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The Status of Providing Feedback in Clinical Education from the Perspective of Medical Students in Pediatric Department of Bushehr University of Medical Services, Bushehr, Iran

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Abstract

Background: Clinical education is the foundation of medical science education and one of the most important criteria of professional education, which plays an important role in consolidating students' learned materials. The aim of the present study was to evaluate the views of general medical students on the provision of feedback in clinical education in the pediatric department.

Materials and Methods: The present cross-sectional study was performed in the Pediatric Department of Shohadaye- Khalije-Fars Educational Hospital of Bushehr University of Medical Sciences in 2019. Conesus sampling was used to select 58 general medical students spending their internship and apprenticeship in the Pediatric department. Data collection was carried out using baseline characteristics and the standard 21-item feedback questionnaire. Medical students were asked to indicate the importance of the feedback they received during their clinical education in the pediatric department on four-point Likert scale. Data were analyzed using SPSS software version 16.0.

Results: 58 general medical students of Bushehr University of Medical Sciences participated in the present study. Twenty-eight (48.2%) of the general medical students were interns, 30 (51.8%) were apprentices, and 35 were female participants (n=60%). Most of the students believed that feedback was as expected (50.1 7%), clear (43.1%), fair (36.2%), and useful in correcting their attitude (44.8%), performance (46.6%), and behavior (39.7%). Majority of the participants received positive feedback (65.5%). Apart from propositions items 20, 10, 8, and 4, majority of medical students have selected "Often" as an option to answer the remaining statements.

Conclusion

More than half of the general medical students were satisfied with the feedback they received during their clinical education in Pediatric department.

Key Words: Feedback, Clinical Training, Medical Students, Pediatric Department.

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1- INTRODUCTION

Clinical education is a dynamic process in which students gradually gain valuable experiences by attending the patient's bedside and applying the learned concepts in practice while interacting with the educators and the environment. Clinical education, in fact, provides an opportunity for the student to convert theoretical knowledge into the various mental and motor skills needed for patient care (1). In addition, it is in the clinical setting where learned theoretical materials are analyzed and transformed into reality (2). On the other hand, learning in the clinical setting is accompanied by challenges that do not exist in the classroom (3, 4). Therefore, there is a network of different factors and forces involved in the clinical setting that can affect the clinical learning (5). Considering the unpredictable and stressful nature of clinical setting, clinical education is considered more sensitive and important than theoretical education (6).

The importance of feedback becomes more pronounced as the medical education paradigm shifts to competency–based education where learners are expected to reach a specific milestone that enables them to act as practitioners in their work environment (7). After receiving feedback, the student understands his/her educational status, reduces her/his learning errors and mistakes, and performs his/her tasks more precisely (8), and improves his/her cooperation in the ward activity (9). Feedback is effective in deepening the learning processes, increasing motivation, self-confidence, and ability to apply learned materials (10), and also plays an important role in facilitating the development of students as independent learners, i.e. those who are capable of monitoring and evaluating their learning in the professional practice, even after graduation (7).

On the other hand, previous studies have proved the necessity of providing feedback in order to create effective learning and there are various studies demonstrating that frequent feedback facilitates learning clinical education. For example, Stillman et al. found that students who received feedback on their clinical skills perform significantly better than students who did not receive such feedback (11). Wigton et al. in a study on the effect of feedback on learning the clinical diagnostic skills found that students who received feedback on their diagnostic skills modify these skills more rapidly than students who did not receive feedback (12). Glover (2000) also showed that feedback can enhance quality of students' practice and create a sense of self-confidence and competence in their role, especially if the feedback is provided in a timely manner (13). Hill (2007) also stated that feedback plays an important role in improving the learning process (14). In Iran, some studies indicate that professors do not provide appropriate, adequate, and planned feedback (15, 16).

