



A Study to Analyze Narrative Feedback Record of an Emergency Department

Chen-Wei Lee¹, Guan-Liang Chen², Mei-Ju Yu¹, Po-Liang Cheng¹, Yi-Kung Lee^{1,3,*}

¹Department of Emergency Medicine, Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Chiayi, Taiwan

²Center for Innovative Research on Aging Society, National Chung Cheng University, Chiayi, Taiwan

³School of Medicine, Tzu Chi University, Hualien, Taiwan

Background: This study adopts the Situation–Behavior–Impact–Action (SBIA) model to examine the compliance of narrative feedback in the Entrustable Professional Activities (EPAs)-based e-Portfolio system for clinical preceptors in the emergency department of a regional teaching hospital, and analyzes the applicability of its application in emergency clinical training to increase the feasibility of improving the quality of clinical preceptors' feedback content.

Methods: Application of data mining technique to analyze 928 data points was recorded by 14 clinical teachers from April 2017 to May 2019. These data points were narrative feedback from workplace direct observation, which was recorded in the EPAs-based e-Portfolio.

Results: The majority of the narrative feedback consisted of only one component, behavior observed (53.99%) and action suggestion (17.24%). Some feedback consisted of two to three components; which were behavior observed–action suggestion (20.37%) and situation description–behavior observed–action suggestion (1.29%). Only a few feedbacks consisted of all four components: situation description–behavior observed–possible impact–action suggestion (0.75%).

Conclusions: The current narrative feedback is from the basic appearance of SBIA, but there still got room for improvement. The narrative feedback should be given according to SBIA model in order to provide a comprehensive and constructive learning outcome. The narrative feedback recorded in EPAs-based e-Portfolio provides the delay of feedback effect. Thus, multiple feedbacks from various clinical teachers could make the assessments more concrete and outline the authentic clinical condition of the trainees.

Key words: *Entrustable Professional Activities (EPAs), EPAs-based e-portfolio system, narrative feedback, SBIA model (Situation, Behavior, Impact, Action)*

Introduction

The World Federation for Medical Education has put forward the concept of continuous unity in medical education.^{1,2} This is well-aligned with competency-based medical education (CBME) as the trend of medical education in the new century, emphasizing the transformation of core competencies into profes-

sional competencies for medical tasks so as to obtain the ability to provide medical services independently.^{3,4}

In particular, the ability indicators of Entrustable Professional Activities (EPAs) serve as a basis for the assessment of the integrity and integration of clinical tasks, and this has established a clear direction for residents to move toward to develop clear profes-

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*Corresponding author: Yi-Kung Lee, MD, MPH, Department of Emergency Medicine, Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, No. 2, Minsheng Rd., Dalin Township, Chiayi County 622, Taiwan. E-mail: lyg1968@gmail.com

sional competencies, and it has thus be regarded as an important method for implementing CBME.^{5,6} In addition, clinical preceptors provide specific clinical feedback based on the Emergency Medicine Milestone Project's (Milestone's) detailed standards as the structure and basis for a complete evaluation of residents' training, which all sides believe to be a strategy to implement CBME effectively.⁷

To implement EPAs in the practices of medical education, many hospitals have begun to build an EPAs-based e-Portfolio system. Through the assistance of this kind of system, clinical preceptors can record the evaluation, observation, and narrative feedback of residents and compile them into each resident's evaluation content, narrative feedback, as well as the learning process and experience, to review their learning effect and the quality of teaching guidance.⁸⁻¹⁰

In the clinical environment of the emergency room, most of the teaching feedback are provided in the form of oral feedback without being recorded; such feedback is simple and intuitive in such a busy and urgent situation but may be difficult for students to reflect and absorb. In the emergency department of this study, in addition to the original clinical feedback, clinical preceptors would choose a case to offer the resident online narrative feedback for each shift of duty. Because of the establishment of the EPAs-based e-portfolio system, this study had collected the narrative feedback provided by the clinical preceptors to the residents in the system and can analyze the contents of these narrative feedback records using the SBIA model.

