Advances in Medical Education and Practice

Dovepress
Taylor & Francis Group

Open Access Full Text Article

ORIGINAL RESEARCH

A Multi-Institutional Study Regarding the Perceptions of Students and Faculty Members About Constructive Feedback for Medical Students in Medical Education

Reshma Fatteh[1], Ye Phyo Aung[2], Murtajiz Mehdi Raza[1], Tun Tun Naing[2], Zaw Phyo[2], Sateesh B Arja[1]

[1]Avalon University School of Medicine, Willemstad, Curacao; [2]Defence Services Medical Academy, Yangon, Myanmar

Correspondence: Reshma Fatteh, Mind, Brain and Behavior Department, Avalon University School of Medicine, Willemstad, Curacao, Tel +5999 7241181, Email reshma.fatteh@avalonu.org

Background: Feedback is defined as the regular mechanism where the effect of an action is to modify and improve the future action. Feedback is essential for developing students' competencies and their future work as professionals. The attention of feedback shifted from teachers' feedback techniques to learners' goals, acceptance, and assimilation of feedback and impact-focused approaches. This study explored the perceptions of medical students and faculty regarding the importance of constructive feedback and the process of feedback in medical education.

Methods: An explanatory, sequential, mixed-method approach was used, beginning with a survey followed by interviews. This study was conducted at Defense Services Medical Academy (DSMA), Myanmar, and Avalon University School of Medicine (AUSOM), Willemstad, Curacao, from November 2021 to October 2022. For the quantitative phase, 75 students of Phase I, M.B.B.S. program, 28 faculty from DSMA. 63 students of the M.D. program, and 13 faculty from AUSOM responded to the questionnaire survey. For the qualitative phase, ten students and ten faculty members from each university used in-depth interviews. We used MAXQDA software for thematic analysis.

Findings: Survey results showed that most faculty and students strongly agree that feedback is essential for students' learning and should highlight both strengths and weaknesses of student performance. Thematic analysis resulted in five themes: opinions regarding the feedback, obstacles in obtaining constructive feedback, incorporating constructive feedback to future professions, implementing feedback, and comparing the views of students and professors. The students wanted immediate feedback after the examinations. They preferred one-to-one feedback instead of group feedback, but the faculty was concerned about time limitations in providing constructive one-to-one feedback.

Conclusion: The students and faculty agree that constructive feedback is essential to improve performance. The students at both institutes preferred precise comments regarding performance. The barrier both faculty and students faced around giving and receiving feedback was time.

Keywords: feedback, student support, assessments, formative assessment, constructive feedback

Introduction

Training competent and compassionate healthcare professionals is crucial in the dynamic field of medical education. Constructive feedback is crucial to medical education because it helps medical students improve their clinical abilities, analytical skills, and progression.[1] With careful and helpful feedback, medical students can gain valuable insights into their fields of expertise and progress. The feedback loop assists students in recognizing and filling in any gaps in their knowledge through introspection.

In the face of the ever-changing healthcare professionals learning environment and the high expectations placed on medical professionals, it is necessary to examine whether constructive feedback is effective. It is essential to grasp the

Received: 16 August 2024
Accepted: 28 December 2024
Published: 31 December 2024

subtleties and significance of constructive feedback for raising education and improving patient care. Feedback is a systematic procedure of commenting on results generated by an action to make suitable adjustments for future actions.[2] Feedback is critical in shaping healthcare professionals, including medical students, and promotes self-directed and self-regulated learning. Through feedback, students can accurately monitor their progress and adjust appropriately to meet professional and personal goals.[3] Dolmas[4] stated that receiving feedback is important for developing students' clinical skills and preparing them to assume their future roles as professionals. Archer's[5] study emphasized that feedback aids professional, technical, and cognitive growth.

Feedback is an essential component of teaching that helps and encourages students' abilities and behaviors.[6] The primary concern warrants investigation is how feedback and evaluation impact students' engagement in learning and academic achievements.[7] Historically, feedback in medical education has ignored the importance of students participating in the discussion to concentrate primarily on how well teachers can deliver feedback to students.[8] According to Chowdhury and Kalu,[9] students could obtain insightful feedback if they established a comprehensive awareness of the activities and outcomes they had previously taken. Providing feedback to students is an essential part of their educational process. It has been noted that giving learners constructive feedback can improve their educational experience. Consequently, it is important to recognize the importance of the teacher's role in this process.[10] The feedback should consist of a minimum assessment of performance or knowledge, additional information to improve knowledge or performance, alternative strategies, corrective information, clarification, encouragement, and support. Feedback inspired by Pendleton, as outlined in the book "The Consultation: An Approach to Learning and Teaching" by Pendleton and his group, is highly educational. This approach, characterized by its comprehensiveness, dialogue-based nature, learner-centered focus, and ease of replication, holds substantial value in the field. At its core, this feedback style emphasizes initiating and centering discussions around the learner's input.

