



GIVING CONSTRUCTIVE FEEDBACK TO RADIOGRAPHY STUDENTS ON CLINICAL PERFORMANCE

Osward Bwanga

Midland Regional Hospital at Tullamore, Radiology Department, Co. Offaly, Ireland

ABSTRACT: *Radiographers who act as clinical supervisors are responsible for giving constructive feedback to radiography students on clinical performance. Unfortunately, there is a scarcity of educational material to support radiographers in developing and maintaining competence in this role. This article reviews: relevant literature on the principles of giving constructive feedback, models of delivering effective feedback, and barriers associated with giving effective feedback to students on clinical performance. Clinical supervisors applying the principles of giving feedback and models would improve the delivery of feedback to radiography students in the clinical learning environment (CLE).*

KEYWORDS: Clinical Performance, Feedback, Radiographer, Radiography Student

INTRODUCTION

Providing constructive feedback is an essential aspect of supporting radiography students during clinical practice. The College of Radiographers (2006) states that radiographers who supervise radiography students in the clinical learning environment have a responsibility and accountability for providing constructive feedback on their performance. In radiography context, radiographers who supervise radiography students are commonly referred to as clinical supervisors. The Monash University (2013) define feedback as specific information about the comparison between a student's observed performance and a standard performance, given with the intent to improve the student's performance. To perform this role effectively, clinical supervisors should have a theoretical understanding of the principles of giving feedback to students (Krackov, 2009; Monash University, 2013; Walsh, 2014).

Feedback on students' performance is important in many respects. From the students' perspectives, it clarifies goals, reinforces good performance and provides the basis of correcting mistakes (Walsh, 2014; Harden & Laidlaw, 2017). To achieve this, radiography students should have a good understanding of the feedback process. Unfortunately, a study conducted in Zambia by Kayembe (2018) found a lack of understanding about the principles of giving and receiving constructive feedback amongst radiography students and few sought and reflected on feedback given by their clinical supervisors. For clinical supervisors, giving feedback enhances their communication skills and job satisfaction is also achieved by facilitating the learning process of students (Clyne, 2008; Walsh, 2014). To achieve this, clinical supervisors should be knowledgeable and skilful in giving feedback (Krackov, 2009; Walsh, 2014; Harden & Laidlaw, 2017). Unfortunately, there was no published research found in the literature which has assessed the knowledge and skills of radiographers in giving feedback to radiography students. Lastly, from an educational provider's perspective, feedback is a valuable quality assurance mechanism (Krackov, 2009; Walsh, 2014). Evaluating feedback



from students and clinical supervisors can provide useful information which can be used to improve educational training programmes.

Although feedback is important in radiography education, literature revealed that the majority of radiographers globally have received little or no training in educational principles related to the clinical supervision of students (Sutton, 2013; Lee, 2015; Du Plessis, 2019). This includes a lack of training on how to give effective feedback to students. The author also found limited literature on feedback in radiography. Most of the literature appropriate to this topic is from the medical and nursing professions. For this reason, literature from the medical and nursing professions is used in this review to supplement the radiography literature.

The aim of this article is to educate and bring awareness to radiographers on the principles of giving constructive feedback, models of giving constructive feedback and barriers to giving constructive feedback to students on their clinical performance. This information will also be beneficial to other healthcare professionals, such as nurses and medical doctors who facilitate practice-based learning to students in the clinical environment.

PRINCIPLES OF GIVING CONSTRUCTIVE FEEDBACK TO STUDENTS ON CLINICAL PERFORMANCE

There are some critical principles reported in the literature which can help clinical supervisors in providing constructive feedback to students on clinical performance. The common principles reported in the literature are presented in Table 1 (Krackov, 2009, Monash University, 2013; Walsh, 2014; Harden & Laidlaw, 2017; Kayembe, 2018).

Table 1: Principles of Giving Effective Feedback to Students on Clinical Performance

| No | Principle |
|-----------|---|
| 1 | Feedback on clinical performance should be part of the departmental culture |
| 2 | Summative feedback on clinical performance should be planned |
| 3 | Feedback on clinical performance should be private and confidential |
| 4 | Clinical supervisor should allow a student to self-assess on clinical performance |
| 5 | Feedback on clinical performance should be based on student's direct observation |
| 6 | Feedback on clinical performance should be timely and regular |
| 7 | Feedback on clinical performance should be understood by the student |
| 8 | Feedback on clinical performance should contain both positive and negative comments |
| 9 | Feedback on clinical performance should be a two-way discussion |
| 10 | Feedback should focus on clinical performance and behaviour |
| 11 | Formal feedback sessions on clinical performance should end with an action plan and be documented |
| 12 | Clinical supervisor should reflect on his or her feedback-giving skills |
| 13 | Clinical departments should create development opportunities for clinical supervisors |

These thirteen principles of giving constructive feedback to students on clinical performance identified in this review are discussed and conclusions made in relation to radiography.



