 | 46 |

**Table 2. Mean scores in the three separate areas of feedback as well as the overall feedback score based on the ALOBA model**

| Variable | Mean (SD) |
|---|---|
| Organization of the feedback process | 7.98 (1.07) |
| Constructive feedback | 8.35 (0.84) |
| Feedback outcomes | 8 (1.11) |
| Overall | 8.19 (0.92) |

with a score of 8.46 ± 0.87, compared to faculty members with fewer years of experience, with a score of 7.26 ± 0.32, and this difference was significant (P < 0.001). This difference was also apparent in the three areas of organization, constructive feedback, and feedback outcome. No difference was observed between the feedback statuses according to the number of students present in clinical rounds (Table 3).

The overall feedback status as well as the scores in each of the three areas of the ALOBA model differed according to the academic rank of faculty members. The highest score was assigned to associate professors with a score of 8.9 ± 0.52, and the lowest was related to full professors with a score of 7.1 ± 0.36. The between-group differences are shown in Table 4. Considering age, a significant difference was seen between the 31-40 years old group and the 51-60 years old group (P < 0.001).

**Table 3. The difference between mean feedback scores according to the gender, professional experience of faculty members, and the number of students in rounds**

| Variable | | Number of rounds | Mean (SD) | P-value † |
|---|---|---|---|---|
| Gender | Male | 60 | 8.31 (0.88) | < 0.001 * |
| | Female | 6 | 6.98 (0.19) | |
| Professional experience | Less than 15 years | 15 | 7.26 (0.22) | < 0.001 * |
| | Over 15 years | 51 | 8.46 (0.87) | |
| Number of students in rounds | Up to 4 | 45 | 8.03 (0.93) | 0.103 |
| | More than 4 | 21 | 8.54 (0.82) | |

† T-test was used to compare two groups.
* P-value < 0.05 was considered significant.

**Table 4. Between-group differences regarding feedback status according to the faculty members' age range and scientific rank**

| Variable | | Difference between means | Standard Error of Measurement (SEM) | P-value † |
|---|---|---|---|---|
| Age | 31-40 / 41-50 | 0.89 | 0.27 | 0.05 |
| | 31-40 / 51-60 | 1.39 | 0.29 | < 0.001 * |
| | 41-51 / 51-60 | 0.50 | 0.22 | 0.07 |
| Scientific rank | Associate professor/ Assistant professor | 1.29 | 0.14 | < 0.001 * |
| | Assistant professor/ Full professor | 0.58 | 0.19 | 0.10 |
| | Full Professor/ Associate professor | 1.88 | 0.18 | < 0.001 * |

† T-test was used to compare two groups.
* P-value < 0.05 was considered significant.

## DISCUSSION

In the present study, we examined how much faculty members are familiar with the ALOBA feedback model and the status of using it in the clinical environment. The ALOBA model consists of organizing the educational feedback, constructive feedback, and feedback outcome, which were evaluated in this study along with the general status of the feedback. Further, the educational feedback status was assessed according to the age, university rank, gender, and length of professional experience of the faculty members as well as the number of students who attended each clinical round.

The results indicated that in the clinical rounds conducted at Ibn Sina Hospital, Mashhad, the status of organizing educational feedback to student (mean score: 7.98), constructive feedback to student (mean score: 8.35), educational feedback outcome to student (mean score: 8), and the overall status of the feedback to student (mean score: 8.19) were all at the desired level. In addition, the status of constructive feedback (mean score: 8.35) was the most desirable area. The desirability of all three areas of the ALOBA model reflects the full application of educational feedback based on this model.

The results of this study are not in line with those of Haghani and colleagues (17), who conducted a study entitled "Perceived Feedback in Clinical Education of Midwifery Students in Isfahan University of Medical Sciences." The results of their study showed that the principles of feedback provision in three areas of content, method, and feedback providing skills were not observed favorably.