The main step in the feedback process for students is to critically observe their performance to improve their learning outcomes and educational performance.[11,12] Giving students constructive feedback can improve learning activities and the school teaching process.[13] Hamid and Mahmood's[13] study emphasized the significance of implementing a positive or constructive feedback system for medical students.[13] Providing feedback to students offers genuine understanding to learners, ultimately fostering introspection and motivating them by questioning their values and ideas to enhance their professional and personal self-esteem.[13]

It has been shown that feedback might help enhance students' behaviors. Faulconer, Griffith, and Gruss[14] found that High-quality evaluation significantly contributed to students' performance in their academic pursuits.[14] The study findings indicated no correlation between positive feedback and the students' perceptions and self-reported behaviors in the course being studied. It was also documented that students who got positive feedback and feedback on their performance gap improved their grades more than those who only received feedback on their performance gap. Cutumisu & Schwartz[15] found that positive feedback significantly impacts the memory and performance of college students. The study findings indicate a favorable correlation between students' performance and positive and critical feedback. In contrast, only critical feedback negatively correlates with learning.[15]

Although feedback is typically thought of as helpful for learning, it fell short of expectations in the medical field.[16] There was a previous assumption that enhancing teachers' ability to provide feedback would result in learners modifying their behavior and enhancing their performance. According to reports, faculty feedback has been described as imprecise and ineffective in inducing behavioral change.[17] Recent studies have indicated that learners may have different opinions than teachers regarding what constitutes effective feedback. Additionally, teachers often need more awareness of when and why learners disregard feedback.[18,19] Consequently, the focus of feedback switched from teachers' feedback strategies to learners' objectives, receptiveness, and integration of feedback, as well as impact-oriented approaches.[20] The influence of feedback on learner behavior could be strengthened by enhancing teachers' abilities to create a positive learning environment, build rapport with learners, provide goal-oriented feedback, and develop action plans for performance enhancement.[21] Although feedback plays a crucial role in medical education, the underlying mechanisms of this process still need to be better understood. Both medical educators and students frequently highlight the need for improvements in the feedback process. This is partly due to the complex factors affecting how students receive, interpret, and utilize feedback. While significant attention has been given to feedback delivery in higher education, previous

research in medical education has only partially addressed this topic. This study focuses on gathering the perceptions of students and faculty members regarding what constitutes effective feedback. This study examined the perceptions of faculty and students on constructive feedback for medical students who are the next generation of healthcare workers. Gathering perceptions of students and faculty members regarding constructive feedback in medical education is crucial for enhancing the learning environment and improving educational outcomes. When perceived as constructive, feedback helps foster self-reflection, enhances skill development, and promotes a growth mindset. Additionally, by incorporating student and faculty perceptions, educational institutions can improve teaching methods, refine curricula, and ensure that feedback processes are supportive, ultimately contributing to better patient care outcomes. This study investigated the perceptions of students and faculty on the significance of constructive feedback and the feedback process in medical education at two different medical schools.

Research Questions

1. What are the perceptions of faculty and students of the feedback?
2. What are the barriers to achieving constructive feedback?
3. How do faculty and students perceive the usefulness of the feedback for motivating and improving students' performance in medical education?

Research Methodology

Study Design

This study used a mixed-method approach, namely an explanatory sequential design involving quantitative and qualitative methods. A mixed-method approach was employed to understand the perceptions of faculty and students of feedback and the effectiveness of constructive feedback on medical students. Please refer to Figure 1 for research methodology. Following the Explanatory Sequential Design, as outlined by,[22] the study seamlessly combined quantitative and qualitative methodologies. This study was conducted at two distinct institutions: Defense Services Medical Academy (DSMA) in Yangon, Myanmar, and Avalon University School of Medicine (AUSOM) in Willemstad, Curaçao, Netherlands Antilles. Please refer to Figure 1 for the research methodology steps.