The EPAs and narrative feedback implementation have three periods:

- (1) Initial period: Since 2017, in addition to clinical feedback, clinical preceptors were motivated to provide additional narrative feedback and registered on the e-portfolio system.
- (2) Observation period: During the year of 2018, the implement and functions of the system were reviewed.
- (3) Promotion period: With the aim of implementing CBME and EPAs systematically, the SBIA model was to discuss the applicability of feedback.

In this study, the Situation–Behavior–Impact–Action (SBIA) feedback model is chosen as the framework for analyzing. The study objectives are as follows:

- (1) To analyze the distribution of the number of piec-

es of narrative feedback given by clinical preceptors from 2017 to 2019;

- (2) To explore the extent to which clinical preceptors' narrative feedback is in line with the SBIA model as well as the proportion, quantity, and tendency based on the SBIA model;
- (3) To explore the connotation of the SBIA feedback model and its applicability in clinical emergency training;
- (4) To explore the feasibility of using the SBIA principles to improve the quality of the feedback from clinical preceptors.

Methods

Data Analysis Framework

This study is based on the Situation–Behavior–Impact (SBI) feedback method proposed by Weitzel. Weitzel pointed out that feedback only worked when situation, behavior, and impact were included.¹¹ The SBI model provided a simple and effective method for effective feedback planning and practice.^{12,13} “S” refers to the specific description and clarification of a specific situation at the time of the behavior that is happening. Of all elements, specificity is an important element of providing the context, with the function of providing specific contextual information to help them reproduce the situation of a given event. As for “B,” it needs to focus on the description of movements and provides clear factual information about the behavior, rather than judging the behavior. “I” should emphasize or indicate the impact of the behavior on other people and the resulting emotional reaction, rather than commenting on or criticizing recipients' behavior.

This study uses the SBI model as the basis for analysis. Generally speaking, clinical feedback should be simple and direct. However, in the case of narrative feedback recorded on the EPAs-based e-portfolio system afterward, the SBI model can become an important bridge for developmental dialogue.¹⁴ To respond to the practical needs of the clinical teaching situation, in our hospital, “A” for action suggestion is added to this model.

Based on this, there are four aspects of the analysis framework of this study, namely situation (that is, the situation where cases are reproduced), behavior (that is, the medical treatment and actions), impact (that is, the relevant impact of behavior), and action (that is, suggestions for actions to improve behavior).

Sources of Data

The methodology for this study is a content analysis. This method is to classify the data into categories as well as summarize, statistically analyze them, and make narrative explanations in an objective and systematic manner. When a content analysis is conducted, there are five main tasks in data collection and analysis, namely sampling data, defining categories, defining the recording unit, defining the contextual unit, and defining the counting system.¹⁵

The source of the data for this study is the EPAs-based e-portfolio system executed by the emergency department of a regional teaching hospital; the narrative feedback provided by clinical preceptors on the medical treatment administered by residents on the ground is adopted as the study material. The data had been collected from 928 pieces of narrative feedback on the EPAs-based e-portfolio system provided by 14 clinical preceptors between April 2017 and May 2019.

Tools and Data Analysis

The tool for this study is a “narrative feedback analysis form,” which is developed based on the SBIA model and relevant literature regarding feedback, and the data was analyzed based on the principles of the content analysis. First, in terms of “defining categories,” this study developed the “feedback analysis form” based on SBIA’s theory on feedback to analyze the four dimensions of SBIA; then, it defined the application of SBIA on clinical emergency sites and provided examples that corresponded to medical cases to reach a common ground for content analysis and calculation.

Second, in terms of the “recording unit,” the description of the “narrative feedback” was used as the unit of analysis. Third, the “contextual unit” refers to a larger unit including the recording unit; for example, the recording unit is a word or a phrase while the contextual unit may be a word, sentence, paragraph, or a topic. The recording unit in this study is narrative feedback, and the contextual unit is SBIA, BA, B, or other combinations. For example, the narrative feedback is “skilled in lumbar puncture techniques, and anesthesia was carried out appropriately,” which is in line with the contextual unit item of “B”.