Feedback on Clinical Performance Should be Part of the Departmental Culture

The first principle in the feedback process is the need to create a conducive learning environment where both the clinical supervisors and students are committed and engaged in the process (Krackov, 2009; Harden & Laidlaw, 2017). For feedback to be effective, the learning environment should promote the concept that clinical supervisors and students are partners in the feedback process (Krackov, 2009). Urquhart et al. (2014) report that positive feedback occurs when there is respect between the student and clinical supervisor. This means that students should be free to critique their clinical supervisors regarding their skills in the facilitation of practice-based learning. This can be part of the quality assurance mechanism where at the end of the clinical placement, radiography students are asked to provide feedback on their experiences regarding clinical supervision. Therefore, radiographers should strive to establish a positive working relationship with radiography students to improve their clinical learning experiences. In addition, schools of radiography should monitor the feedback process as part of a quality assurance programme.

Summative Feedback on Clinical Performance Should be Planned

Planning feedback is an important principle reported in the literature that clinical supervisors should understand to enhance the learning experiences of students. Literature reports formative and summative feedback as two main approaches in giving feedback to students on clinical performance (Krackov, 2009; Walsh, 2014; Kayembe, 2018). Formative feedback includes comments, suggestions, questions or guidance given continuously to students during routine clinical activities, whereas summative feedback evaluates the student's knowledge, skills and achievements at the end of the clinical practice (Monash University, 2020). Summative feedback is conducted away from clinical tasks and a more in-depth discussion about a student's performance can be achieved (Krackov, 2009; Monash University, 2013). The key characteristic of summative feedback is planning. Formal feedback sessions should be scheduled so that the clinical supervisor and the student can both have adequate time to prepare. Harden and Laidlaw (2017) state that planning is a key feature of effective clinical teaching. This includes planning for feedback sessions between the clinical supervisor and the student. Therefore, radiographers should have periodical planned feedback sessions with their students to enhance their clinical learning experiences.

Feedback on Clinical Performance Should be Private and Confidential

Providing feedback to students in a private environment is another principle reported in the literature. In a study conducted by Kayembe (2018), radiography students valued feedback given in a private setting which make them feel a little more relaxed and comfortable enough to discuss poor performance. This finding shows that it can be difficult for students to open up when being given feedback in front of others and can act as a barrier to effective feedback. This is the reason why clinical supervisors who criticise students in front of others are considered to be the "worst" clinical supervisors (Fenton, 2005). Clinical supervisors have also found privacy to be an effective strategy in conveying feedback in the clinical learning environment. In a nursing study conducted by Matua et al. (2014), clinical supervisors reported that students were happy when their feelings and privacy were respected when discussing their performance. This also can avoid embarrassing a student in front of others.



Privacy also means maintaining confidentiality on what is discussed during feedback sessions. In a study conducted in the UK by Turner (2014), radiography students expressed concerns about a lack of confidentiality amongst radiographers regarding feedback. A lack of confidentiality can have a negative impact on students' clinical performance who may try to avoid feedback (Krackov, 2009). This finding serves as a timely reminder to radiographers to maintain privacy and confidentiality regarding feedback on students' clinical performance and only discuss or disclose such information to relevant authorities, such as academic staff.

Clinical Supervisor Should Allow a Student to Self-Assess on Clinical Performance

Another principle of giving constructive feedback often described in the literature is inviting the student to self-assess on clinical performance. Feedback is usually considered as something exclusively provided by clinical supervisors, but in a student-centred teaching approach, students should be encouraged to assess and monitor their clinical performance (Kayembe, 2018). In a study by Matthew-Maich et al. (2015), nursing students described effective clinical supervisors as those who were student-centred approach to clinical teaching as it gives them the ownership of learning. Asking the student's own view of their clinical performance can open a dialogue. The student may also bring up points themselves, which the clinical supervisor had planned for the feedback session (Krackov, 2009). Thus, self-assessment is considered as an essential component of the feedback process and is vital for self-development as well as for the educational growth of a student (Krackov et al., 2017; Sultan & Khan, 2017). With the advancement in technology and internet globally, students can be supported with self-assessment tools. This is a timely reminder to radiographers to encourage radiography students to self-assess on their clinical performance, as it promotes reflective practice and gives insights into their strengths and weaknesses.