Study Setting

DSMA offers a Bachelor of Medicine and Bachelor of Surgery (MBBS) as a six-year undergraduate program in Myanmar. AUSOM offers a four-year Medical Doctorate (M.D.) program, which includes the initial two years on the Caribbean Island of Curacao. Specifically, the study participants are four-semester medical students in the basic science program.

Study Period

The research, spanning from November 2021 to October 2022, meticulously captured the academic year, providing a comprehensive understanding of the impact of constructive feedback over time. Table 1 provides a concise overview of the study, including the study locations, duration, participant details, data collection methods, and the analysis tool used.

Study Population

For the quantitative phase, the study encompassed all students and faculty from Phase I of the MBBS program at DSMA and all four-semester medical students pursuing the Doctor of Medicine (M.D.) program at AUSOM. In the qualitative phase, ten students and ten faculty members from each institution participated, providing in-depth insights into the subjective experiences of feedback. After conducting these interviews, no new information emerged.

Participant Selection

Participants were invited to enroll, and their voluntary participation was underscored, emphasizing their right to withdraw at any point if they felt uncomfortable Written informed consent, a cornerstone of ethical research, was obtained from all

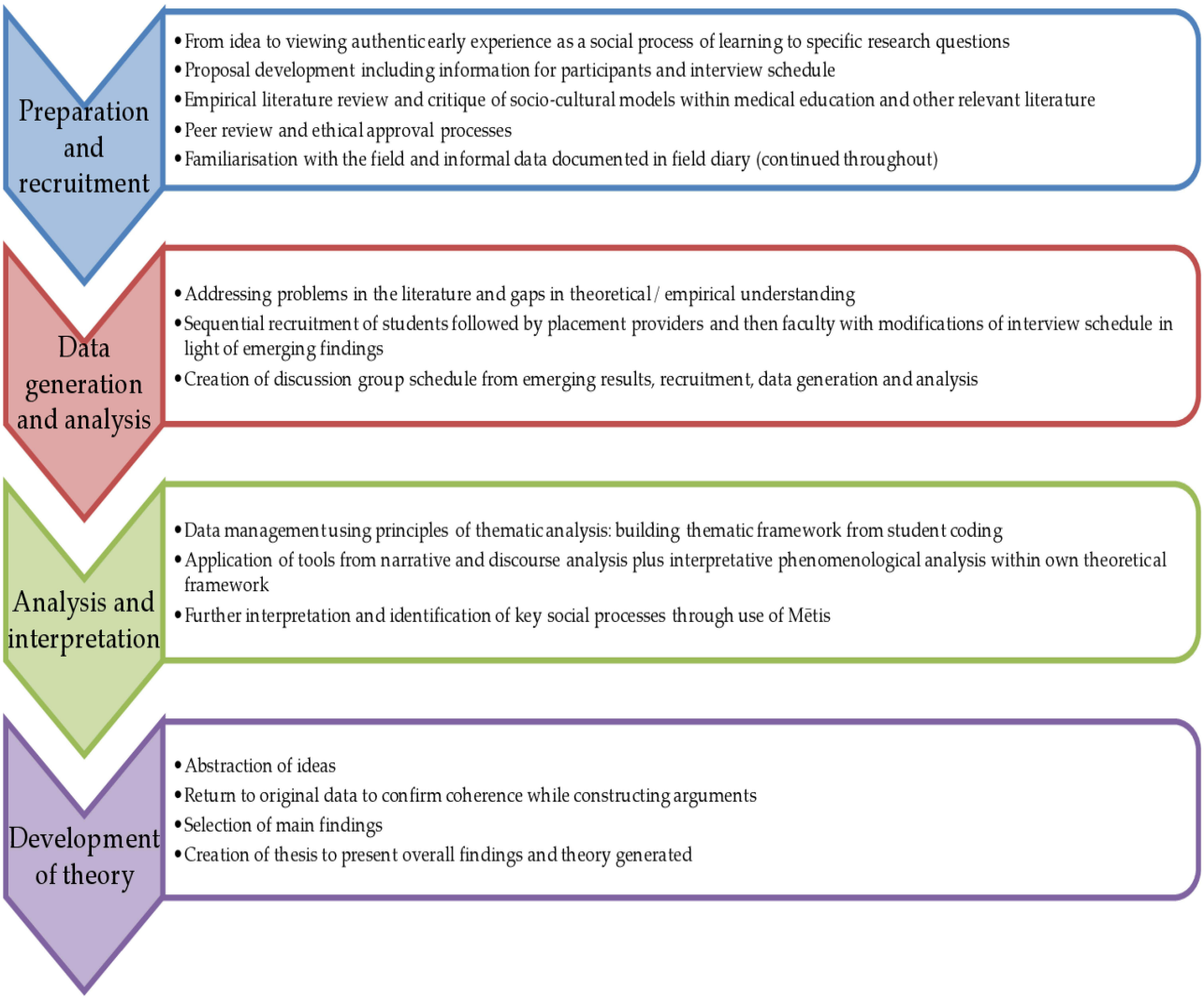

Figure 1 Methodology.