Finally, as for the counting system, after defining the categories, recording unit, and contextual unit, the method of quantifying data was further determined. According to the actual situation, in which feedback

was provided, this study counted the number of pieces of feedback in line with different combinations of SBIA, BA, SBA, A, and other combinations of SBIA, respectively, to have an understanding of the current number of pieces of feedback from the clinical preceptors that conformed with the SBIA rules.

After the analysis framework was determined, a data analysis was performed. The most commonly used method of interpreting the content to analyze the data is to adopt the frequency, the percentage, or the proportion of particular content to the overall content as the basis for the content analysis. As for the calculation method of the data in this study, each piece of feedback on each case provided by the clinical preceptors would be entered on to the “narrative feedback analysis form” based on the category determined by the researcher before the number and percentage of the pieces of feedback in each category were counted and calculated.

Validity and Reliability

The researcher invited experts and practitioners in the medical and education fields to review and revise the topics and categories for the tool to analyze. In order to establish the reliability of the analysis, this study invited two analysts to analyze the same data and then compared the consistency of the results. The higher the consistency is, the higher the reliability is. According to the reliability test formulas, the degree of mutual agreement is $P = 2M/(N1 + N2)$, and the reliability value is $R = N \times P/1 + [(N - 1)P]$ (M: the number of items to which the two analysts agreed; N: the number of items to which the two analysts should agree);¹⁶ calculations were performed according to the above-mentioned formulas. When the analysis of the narrative feedback in this study was performed, a total of 928 pieces of data were analyzed, and the mutual agreement value of P was 0.89 and the reliability value of R was 0.94; therefore, the reliability of the analysis in this study was quite high. As for the narrative feedback materials with inconsistent degrees of agreement between the two analysts, they would discuss them with a senior emergency physician before classifying the text feedback again.

Results

Overall Distribution of Narrative Feedback Given by Clinical Preceptors

This study has adopted the SBIA analysis frame-

work to classify and analyze the records of narrative feedback provided by the clinical preceptors at the emergency department. The results are shown in Table 1.

First of all, in terms of the number of pieces of feedback provided over the years, the feedback data in 2018 did not increase but decreased, because it had not been promoted proactively and strongly, resulting in stagnation in the number of pieces. But in the first half of 2019, the narrative feedback data increased nearly twice as much as the implementation was actively and systematically promoted and the launch of a reward system.

In addition, according to the classification results based on SBIA, B for behavior, which described the correctness or deficiency of medical treatment and behavior, stood at the first place, with 501 pieces, accounting for 53.99%, followed by BA (behavior–action), which described behavior and action suggestions, with a total of 189 pieces, accounting for 20.37%. What came as the third place was A (action), which described action suggestions, with a total of 160 pieces, accounting for 17.24%. There were only 8 pieces of feedback in line with the feedback principles of SBIA, accounting for 0.86%. However, based on the feedback records over the past three years, it is found that there is an increasing trend for the narrative feedback provided by clinical preceptors to begin to demonstrate the connotation and principles of SBIA.

Narrative Feedback in Line With All Four Principles of SBIA

Under the analysis framework of SBIA, there were a total of 7 pieces of feedback in line with the principles of SBIA, accounting for 0.75%. In other words, these 7 pieces of narrative feedback included a complete description: reproducing the situation of a given case, resident’s performance of medical treatment and behavior, relevant impacts caused by treatment and behavior, and a subsequent description of action suggestions. Although the complete feedback is a burden for clinical preceptors, the complete record and description can help residents recall the entire learning course when they reflect on particular medical behavior in the future.