Previous studies also showed that inappropriate provision of feedback would cause more serious consequences than absence of such feedback (17). Burr et al. argue that although medical students seek accurate feedback, many do not effectively use the feedback received (18). In addition, most professors are familiar with the principles of providing feedback and believe that if they provide effective feedback to their students, students will complain of lack of feedback in clinical education (16, 19–36). In their study, Liberman et al. concluded that although 90% of surgical professors reported they successfully provide feedback to the students, only 17% of residents agreed with this claim (37). In another study, all educators reported that they have provided functional feedback to their learners; however, 76% of learners confirm such claim (16). On the other hand, 46% of

medical students and 33% of studied residents generally agreed that feedback was useful, all of these indicate a failure in the feedback process (38). Although feedback has been recognized as an integral part of the educational process and has been emphasized in medical education for decades (39), few effective measures have been taken to empower professors (40), and to determine whether feedback recipients (learners) receive and use feedback (39). The world today is a world of competition and the struggle for a better life necessitates the promotion of quality to increase the level of knowledge, especially improving the quality of clinical practice. There are many studies today on clinical settings and associated problems, but there are no extensive studies, teaching methods, and their components, including feedback in these settings (41).

Therefore, considering the need to provide feedback and clinical education, and provide the least error-prone therapeutic services and care; the limitation in the use of experiences of other educational communities due to the complexity of educational network from one community to another; the necessity of needs assessment prior to any curriculum for professors and learners, and finally, lack of previous relevant studies; this study conducted to evaluate the status of providing feedback to learners in clinical education from the viewpoints of general medical students working in the Pediatric department of Bushehr University of Medical Sciences, Bushehr, Iran.

2- MATERIALS AND METHODS

2-1. Method

This cross-sectional study was carried out in the Pediatric Department of Shohadaye- Khalije-Fars Educational Hospital of Bushehr University of Medical Sciences, Bushehr, Iran. The Pediatric Department counsel approved the study methodology, and the researchers were committed to the principle of confidentiality during the course of the study.

2-2. Statistical population

After consulting with a statistical advisor, 58 general medical students were selected using simple random sampling method considering 5% error rate, and 90% confidence interval. All general medical students who were spending their internship and apprenticeship in the Pediatric Department of Shohadaye-Khalije-Fars Hospital for a specified period were eligible to enter the study. Exclusion criteria included unwillingness to participate in the study and incomplete questionnaires.

2-3. Data Collection

To obtain information on the manner of receiving feedback, standard 21-item feedback questionnaire was used (42). The general medical students were asked to rate the importance of the feedback they received during their clinical education based on four-point Likert scale that included options ranging from Always (score=4), Often (score=3), Sometimes (score=2), and Rarely (score=1). The questions assessed the following aspects of the feedback: being constructive, being fair, being relevant, and being related to the future profession, being helpful in correcting attitudes, behaviors, and performance, being clear, and so on. The questionnaires were distributed among medical students by the first researcher after providing the necessary explanations to them, and then they were collected on the next day.

2-4. Ethics

Participants' personal information was extracted as a whole and it was not compulsory to write name and surname. The researcher only enrolled general medical students who were completing the clinical education course. There the

researcher did not interfere with the participants' job during the data collection process. The study results were made available upon request.

2-5. Reliability and Validity

The validity of this questionnaire was confirmed by content validity method through consultation with experts (two faculty members of medical and hygiene education and two pediatric faculty members). Cronbach's alpha coefficient of 87% was calculated to determine reliability, which indicates appropriate internal consistency of the questionnaire questions (42).

2-6. Statistical Analysis

Data analysis was performed using SPSS software version 21.0. Descriptive analysis (frequency and percentage indices) was performed to describe the studied variables. Chi-square test was also used to compare the frequency of responses to different questions. P-value< 0.05 was considered as significance level. Kolmogorov–Smirnov test was used to determine the normality of data distribution.

3- RESULTS

Fifty-eight general medical students of Bushehr University of Medical Sciences participated in the present study. Twenty-eight (48.2%) general medical students were spending internships, 30 (51.8%) were doing their apprenticeship, and 35 participants were female (60%). 44.8% of students (n= 26) believed that feedback was useful as a whole. Also, 43.1% of students (n= 25) believed that feedback was often related to their future profession. Majority of the students believed that feedback was often as expected (51 .7%), clear (43.1%), fair (36.2%), and useful in correcting their attitudes (44.8%), practice (46.6%), and behavior (39.7%).