participants. Participants informed consent included publication of anonymized responses/direct quotes. Approval from the Ethical Review Committees of both universities ensured the study's ethical integrity.

Research Procedure

Quantitative Phase

All students from Year 1 and Year 2, faculty from those years at DSMA and all four-semester medical students in the M. D. program at Avalon University were recruited. Consent was secured, and survey questionnaires (Please refer to the

Table 1 Study Overview

Location	Duration	Participants	Data Collection Methods	Analysis Tool
Defence Services Medical Academy (DSMA), Myanmar	November 2021 to October 2022	– 75 students (Phase I, M.B.B.S program) - 28 faculty	- Quantitative Phase: Questionnaire - Qualitative Phase: In-depth Interviews (IDI)	MAXQDA software
Avalon University School of Medicine, Willemstad, Curacao	November 2021 to October 2022	– 63 students (MD program) - 13 faculty	- Quantitative Phase: Questionnaire - Qualitative Phase: In-depth Interviews (IDI)	MAXQDA software

Appendix 1) were distributed online at Avalon University and in paper form at DSMA. The questionnaire was adapted from the AlHaqwi study.[1] Seventy-five students of M.B.B.S. program, 28 faculty from DSMA., 64 students of the M. D. program, and 13 faculty from AUSOM responded to the questionnaire and filled out the survey.

Qualitative Phase

Following the quantitative phase, Individual In-depth Interviews (IDIs) were conducted with selected participants to delve deeper into their experiences and perspectives. We employed a purposive sampling method. Ten students and ten faculty members from each institution who volunteered to continue participating were selected. The investigators employed semi-structured interviews as participants were allowed to express their perceptions and experiences even though a set of questionnaires (Please refer to the Appendix 2) was used in conducting the interview.

Interviews were conducted in Myanmar for DSMA and in English for Avalon University, lasting an average of 20–30 minutes. The interviews were audio recorded, and the interviews were conducted in person. After completing twenty interviews from each institute, it was evident that the data met the required quantity and quality standards. This was supported by the absence of further information gained in subsequent interviews.[23]

Ethical Considerations

Each participant signed informed consent to ensure that the study complied with the highest ethical standards, and ethical approval was requested from the "Ethical Review Committees of both DSMA and AUSOM".

Data Handling and Storage

Information about participants at DSMA was stored on the Medical Education and Training Department's computer system, which was only accessed by the lead investigator with a secure ID and password. Similarly, data was kept on the IT department's central computer at AUSOM, and their IDs and passwords limited researchers' access.

Statistical Analysis

The statistical analysis in the study made considerable use of descriptive statistics for the quantitative part and thematic analysis for the qualitative. This approach allowed the investigation of any possible relationship between medical students' academic achievements and constructive feedback.

Thematic Analysis of Data from the IDI

Through theme analysis of the Individual In-Depth Interview (IDI), we could analyze in depth what was on participants' minds, and they also talked about feedback from different angles. Thematic analysis is a qualitative research method used to identify, analyze, and interpret patterns or themes within textual or qualitative data. It involves a systematic approach to understanding the content and meaning of the data to gain insights and develop a comprehensive understanding of the research topic.[24] Thematic analysis was done by MAXQDA software.

Results

Descriptive Analysis for Quantitative Data

As represented in Tables 2 and 3, both teachers and students gave their agreement scores on perceptions of feedback. They gave their views on three categories: The importance of feedback, the content of the feedback and the feedback process.

When looking at each score in every question, it was found that most of their response scores were above 4.0. The most apparent and lowest scores were found in the item "It should address only the strengths of students' performance, and It should address the weakness of students' performance". Both scores were 2.68 and 3.05 in the students' view and 2.82 and 3.15 in the view in the teachers' view, respectively.