Examples of SBIA:

There was a detailed inquiry about the pathogenesis of the trauma, so there was a need to activate the trauma team. The initial treatment of the open fracture, including cleaning of the wound and administration of antibiotics, was carried out precisely all at once. In addition, in the beginning, the functions of the dorsalis pedis artery and movement were evaluated. Because an arterial injury was suspected, a

Table 1. Recapitulation table of the overall distribution of narrative feedback from clinical preceptors

Analysis framework of SBIA		2017 Apr–Dec		2018 Jan–Dec		2019 Jan–May		Subtotal	
Number of matching items	Type	N	%	N	%	N	%	N	%
Four items	SBIA	0	0.00	0	0.00	7	1.41	7	0.75
Three items	SBA	0	0.00	0	0.00	12	2.42	12	1.29
	BIA	0	0.00	1	0.56	5	1.01	6	0.65
	SBI	0	0.00	0	0.00	5	1.01	5	0.54
	SIA	0	0.00	0	0.00	1	0.20	1	0.11
Two items	BA	9	3.54	52	29.21	128	25.81	189	20.37
	BI	0	0.00	1	0.56	9	1.81	10	1.08
	SA	0	0.00	0	0.00	10	2.02	10	1.08
	SB	1	0.39	1	0.56	8	1.61	10	1.08
One item	B	170	66.93	96	53.93	235	47.38	501	53.99
	A	62	24.41	25	14.04	73	14.72	160	17.24
No matching item		12	4.72	2	1.12	3	0.60	17	1.83
Subtotal		254	100.00	178	100.00	496	100.00	928	100.00

A: action; B: behavior; BA: behavior–action; BI: behavior–impact; BIA: behavior–impact–action; SA: situation–action; SB: situation–behavior; SBA: situation–behavior–action; SBI: situation–behavior–impact; SBIA: situation–behavior–impact–action; SIA: situation–impact–action.

CTA scan of the right lower limb was evaluated in the beginning. During the period, a Doppler examination of the left foot was conducted in the spare time to assess if the arterial function should be diagnosed as impaired. In the case that an arterial injury is suspected, a physical examination can be used to assess the level of the arterial injury. If it is on the open fracture, it may cause shock; if it is on the femur shaft fracture, it will cause severe swelling and/or compartment syndrome. Moreover, the patient is conscious, so if you want to race against the time for a CTA diagnosis, you do not need to do a brain CT scan or a chest CT scan. (SVC02M)

This is a patient with a severe headache, and a CT scan revealed a cerebral aneurysm and some bleeding around it. The reason that the patient still has consciousness is because aneurysm has not ruptured yet. You communicated with the patient and family members in an encouraging and comforting manner without disclosing the degree of severity of the disease to the patient. I think it is necessary to inform the family members of the severity of the disease and possible progression. In the case that the aneurysm suddenly ruptures and the condition suddenly deteriorates, it may exceed the family members' expectations and cause subsequent misunderstandings. (SVB05M)

Narrative Feedback in Line With the Three Principles of BIA, SBA, SBI, and SIA

Under the analysis framework of SBIA, there are four combinations of three principles, namely BIA, SBA, SBI, and SIA. Among them, there were 12 pieces in line with SBA, accounting for 1.29%; 6, 5, and 1 for BIA, SBI, and SIA, respectively (accounting for 0.65%, 0.54%, and 0.11%, respectively).

An example of BIA:

The technique was successfully implemented independently, but you might be too nervous to open the three-way cover in the

preparation work, so the subsequent operations were not carried out smoothly. Ultrasound can be used for localization first, because many patients have scoliosis, and manual localization may not be able to find the optimal location. (SVB05M)

An example of SBA:

From the medical history, we can learn that the patient's wheezing problem was the result of liver cirrhosis and pulmonary edema. After verification, the correct method of drainage was adopted to decompress. Because the patient has tachypnea: (1) After the massive hydrothorax is diagnosed, ultrasound can be used to directly assess whether pumping can be employed to Decompress. (2) An assessment should be conducted as to whether the patient can have an X-ray scan by foot or wheelchair because respiratory distress may occur to the patient as a result. (SVC02M)

An example of SBI:

The patient has a family history of nosebleeds and hypertension, so there is a concern about the difficulty of stopping the bleeding due to nosebleeds because of hypertension. The bleeding had stopped when the patient arrived for medical treatment, and you still offered proper empathetic care, proper examination, and comfort. You understood the issues that patients and their families were most worried about and gave proper health education accordingly. (SVC01M)

An example of SIA:

This patient looked strong on the appearance. He was diagnosed with cardiogenic pulmonary edema. He was very unwilling to be hospitalized because of work, so he felt bad after learning about the diagnosis. He was angry and walk to the toilet after the tourniquet was taken off. After the patient returned and sat on the bed, no physical or verbal conflict erupted. At this

time, two aspects should be considered. On one hand, the occurrence of violence in the emergency room should be prevented; on the other, the patient's rights should be protected. You should tell the patient in a calm tone that his blood pressure may need to continue to be monitored. If the patient does not agree, you do not have to force him. You should inform the patient and his family members of the risks and record them in his medical record. (SVC02M)

Narrative Feedback in Line With the Two Principles of BA, BI, SA, and SB

Under the analysis framework of SBIA, there are combinations of two principles, namely BA, BI, SA, and SB. Of them, there are 189 pieces in line with BA, accounting for 20.37%, and 10 for each of the other three combinations, accounting for 1.08%, respectively.

An example of BA:

You arranged suction and drainage for the patient suspected of having pleural effusion infection and have the knowledge of the indications of thoracentesis. You need to accumulate more experiences in choosing pigtail or chest tube. (SVB02M)

An example of BI:

You have the knowledge of the anatomy of thoracotomy and relevant procedure operations, but you were not decisive enough during the operations, which might delay the treatment for critical patients. (SVB03M)

An example of SA:

The patient has severe anemia. The anemia examination was currently limited to the examination of gastrointestinal bleeding, and you were not proficient enough in the treatment of the symptoms and stabilizing the conditions. The basic physical examination of the weak also needs to be exhaustive. You know how to assess the severity of

anemia, but you need to read more books to learn relevant knowledge regarding the tendency of individual cases. (SVC02M)

An example of SB:

This case is about lung contusion multiple ribs fractures and pneumothorax. You undertook great communication with the patient and family members, put the chest tube in quickly to decompress, and carried out effective anesthesia to relieve the patient's pain. You mastered the technique of placing the chest tube and knew how to avoid complications. (SVC01M)

Narrative Feedback in Line With One Principle of B or A

Of the 928 pieces of narrative feedback, there are 501 pieces provided by clinical preceptors mentioning only the residents' "medical behavior," accounting for 53.99%, and there are 106 pieces only providing "action suggestions," accounting for 17.24%, without any further description and explanation in the content.

Examples of B:

Trachway intubation was undertaken successfully for the OHCA patient. (SVB02M)

You were proficient in the lumbar puncture technique, and anesthesia was performed on the lumbar spine precisely; you also knew how to respond and cope when a technique was not implemented successfully. (SVC01M)

You interpreted the CT results correctly as well as reported and discussed them with sub-specialists. (SVB04F)

Examples of A:

You should be more familiar with the dosing of medicine. When you have questions during the ECG interpretation, you should consult with the division of cardiology first. (SVC05M)

Before performing treatment, it is recommended that the patient be positioned suitably for the treatment, such as the direction of the head, the position of the oxygen tube, and the height of the bed. (SVB01M)

History of tarry stool and pale conjunctiva on initial PE will defer the routine use of Vena for patient with dizziness! (SVC04M)

According to the study results above, it has demonstrated that the frequency of the narrative feedback provided by clinical preceptors has increased with time and that the content of the feedback has become more specific and effective after the experience in entering multiple pieces of feedback has accumulated. However, there was only a small number of clinical preceptors providing depiction of the “situation of cases” that could deepen residents’ overall impression of clinical treatment. Incomplete situation of the treatment of cases in narrative feedback may reduce residents’ learning effect and the effect of learning transfer. Furthermore, the analysis results showed that most clinical preceptors were not aware that if they could provide relevant information of the “impact of treatment behavior,” which might alert and get residents prepared for the prognosis of cases so as to increase alertness and enable more comprehensive diagnosis and treatment.