Feedback on Clinical Performance Should be Based on Student's Direct Observation

Providing feedback based on direct observation of clinical performance is another principle of giving constructive feedback to students. The best person to provide feedback is usually the clinical supervisor who has worked regularly with the student. Harden and Laidlaw (2017) add that to provide the student with constructive feedback, the clinical supervisor should have accurate information on which to base the feedback. This means working alongside students and directly or indirectly observing them during clinical practice to gather first-hand information. Unfortunately, in a study conducted in the UK by Fowler and Wilford (2016), most radiography students (82.5%) indicated that radiographers do not work with students consistently enough to enable the provision of constructive and meaningful summative feedback on their clinical performance. The practice of students' short stays in each clinical learning environment with multiple clinical supervisors can prevent first-hand information on which to base the summative feedback (Fowler & Wilford, 2016). In other words, a lack of information on students' clinical performance can hinder the feedback process (Krackov, 2009). Therefore, radiography departmental managers should assign each student to a specific radiographer during clinical practice to facilitate practice-based learning and provide feedback based on direct observation of the student's performance.

Feedback on Clinical Performance Should be Timely and Regular

Providing timely and frequent feedback is the most cited principle reported in the literature. The purpose of feedback is to enable the student to make necessary changes before the end of



the placement (Walsh, 2014; Kayembe, 2018). In a study conducted in the UK by Sutton (2013), radiography students reported a lack of timely and regular feedback from radiographers on their clinical performance. This finding is worrying because delaying feedback lessens the time a student has to remediate the behaviour or performance during the placement period. This serves as a reminder to radiographers to provide feedback as soon as possible after the examination so that the radiography student has enough time to act and improve on his or her clinical performance. However, it should be mentioned that timely feedback is not necessarily immediate, but the timing depends on the nature of the task at hand. For example, feedback cannot be provided immediately in an emergency.

Literature also reports that clinical supervisors and students differ in their perceptions of feedback. Clinical supervisors believe that they provide feedback more frequently than students say they receive it (Krackov, 2009). This difference in perception and opinion can hinder the learning process of students. One explanation of this difference in the perceptions is that students may not recognise formative (informal) feedback which is given continuously during day to day clinical tasks as actual feedback. It is, therefore, essential for radiographers to schedule periodical summative (formal) feedback sessions, which can take place away from clinical tasks and interruptions. This also allows for discussion of specific issues in more depth than is allowed either during or between imaging examinations.

Feedback on Clinical Performance Should be Understood by the Student

Providing clear and specific feedback is another important principle described in the literature. This means that the student should understand what is being discussed about his or her clinical performance. This can be achieved by providing the student with an explanation of what he or she did or did not do to meet the expected learning outcome (Walsh, 2014). It is also essential to provide evidence to support and illustrate comments. A study conducted by Kayembe (2018), found that radiography students perceived feedback as a positive experience when it focused on specific aspects of their clinical performance because it helped in bringing significant change in their thinking, behaviour and performance. The same study also found that feedback which is clear should be given using technical and professional language. Unfortunately, the most common complaint students make is that feedback is too general, and this is of little value in improving their clinical performance (Fenton, 2005; Fowler & Wilford, 2016). However, in a student-centred learning approach, students should probe deeper and find out the actual details of the feedback by asking specific questions of their clinical supervisors (Harden & Laidlaw, 2017; Kayembe, 2018).

Clinical supervisors have also found providing clear and specific feedback as an effective strategy in conveying feedback to students. In a nursing study conducted by Matua et al. (2014), clinical supervisors reported that they have found that when giving feedback which is clear and focused, students were comfortable with them even though the comments were negative. Therefore, radiographers should provide radiography students with feedback about their clinical performance against clearly defined learning outcomes. Informing a radiography student in general terms that he or she lacks competence in an area is of little value in improving their clinical performance (Fowler & Wilford, 2016; Kayembe, 2018).