Moreover, the respondents were not satisfied with "the feedback process". It was proved by their lower evaluation scores of 2.29 and 3.15 on "Feedback should be given in groups" in both respondents. The item/question "Feedback

Table 2 Teacher's Perception on Feedback

No.	Questions	DSMA	AUSOM
Teachers' views about the importance of feedback.			
1.	Feedback is essential for students' learning.	4.61	4.92
2.	I should give feedback regularly.	4.39	4.85
3.	I am required to give feedback on Institutional Policy.	4.11	4.77
4.	All formative assessments are followed by feedback	4.39	4.77
5.	All summative assessments should be followed by feedback.	4.14	4.69
6.	Feedback should be given immediately after assessments.	4.11	4.77
7.	Feedback should be provided within the stated time frame providing a rationale.	3.89	4.62
8.	Feedback will help the students to improve their results.	4.39	4.92
Teachers' views on the content of the feedback			
9.	It should address only the strengths of students' performance.	2.82	3.15
10.	It should address only the weakness of students' performance.	2.64	3.23
11.	It should give both strengths and weaknesses of student's performance.	4.11	4.92
12.	It should guide how to improve students' future performance.	4.29	4.85
13.	Feedback shows students' strengths and weaknesses in the course.	4.11	4.77
Teacher's views on the process of the feedback.			
14.	Feedback should be given one-on-one.	3.39	4.77
15.	Feedback should be given in groups.	3.93	3.15
16.	Feedback should be given both one-on-one and in groups.	3.68	3.38
17.	I prefer written feedback	3.14	3.31

Table 3 Student's Perception on Feedback

No.	Questions	AUSOM	DSMA
Students' views about the importance of feedback.			
1.	Feedback is essential for my learning.	4.68	4.36
2.	I need feedback regularly.	4.41	3.97
3.	Feedback is provided regularly.	4.34	3.93
4.	All formative assessments should be followed by feedback.	4.35	4.05
5.	All summative assessments should be followed by feedback.	4.51	4.01
6.	Feedback should be given immediately after my assessment.	4.44	4.03
7.	Feedback should be provided within the stated time frame providing with rationale.	4.60	3.84
8.	Feedback will help me to improve my results.	4.75	4.12

(*Continued*)

Table 3 (Continued).

No.	Questions	AUSOM	DSMA
Student's views on the content of the feedback			
9.	It should address only the strengths of students' performance.	2.68	3.05
10.	It should address only the weaknesses of students' performance.	3.02	2.67
11.	It should give both strengths and weaknesses of student's performance	4.79	4.11
12.	It should guide how to improve students' future performance.	4.65	4.07
13.	Feedback shows students' strengths and weaknesses in the course.	4.62	3.97
Student's views on the process of the feedback.			
14.	Feedback should be given one-on-one.	4.47	3.43
15.	Feedback should be given in groups.	2.29	3.56
16.	Feedback should be given both one-on-one and in groups.	3.03	3.87
17.	I prefer written feedback.	2.92	3.68

should be given both one-on-one and in groups", they responded with scores of 3.03 and 3.83, and regarding the item "I prefer written feedback", the lower response scores were 2.92 and 3.14, respectively.

Qualitative results

Thematic analysis yielded five themes: opinions regarding the feedback, obstacles in obtaining constructive feedback, incorporating constructive feedback to future professions, implementing feedback, and comparison of the views of students and professors.

Theme 1 Opinions Regarding the Feedback

The interviews shed light on the many different points of view on feedback. This means that both students and teachers believe feedback helps raise academic achievement levels. The participants felt that feedback is pivotal in achieving progress and continuous improvement.

> Feedback meant that how they answered right or wrong and what is needed to improve, and give them the corrected answer to get them on the right track when the students perform in exam. (Teacher 2)

> Feedback is the criticism that helps to improve my performance, but it should not be blaming and reflected my current situation. (Student – 2)

Qualitative analysis indicated that one of the feedback tactics used in advantageous surroundings was to examine skills and personal styles. Reinforcing feedback entailed highlighting specific skills such as leading group discussions, giving feedback, setting up role plays, and handling challenging circumstances. Positive reinforcement also addressed personal styles, including being reserved, aggressive when speaking, non-threatening, adaptable, and helpful.

Theme 2 Obstacles in Obtaining Constructive Feedback

The participants unanimously understood the significance of providing feedback; nonetheless, the thematic analysis revealed a significant obstacle to time constraints. The teaching staff and the student body have raised concerns concerning the time restrictions on delivering and receiving feedback. The challenges with Feedback were identified as mentioned in Table 4.