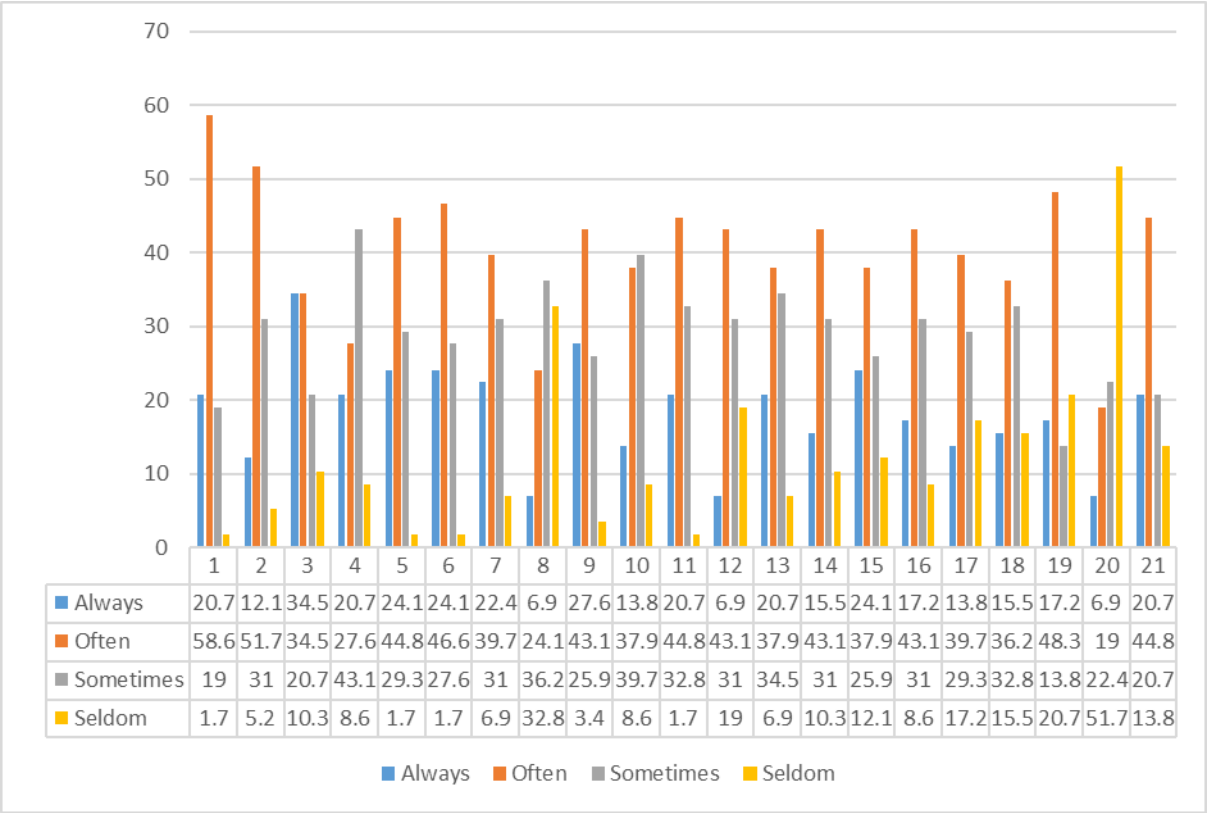
Feedback was also sometimes related to a specific topic (39.7%) or one or two topics (31%) and was aimed at modifying their behavior (34.5%). Most general medical students believed that feedback was explicit, clear (43.1%), and related to their future profession (43.1%). In addition, feedback was often related to clinical skills (44.8%), and they often received positive feedback (48.3%) (**Table.1**). Apart from propositions items 4, 8, 10, and 20, majority of medical students have chosen the "Often" option to respond to the remaining statements (**Table.1 and Figure.1**). The results of the present study showed no significant relationship between gender and educational level and comments about status of received feedback.