Discussion

As for the content presented by the narrative feedback, there are many different definitions of feedback, but it usually refers to “Specific information about the comparison between a trainee’s observed performance and a standard, given with the intent to improve the trainee’s performance.”¹⁷ or “In the setting of clinical medical education, feedback refers to information describing students’ or house officers’ performance in a given activity that is intended to guide their future performance in that same or in a related activity.”¹⁸

In providing feedback, the necessary information of SBIA should be prepared in advance, that is, the information of circumstances or situations, actions or behavior performed, and impact on the surrounding people, as well as what is correct and incorrect.¹¹ Based on the analysis results and inference of this study, the following discussion is made.

The Current Narrative Feedback Provided by the Clinical Preceptors Has Begun to Follow the Principles of SBIA, but There Is Still Room for Improvement

Although through the promotion of CBME, EPAs, and Milestone, the clinical preceptors and residents have already developed initial understanding; however, there was no thorough and theoretically based planning and promotion in the beginning, and it was implemented only in an encouraging atmosphere with a brief explanation. The analysis data from this study showed that clinical preceptors’ writing of narrative feedback, important principles that should be in place, and contents presented were improved through exploration. Because of the lack of systematic thinking and establishment of the principles, the feedback provided was still at a stage of different styles and fluctuating quality of the contents, and the extent to which the quality of feedback contents could be improved was thus quite limited. The analysis results indicated that the contents of only a few pieces of feedback conformed to the SBIA model, although there were some conforming to the feedback-writing principle of SBIA.

In the process of providing feedback, the most important point is that residents should first understand the gaps that they should overcome existing in their behavior through correct and objective “information provided externally” and in turn learn to monitor their own behavior. Therefore, to improve residents’ “self-monitoring” ability, residents need to be urged to “review the current situation” so as to review their own behavior objectively to improve their self-monitoring ability.¹⁹

Therefore, in addition to the function of “providing information” and pointing out the correctness or deficiency in the behavior objectively, the narrative feedback also needs to prompt residents to “review the current situation” and understand the gap between reality and the “goals set” in order to actually “assist with modification” so as to obtain better effects.²⁰

In other words, the provision of improvement suggestions should be included in the clinical training, so that residents can understand the differences between their performance and the goals set to rectify their approaches and take improvement actions under guidance; clinical preceptors should also track their performance according to their progress and provide timely guidance and assistance in a timely manner.

Narrative Feedback May Be Provided in Line With the Principles of SBIA to Provide More Complete and More Constructive Teaching Feedback

The SBI model that is implemented properly can become an important bridge for developmental dialogue,¹⁴ and can provide effective guidance and training to both clinical preceptors and residents who give and receive feedback, respectively.

As for the content of narrative feedback, the positive words and deeds need to be identified and verified so as to achieve the effect of reinforcing the behavior.²¹ In the provision of the information of “situation,” “specificity” should be particularly emphasized. The situation of the specific single event described should be aligned with the content of the subsequent BIA, so that residents can understand it and take improved actions accordingly. On the front of the information of “behavior,” the focus is placed on the description of the medical treatment actions taken by residents, to provide clear factual information of behavior rather than criticism and judgment about it.

The information of “impact” can be presented in three aspects: the impact on the patient’s condition, the impact on others, and the impact on the emotions. When “action suggestions” are provided, the issues to be addressed should be clearly depicted, improvement goals should be set, and attention should be paid to the reasonableness and feasibility of the proposed steps to improve actions or work procedures. It is advised that the reasonableness of the improvement goals be examined using the SMART principles,^{22,23} namely S for specific, M for measurable, A for achievable, and R for result-oriented, and T for time-specific.

The points above are well in line with the argument of the SBIA model that discussion should be made on the basis of objective figures, so that the content will not become just an impression or a form, and the arguments in the content will be reliable. The content of narrative feedback should focus on the behavior to be improved or reinforced and provide specific information of actions to correspond to each other.