Feedback on Clinical Performance Should Contain both Positive and Negative Comments

Providing feedback containing both positive and negative comments is another commonly cited principle in the literature. In a study conducted by Kayembe (2018), radiography students appreciated radiographers who give them balanced feedback because positive comments make them feel confident to repeat the desirable action and engage with more clinical work, whilst negative comments help them to identify their weak areas for improvement. Walsh (2014) adds that clinical supervisors should be aware that negative feedback, if not carefully managed, can result in demotivation and deterioration in students' performance. Clinical supervisors have found giving positive comments easier than negative comments. In a study conducted in Ireland by Clyne (2008), clinical supervisors of nursing students were concerned about how giving negative feedback would affect their reputation and how this could impact on their relationship with students. The same nursing study found that writing negative feedback was more difficult than positive feedback because of the concern that the written format provides a permanent record of what took place which can reflect badly on them in future. Therefore, clinical supervisors should be knowledgeable and skilful in delivering balanced feedback using Feedback Sandwich or Pendleton models.

Feedback on Clinical Performance Should be a Two-Way Discussion

A two-way conversation between a clinical supervisor and student is another principle of feedback reported in the literature. Krackov (2009) states that a conducive learning environment is essential for feedback to be maximised. The clinical supervisor should treat the student as a partner who is expected to participate in the feedback sessions (Kayembe, 2018). Unfortunately, the concept of feedback remains poorly defined amongst students and clinical supervisors. For example, in a study conducted in the UK by Urquhart et al. (2014), medical students understood feedback as a one-way process from the clinical supervisor to the student. However, Harden and Laidlaw (2017) argue that feedback should be a two-way discussion between the clinical supervisor and the student. This means that a student should take an active part in the feedback process by initiating and responding to questions (Kayembe, 2018). The lack of understanding can be a barrier to the provision and utilisation of feedback (Krackov, 2009). This finding serves as a timely reminder for radiographers to genuinely be receptive to feedback from radiography students and for the schools of radiography to impart this information to students during pre-clinical courses.

Feedback Should Focus on Clinical Performance and Behaviour

Another principle of feedback described in the literature is that comments should focus on the student's performance and behaviour. Krackov (2009) states that it is easier to change behaviours than personalities. Comments on personalities can weaken the working relationship between the clinical supervisor and the student. In addition, feedback should be descriptive and phrased in neutral or non-judgemental language, focusing on students' clinical performances (Monash University, 2013). In a study conducted in the UK by Urquhart et al. (2014), medical students reported negative experiences where clinical supervisors commented on their individual characteristics and this was described as abusive and negatively affected their learning process. Therefore, radiographers should give open, honest and objective feedback to radiography students and keep personal feelings to themselves when giving feedback, i.e. by controlling their anger if the student did something wrong. In this situation, delaying giving feedback on performance is essential to allow the radiographer to cool off.



Formal Feedback Session on Clinical Performance Should End with an Action Plan and Documented

The other principle for consideration in the feedback process is the formulation of an action plan and documentation of the discussion. In Al Hagwi's (2012) study, medical students appreciated a clinical supervisor who included an action plan of how to improve their future performance in the feedback session. In this regard, the clinical supervisor should invite the student to formulate a plan for improvement at the end of the feedback session. This strategy helps to develop students' skills of reflection which is based on the principles of student-centred learning (Krackov et al., 2017). However, the action plan and follow-up meeting are a process of agreement between the clinical supervisor and student. Kayembe (2018) adds that documentation of feedback discussion provides a permanent record for future reference purposes. This is a reminder to radiographers to give written feedback and document the feedback session as evidence of the student's clinical performance and competence progress. The records can also be used to prepare the report to send to respective schools of radiography about students' performance at the end of the clinical placement.

Clinical Supervisor Should Reflect on His or Her Feedback-Giving Skills

Another important principle of giving effective feedback to students found in the literature is clinical supervisors reflecting on their skills. Self-reflection by clinical supervisors should follow every formal feedback session (Ramani & Krackov, 2012). After each feedback session, the clinical supervisor should reflect on what went well, what to change next time and what new strategies to include in the future to ensure the success of meetings (Krackov, 2009). The author suggests that even with the best preparation and use of feedback principles, it is still possible that feedback sessions may not go according to plan. Some students may become defensive about negative feedback and deny, rationalise, or blame somebody else for their poor clinical performance.

Clinical supervisors should consider giving feedback as a skill, which is acquired through repeated practice (Ramani & Krackov, 2012). Sometimes, it may be useful to discuss feedback challenges with peers and senior clinical supervisors in order to develop new skills (Ramani & Krackov, 2012; Qureshi, 2017). Visually recording feedback meetings and peer observation are two strategies reported in the literature to improve the skill of giving feedback to students on their clinical performance (Ramani & Krackov, 2012). Therefore, radiographers should always conduct a reflection after each feedback session to develop the skills in providing feedback to students and to enhance the clinical supervision experiences.