Table 4 Challenges and Frequency of Motion

Challenges	Frequency of Mention
Unfamiliarity with the feedback process	45
Timing and location constraints	30
Concerns about straining teacher-learner relationship	25
Educational environment limitations	20

> The main thing is that we don't have time to receive feedback for in-detail for area of improvement (Student 7)

> Time is limited for us. Another thing is the perception of the students on feedback. Last one is the skills of teacher who give feedback are also important. (Teacher 1)

> I think that culture is also barrier to achieve constructive feedback because our culture is hierarchy style. (Teacher 6)

Theme 3 Incorporating Constructive Feedback to Future Professions

Feedback is widely agreed to be important, particularly after examinations. Participants felt that positive and constructive feedback was critical.

> Positive feedback which can improve my performance like that a teacher who give positive feedback in formative assessment, and I can perform well in summative assessment. (Student 4)

Students who can learn new concepts probably know that receiving immediate feedback helps them in their future careers.

> Feedback should be corrected positive minded for improvement. It is important for me and my next career. (Student 3)

The qualitative research offered a complex web of hopes and expectations regarding the usefulness of feedback outside academia.

> Student can take advantage after following the instructions from feedback. He can be motivated gradually after correcting his weakness. (Student 6)

> Feedback is a good culture in our society, and it helps students to meet better outcomes. (Student 2)

Theme 4 Implementing Feedback

The thematic analysis explored how instructors create engaging classroom discussions by incorporating student's feedback. Some teachers have expressed concerns about the length of individual feedback sessions by highlighting the logistical difficulties of providing personalized feedback. The faculty are engaged in different ways of delivering feedback.

> When I give feedback during their OSCE station, most of students improve their performance in summative assessment. (Teacher 9)

> When they do practical lessons, I have to take care of students from the beginning. What I noticed is that after giving feedback effectively, their performance goes up. They have more confidence, and it is more convenient to do things. (Teacher 8)

Theme 5 Comparison of the Views of Students and Professors

Educators and learners have unanimously agreed on the importance of constructive feedback in promoting effective learning. Everyone involved understood the importance of their role in driving enhancements in overall performance.

Discussion

In the constantly evolving field of medical education, this study examined the importance of constructive feedback and how it affects medical students. The study path entailed looking into attitudes, difficulties, and real-world applications to fully understand feedback's effectiveness in medical education. The survey (quantitative) findings strongly corroborated the consensus among instructors and students regarding the indispensable nature of feedback. The quantitative semantic difference and qualitative narrative data are consistent and support the literature-based suggested methods for providing useful feedback.[5]

This study's findings shed light on the richness and complexity of feedback in medical education and basic concepts. The quantitative data revealed that AUSOM faculty and students consistently rated feedback-related items higher than their DSMA counterparts, highlighting institutional and cultural differences. For example, AUSOM faculty rated "Feedback is essential for students' learning" 4.92, compared to 4.61 at DSMA, while AUSOM students rated the same item 4.68 compared to 4.36 at DSMA. These insights emphasize the shared understanding of feedback's importance but also underscore the need for tailored strategies to address contextual variations.

The thematic analysis conducted by investigators in this study provides instructors, students, and everyone else with an understanding of feedback, its interpretation, and response. Qualitative data enriched these findings, with participants highlighting barriers such as time constraints and cultural norms that influence feedback practices. For example, DSMA faculty noted, "Our hierarchical culture makes giving honest feedback difficult", while AUSOM faculty emphasized the importance of immediate feedback to improve performance. This research adds depth to earlier findings by Alam et al,[11] offering a more nuanced understanding of how feedback operates within institutional constraints.

This study explored prospects by looking at how feedback can be used effectively. It identified strategies to overcome barriers, such as integrating technology for timely feedback delivery and adopting structured frameworks like Pendleton's rules for constructive feedback dialogues. Participants across both institutions emphasized the value of one-on-one feedback for personalized instruction, with AUSOM faculty rating it 4.77 compared to DSMA's 3.39. Positive feedback experiences related to corrective and reinforcing feedback were highlighted as particularly beneficial. One participant remarked, "Feedback should guide how to improve, highlighting both strengths and areas for growth".