In another study in which the quantity and quality of feedback in clinical education were investigated from the midwifery students' point of view, it was concluded that feedback is not a neglected factor in midwifery education, and was even desirable in quantitative terms. However, considering qualitative terms, especially from the point of view

of students in higher education levels, feedback was not offered at an optimal level. This study is a considerable one of its kind since it has addressed the quantitative dimensions, including sequence, time, method, conditions, and structure of feedback, in addition to its qualitative dimensions (18).

It is shown that gender bias can result in varying distributions of the frequency and types of feedback (5). The results of this study indicated a significant difference between the educational feedback given by male and female faculty members: The male faculty members had better educational feedback status than the female ones. One of the reasons for this difference may be the clinical environment, not the gender itself. The educational environment is a determining factor in motivating learning since it reinforces the behaviors leading to better learning and academic achievement (19). Thus, the clinical environment is likely to increase the impact of the male gender on educational feedback to the student.

The results indicated that there was a significant difference between the scores of faculty members with less than 15 years of professional work experience and those with more than 15 years of experience. In other words, the latter group acted better than the former group in terms of educational feedback. Work experience affects many educational variables, and educational feedback is no exception (5).

Although it is recommended that for professionalism concerns, feedback should be delivered in a one-on-one setting (5), in the current study, the number of students present in rounds did not significantly affect the status of educational feedback. The results demonstrated that the difference between clinical rounds with up to four students and those with more than four students was not significant, and both groups were provided with similar educational feedback. One reason for this non-significant difference could be the time the faculty members spend on each student in the ALOBA model.

The age of the faculty members in this study was in the range of 31 to 60 years. Therefore, they were divided into three age groups of 31 to 40, 41 to 50, and 51 to 60. The results of the comparison between these groups demonstrated that the age group of 41 to 51 and the age group of 51 to 60 were not significantly different regarding the general status of feedback. However, the age group of 31 to 40 was significantly different from the other groups. One possible reason may be the higher motivation of younger faculty members.

Feedback-giving status was also related to faculty members' rank: there was a significant difference between assistant professors and associate professors and also between full professors and associate professors. However, there was no significant difference between assistant professors and full professors. This finding suggests that the educational feedback status is improved by academic rank promotion from assistant professors to associate professors.

In the present study, feedback-giving behavior was determined only based on faculty performance. In a study that compared the views of residents and medical students on the way they received feedback, both groups indicated that they did not receive proper feedback from medical teachers (20). Nevertheless, the results of a study which compared the viewpoints of students and teachers showed that staff members assigned a higher score to their feedback providing status in comparison with the scores medical students gave to their teachers (21). Therefore, providing proper and effective feedback can be done by empowering the faculty in this regard. It is also recommended to investigate the types of feedback and introduce the best method to them. The status of educational feedback based on the ALOBA model should be specifically taken into consideration since it is a comprehensive model.

In a review study that presented the principles and features of effective feedback and feedback provision models, the ALOBA model has been considered as an optimal feedback model (22). This model corrects the shortcomings of Pendleton's approach; two of which are rigidity and not actively involving the learner in reaching their goal (23).

Although empowering medical teachers is effective in improving the quality of feedback, it is also necessary to empower students to receive and use feedback effectively. Understanding the purpose and structure of feedback by both students and teachers will help increase the efficacy of education (24). If students realize that they are respected and confident that constructive feedback is independent of final evaluation, learners' reaction to the feedback will be a valid criterion for program success (25).

## CONCLUSION

The desirability of all three areas of the ALOBA model in this study reflects the full application of educational feedback. Since the ideal volume and frequency of feedback remain unclear, it is recommended that the status of providing feedback in clinical education be broadly examined in future studies using the viewpoints of all those who benefit from it. Moreover, necessary actions should be taken if there is not enough information in this field.

**Ethical Considerations:**

Ethical issues including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc. have been completely observed by the authors. The current research was approved by the organizational ethics committee of Mashhad University of Medical Sciences with the

IR.MUMS.fm.REC.1394.286 code of ethics. It is worth mentioning that to comply with the principles of confidentiality, nurses' names and personal information were not included in the data analysis.

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