Table-1: Distribution of the general medical students ranking on feedback.

N	My Feedback	General Medical Student (%)			
		Always	Often	Sometimes	Seldom
1	was constructive	20.7	58.6	19	1.7
2	was as expected	12.1	51.7	31	5.2
3	worked as a motivation for education	34.5	34.5	20.7	10.3
4	emphasized postgraduate skills	20.7	27.6	43.1	8.6
5	corrected my thinking	24.1	44.8	29.3	1.7
6	corrected my performance	24.1	46.6	27.6	1.7
7	corrected my behavior	22.4	39.7	31	6.9
8	made me feel ashamed	6.9	24.1	36.2	32.8
9	was applicable to future work	27.6	43.1	25.9	3.4
10	was specific to one subject	13.8	37.9	39.7	8.6
11	was more concerned with clinical skills	20.7	44.8	32.8	1.7
12	was limited to one or two items only	6.9	43.1	31	19

13	was to correct behavior	20.7	37.9	34.5	6.9
14	was concerned with the time & place	15.5	43.1	31	10.3
15	encouraged me to assess myself	24.1	37.9	25.9	12.1
16	was clear	17.2	43.1	31	8.6
17	considered security	13.8	39.7	29.3	17.2
18	considered justice	15.5	36.2	32.8	15.5
19	was positive	17.2	48.3	13.8	20.7
20	was negative	6.9	19	22.4	51.7
21	was overall useful	20.7	44.8	20.7	13.8

N= number of item.



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Always	20.7	12.1	34.5	20.7	24.1	24.1	22.4	6.9	27.6	13.8	20.7	6.9	20.7	15.5	24.1	17.2	13.8	15.5	17.2	6.9	20.7
Often	58.6	51.7	34.5	27.6	44.8	46.6	39.7	24.1	43.1	37.9	44.8	43.1	37.9	43.1	37.9	43.1	39.7	36.2	48.3	19	44.8
Sometimes	19	31	20.7	43.1	29.3	27.6	31	36.2	25.9	39.7	32.8	31	34.5	31	25.9	31	29.3	32.8	13.8	22.4	20.7
Seldom	1.7	5.2	10.3	8.6	1.7	1.7	6.9	32.8	3.4	8.6	1.7	19	6.9	10.3	12.1	8.6	17.2	15.5	20.7	51.7	13.8

Fig.1: Frequency distribution of general medical students' responses to feedback (in percentage).

4- DISCUSSION

The aim of the present research was to evaluate the status of feedback provided to learners in clinical education from the viewpoint of general medical students of Bushehr University of Medical Sciences. The results showed that 66.5% of medical students believed that they receive appropriate feedback in the clinical education. In the clinical education, feedback refers to the specific information about the practice of the student and comparison of such practice with the standard provided to help students progress (43-46). Feedback is an important component ensuring the learners' development, and clinical educators and professors should be trained on the importance of providing appropriate feedback and have access to appropriate tools to practice it effectively (47). Appropriate feedback should focus on direct observation and be presented in an impartial and unbiased manner. It is better to focus on the positive aspects of the job,

and attempts should be made to describe the job rather than evaluating the job process. Feedback in clinical education should also be aimed at confirming or reinforcing learners' behavior, correcting behavior, and improving one's performance in the future (30, 31). Fowler and Robertson showed that providing constructive feedback using a mobile web-based application (VSTAR) has increased the learners' satisfaction with clinical education and led to better attainment of learning goals (48). Boehler et al. (2005) also found that functional feedback focused on learners' behavior improves their performance and satisfaction (22).

Burr et al., (2013) have also shown that providing individual feedback promotes learning, and helps achieve learning goals. In addition, the result of this study showed that providing feedback can turn learners' weaknesses into strengths (18). Therefore, providing feedback, regardless of its type, is a critical element in the clinical education process and enhances learners' level of satisfaction (39). Results of the present study are inconsistent with other relevant studies showing that results of feedback are not yet optimal (32– 34).