This study highlights that institutions may need to address obstacles like time constraints. Time limitations were a universal challenge, reflected in lower scores at DSMA for timely feedback delivery (eg, "Feedback should be provided within the stated time frame" rated 3.89 by DSMA faculty compared to 4.62 at AUSOM). Participants proposed solutions such as leveraging digital tools to streamline the feedback process and implementing training programs to enhance faculty efficiency. The faculty stressed the necessity of balancing efficiency with the depth of feedback to meet student needs, a sentiment echoed by students who expressed a preference for immediate and actionable feedback.

The findings support the belief that feedback is critical in medical education. Faculty and student comprehension of one another provides a solid basis for promoting a culture of continuous development. AUSOM students noted, "Feedback helps prepare us for our future careers", highlighting its role in professional growth. This underscores the importance of aligning feedback practices with competency-based learning curricula, as emphasized in current educational models. The mutual expectation for constructive feedback highlights the need for personalized and timely feedback mechanisms to foster growth.

This study emphasizes the significance of feedback when paired with self-evaluation, as evidenced by participants who linked feedback to reflective practices that enhance professional development. For instance, one AUSOM student stated, "Constructive feedback paired with self-assessment helped me identify specific areas for improvement". To assist students in achieving these crucial objectives, it is necessary that they receive and give feedback. Unity is crucial for creating a collaborative and communicative learning environment.[18]

The findings have significant implications for educational institutions seeking to enhance the effectiveness of feedback systems used in medical education. Institutions can address challenges like time constraints by adopting specialized training programs for faculty, focusing on providing prompt and effective feedback. Technology can also play a crucial role in bridging the divide between the need for personalized input and the constraints educators face. For example, digital tools like Learning Management Systems or mobile apps can enable asynchronous feedback delivery while maintaining personalization.

The findings contribute to the ongoing dialogue on optimizing feedback mechanisms, emphasizing the need for strategic solutions to ensure the seamless integration of constructive feedback into medical education. For instance, faculty development programs can focus on building skills to deliver actionable feedback effectively, while students can be trained to handle feedback constructively, avoiding defensiveness when receiving valuable input. These findings extend beyond individual institutions, offering insights into best practices that can elevate the effectiveness of feedback processes across the broader landscape of medical education.

Conclusions

The study's results offer important lessons for educational institutions as they face the fallout and plan. We do have to be mindful of practical limitations while we grasp this need for individually tailored input. Two effective options are available: using technology and providing faculty members with specialized training on speeding up the feedback process. This article contributes to the ongoing dialogue on how feedback can be improved in medical education. Feedback from teachers and students is also very important. The limits announced today offer great opportunities for future research and development, and schools must adjust to the fluid requirements of medical education.

It should be noted that research into constructive feedback's role in medical education is ongoing. It encourages constant progress and motivates participants to work together to form a learning environment where feedback becomes as casuist as possible. Skillfully embracing feedback's value, when it can even transcend classroom limits, refine the next generation's top healthcare talent equipped with all they need in this age where demands on the sector constantly change.

Acknowledgments

The authors would like to acknowledge and thank the IAMSE fellowship and Educational and Scholarship Committee members Quesnelle, Kelly and Khalil Eldeeb. We also would like to thank Dr Sireesha Bala, Dr Praveen Kottathveetil, and Dr Amin Fateh.

The abstract of this paper was presented at the IAMSE Annual Conference, 2023, as a poster presentation with interim findings. The poster's abstract was published in "Poster Abstracts" in the Medical Science Educator Journal; URL: https://link.springer.com/article/10.1007/s40670-024-01980-7

Disclosure

None of the authors have any financial or non-financial interests directly or indirectly related to this work.

References

1. Alhaqwi AI. Importance and process of feedback in undergraduate medical education in Saudi Arabia. *Saudi J Kidney Dis Transpl*. 2012;23(5):1051–1055. doi:10.4103/1319-2442.100949
2. Ramani S, Könings KD, Ginsburg S, van der Vleuten CP. Feedback redefined: principles and practice. *J Gen Intern Med*. 2019;34(5):744–749. doi:10.1007/s11606-019-04874-2
3. van de Ridder JM, Stokking KM, McGaghie WC, ten Cate OT. What is feedback in clinical education? *Medical Education*. 2008;42(2):189–197. doi:10.1111/j.1365-2923.2007.02973.x
4. Dolmans DH, Wolfhagen IH, Essed GG, Scherpbier AJ, van der Vleuten CP. The impacts of supervision, patient mix, and numbers of students on the effectiveness of clinical rotations. *Acad Med*. 2002;77(4):332–335. doi:10.1097/00001888-200204000-00016
5. Archer JC. State of the science in health professional education: effective feedback. *Medical Education*. 2010;44(1):101–108. doi:10.1111/j.1365-2923.2009.03546.x
6. Spector J, Merrill M, Elen J, Bishop M. Research paradigms and perspectives on learning. In: *Handbook of Research on Educational Communications and Technology*. 4th ed. Springler; 2014:21–29.
7. Boud D. Feedback: ensuring that it leads to enhanced learning. *Clin Teacher*. 2015;12(1):3–7. doi:10.1111/tct.12345
8. Archer J. Feedback: it's all in the CHAT. *Medical Education*. 2013;47(11):1059–1061. doi:10.1111/medu.12308