The Narrative Feedback Function of the EPAs-Based e-Portfolio System Also Possesses the Characteristics of Delayed Feedback

Generally speaking, when the time of the narrative feedback given by clinical preceptors is closer to the time of the occurrence of a case, the impression of

the situation, behavior, and impact of the case on residents will be deeper, which may lead to a higher sense of learning to guide learners’ thinking and medical decision-making capabilities,²⁴ so as to provide real-time feedback that has a positive effect on strengthening and improving behavior and enables more efficient implementation of the improvement suggestions. Feedback given as quickly as possible can help recall the details of a situation, and even experienced learners can benefit from simple and real-time inspection-based feedback that points out correct or incorrect treatment or behavior.²⁵ This also corresponds to most clinical preceptors and residents’ belief that the feedback given in the clinical environment is the most immediate and effective way of enhancing the learning effect.

However, there are some studies pointing out that for highly capable or senior learners who are performing complicated tasks, the interruption of the tasks being performed should be reduced, that is, the feedback should not be given at the time the clinical treatment is being carried out; instead, delayed feedback may bring more benefits,²⁶ and this happens to be suitable to the clinical emergency room as it is too busy and urgent to be possible for feedback to be provided immediately after each direct observation; thus, the written records can also achieve the benefit of delayed feedback.

The clinical preceptors in this study would give residents as much immediate feedback as possible in the workplace and would also provide written records and supplementary feedback on the EPAs-based e-portfolio system, which could also make up for the inability to give immediate feedback under some clinical circumstances. The past studies have also shown that delayed feedback could bring considerable benefits as well.^{26,27}

The Evaluation Results Are More Comprehensive, Clearer, and Closer to the Real Situation Through Multiple Times of Feedback and Diverse Sources of Information

If more narrative feedback includes the principles of SBIA, there may be more objective perspectives provided to examine residents’ performance in treating patients clinically, and the narrative feedback under the SBIA framework can help residents reflect in more specific directions and guides them to a deeper learning process and discussion. The effect

is equivalent to expanding the triangulation in the research field, thereby avoiding the bias of information. In other words, with multiple direct observations and written records by multiple clinical preceptors, sufficient objective information will be collected, which will be more likely to keep abreast of the situation of the medical treatment and behavior by residents in various cases. In addition, with the increasing frequency of narrative feedback in improved quality, there is any deviation from the right track.

Clinical Preceptors Are Motivated to Keep Records by a Reward System and Systematic Training to Increase the Frequency and Quality of Feedback

CBME particularly emphasizes clinical preceptors' feedback and residents' empirical learning and reflection, which can be called the two major pillars of CBME²⁸ and also makes it very different from other traditional time-oriented training models. Clinical preceptors should be motivated to increase the frequency of providing real-time feedback, and narrative feedback can also enable preceptors to pay attention to the key points of the feedback and methods of providing them, thereby improving the quality of preceptors' clinical feedback. If a reward system that can increase motivation is launched, promotion and consensus building are enhanced, and discussion and sharing are promoted, their willingness and actions will be improved; thus increasing the number of pieces and the quality of feedback in line with the SBIA model and enabling systematic implementation of CBME and EPAs.

Conclusions

As the frequency of the feedback provided by clinical preceptors has increased, the content has become more specific and effective. Introducing the SBIA model into the narrative feedback records helps to transform the content of feedback to a complete and structured message.

With the development of the EPAs-based e-portfolio system, data and information have been digitized and moved onto the cloud, the verbal feedback that could not be kept in the past can be collected and stored. It keeps records day by day and year by year, enabling clinical teachers and residents to understand the detailed evaluation content and narrative feedback

more easily, as a complete basis for learning and improving clinical capabilities.

Conflicts of Interest Statement

The corresponding author had obtained all data and materials in the research process without any conflict of interest, and is solely responsible for the submission of this article.

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