Moaddab et al. referred to inappropriate feedback provided to general medical residents and the students in their study (38). The present study showed that general medical students had optimal satisfaction with feedback. Ende believes that without feedback, errors will not be corrected, reinforced, and clinical competencies will either be required empirically or not learned at all (41). Molloy (33) and Boud (49) stated in their research that learners do not receive useful feedback during the clinical education. Tayebi et al. stated that most students and educators found it necessary to provide feedback and tended to receive and provide more feedback (16). The results of the present study are not consistent with results of Anderson (47), Milwrick and Nair (32), Molloy (33), Boud (49), and Tayebi et al. According to these studies, the status of feedback provided to learners was assessed as non-optimal. The results of present study also showed that medical students of Bushehr University of Medical Sciences were satisfied with the feedback they received during their clinical education, which may indicate an effective clinical education setting in the hospital and enthusiastic professors. On the other hand, developing and creating clinical competencies in the students of health professions is the main goal of education, and it is necessary to provide meaningful and constructive feedback to obtain informative information.

Therefore, feedback is an essential aspect of learning and education to the extent that feedback is important for learning as blood is for life (9). Numerous studies and articles have proved that feedback is a factor that improves performance if it is provided properly and based on appropriate information (9). Therefore, in addition to emphasizing the importance of providing feedback, it is also important to teach the correct principles of providing feedback to medical science professors and educators, because inappropriate provision of feedback will be associated with more serious consequences than the absence of feedback. In a study, although 90% of professors reported that they have provided feedback successfully, only 17% of students agreed with this claim (50).

Some studies have stated that feedback will only be effective and constructive when it is presented in a positive way (51). However, others have suggested that feedback should be balanced in terms of positive and negative sentences (53, 54). Most studies have shown that the feedback that points to the fact that the feedback that frequently focuses on weaknesses rather than strengths would not be an effective feedback (51, 54). Brinko also stated that feedback should be provided as soon as

possible (55). In addition, it should be borne in mind that feedback should be provided when learners have the opportunity to change or modify their behavior, because the main purpose of feedback is to provide learners with the opportunity to modify their behavior and improve their learning process. If the feedback is provided when there is no opportunity for the learner to modify his/her behavior and chance of improvement in the learning path, the corrective goal, which is one of the most important features of the feedback, is ignored (52). Overall, feedback should be planned and the educators should think about manner of provision and its principles and characteristics in advance (56). Feedback recipients should also have the opportunity to respond to the feedback and be involved in the feedback provision process (52).

4-1. Study Limitations

The most important limitation of the present study was the use of close-format self-reporting method for data collection. In this method, individuals can evaluate themselves and others much better or worse than they really are. On the other hand, the limited options deny the individuals the opportunity to choose other responses and they are thus limited to choose the response that may not be intended by them and may not have additional explanation for it. The present study was carried out in the Pediatric Department of Shohadaye-Khalije-Fars Educational Hospital of Bushehr University of Medical Sciences and caution must be exercised while generalizing the results to other medical students.

5- CONCLUSION

Assessment along with feedback provision should be considered as a part of teaching-learning process, as it aims to improve and modify the education process and should not be used solely to determine the success of learners' academic achievement. The results of the present study show the optimal status of feedback provided in clinical education, particularly among the medical students. Considering the importance of feedback in the medical education and the role that feedback plays in the learning clinical skills, most medical students were satisfied with the feedback they received during the clinical setting. Feedback facilitates clinical education and should be considered as an important factor in the creation and strengthening of reflection, which is one of the essential principles of clinical education. The feedback should provide a clear understanding of what learners should do; to achieve such a clear understanding, learners need to be carefully identified because some learners may easily achieve learning goals, while others need more work and activity to achieve such goals depending on their personality and abilities.

6- CONFLICT OF INTEREST: None.

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