9. Chowdhury R, Kalu G. Learning to give feedback in medical education. *Obstet Gynaecol*. 2004;6(4):243–247. doi:10.1576/toag.6.4.243.27023
10. Areemit RS, Cooper CM, Wirasorn K, Paopongsawan P, Panthongviriyakul C, Ramani S. Hierarchy, "Kreng Jai" and feedback: a grounded theory study exploring perspectives of clinical faculty and medical students in Thailand. *Teach Learn Med*. 2021;33(3):235–244. doi:10.1080/10401334.2020.1813584
11. Alam K, Begum S, Nargis T, Faruque M. Feedback on formative assessments in undergraduate medical education of Bangladesh. *Bangladesh J Physiol Pharmacol*. 2009;18–22. doi:10.3329/bjpp.v25i1.5741
12. Bok HG, Teunissen PW, Spruijt A, et al. Clarifying students' feedback-seeking behaviour in clinical clerkships. *Medical Education*. 2013;47(3):282–291. doi:10.1111/medu.12054
13. Hamid Y, Mahmood S. Understanding constructive feedback: a commitment between teachers and students for academic and professional development. *J Pak Med Assoc*. 2010;60(3):224–227.
14. Faulconer E, Griffith J, Gruss A. The impact of positive feedback on student outcomes and perceptions. *Assess Eval Higher Educ*. 2021;1–10. doi:10.1080/02602938.2021.1910140
15. Cutumisu M, Schwartz D. The impact of critical feedback choice on students' revision, performance, learning, and memory. *Comput Human Behav*. 2018;78:351–367. doi:10.1016/j.chb.2017.06.029
16. Watling C. Cognition, culture, and credibility: deconstructing feedback in medical education. *Perspect Med Educ*. 2014;3(2):124–128. doi:10.1007/s40037-014-0115-2
17. Anderson P. Giving feedback on clinical skills: are we starving our young? *J Grad Med Educ*. 2012;4(2):154–158. doi:10.4300/jgme-d-11-000295.1
18. Bing-You R, Varaklis K, Hayes V, Trowbridge R, Kemp H, McKelvy D. The feedback Tango. *Acad Med*. 2018;93(4):657–663. doi:10.1097/acm.0000000000001927
19. Watling C, Driessen E, van der Vleuten C, Lingard L. Learning culture and feedback: an international study of medical athletes and musicians. *Medical Education*. 2014;48(7):713–723. doi:10.1111/medu.12407
20. Telio S, Ajjawi R, Regehr G. The "educational alliance" as a framework for reconceptualizing feedback in medical education. *Acad Med*. 2015;90(5):609–614. doi:10.1097/acm.0000000000000560
21. van de Ridder J, Berk F, Stokking K, ten Cate O. Feedback providers' credibility impacts students' satisfaction with feedback and delayed performance. *Med Teach*. 2014;37(8):767–774. doi:10.3109/0142159x.2014.970617
22. Ivankova NV, Stick SL. Students' persistence in a distributed doctoral program in educational leadership in higher education: a mixed methods study research in higher education. *Res Higher Educ*. 2007;48(1):93–135. doi:10.1007/s11162-006-9025-4
23. LaDonna KA, Artino AR Jr, Balmer DF. Beyond the guise of saturation: rigor and qualitative interview data. *J Grad Med Educ*. 2021;13(5):607–611. doi:10.4300/JGME-D-21-00752.1
24. Kiger ME, Varpio L. Thematic analysis of qualitative data: AMEE guide no. 131. *Med Teach*. 2020;42(8):846–854. doi:10.1080/0142159X.2020.1755030