Clinical Departments Should Create Development Opportunities for Clinical Supervisors

The final principle of feedback reported in the literature is the development of education and training opportunities for clinical supervisors related to the facilitation of practice-based learning. This can be achieved through the establishment of a clinical supervision training programme. Krackov (2009) explains that training activities are designed to improve clinical supervisors' knowledge and skills in specific target areas. Furthermore, clinical supervisors should be provided and encouraged to undertake continuing professional development (CPD) related to clinical education. The College of Radiographers (2008) defines continuing professional development as "ongoing professional activity in which the practitioner identifies, undertakes and evaluates learning appropriate to the maintenance and development of the

highest standards of practice within an evolving scope of practice”. This means that clinical supervisors should, on an ongoing basis, identify their learning needs at giving feedback, make a personal learning plan, implement plan and reflect on the knowledge gained from the activity. Therefore, the schools of radiography and clinical departments should work together in providing training to clinical supervisors to develop and maintain their teaching knowledge and skills, including giving constructive feedback to students.

MODELS FOR GIVING CONSTRUCTIVE FEEDBACK TO STUDENTS ON CLINICAL PERFORMANCE

Feedback models have been developed to help clinical supervisors effectively deliver feedback to their students in a structured manner and in a non-judgmental language. The two most used and accepted models of providing feedback are the feedback sandwich and Pendleton models (Sultan & Khan, 2017). These feedback models, used in conjunction with principles of giving effective feedback discussed earlier, are very effective when combined. The two approaches to giving constructive feedback are discussed in relation to radiography.

Feedback Sandwich Model

Clinical supervisors are more likely to give constructive feedback if they can develop an approach that is unlikely to embarrass or offend the student (Walsh, 2014; Monash University, 2013; Sultan & Khan, 2017). One such approach is called the “feedback sandwich model”, where the clinical supervisor makes a positive statement, discuss areas for improvement, and then finishes with another positive statement (Figure 1).

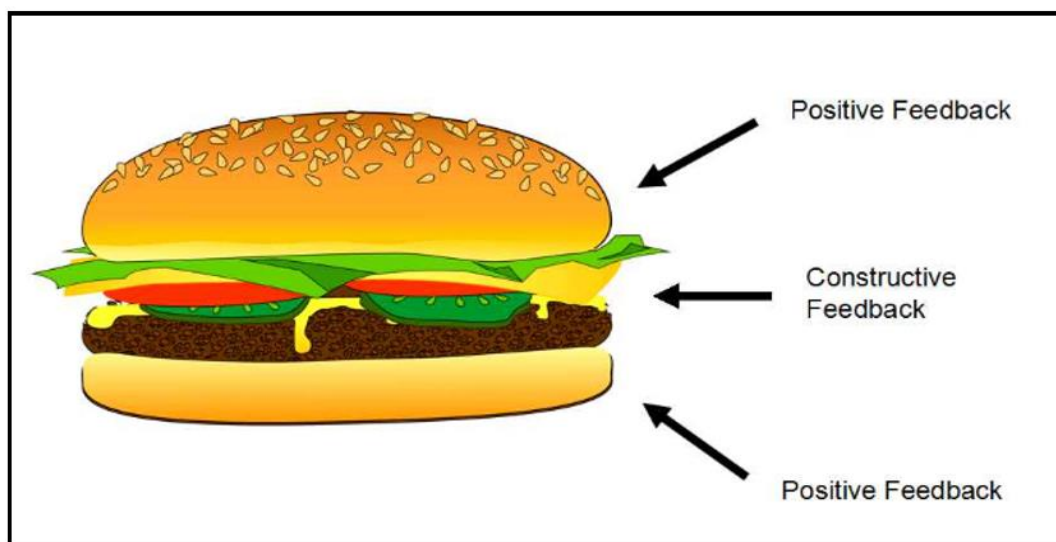


Figure 1: Feedback Sandwich Model (Source: <https://workwithchantell.wordpress.com>)

Clinical supervisors have appreciated this approach. For example, in studies conducted by Clynes (2008) and Matua et al. (2014), clinical supervisors of nursing students reported using the sandwich model as a useful method for giving constructive feedback to students on their clinical performance.

Although the feedback sandwich model is a useful approach to conveying feedback to students, it has some weaknesses. The most significant disadvantage of this model lies in its predictability, as a student may not listen to the positives and instead wait for the impending negative feedback (Qureshi, 2017). Clinical supervisors also tend to concentrate on positive performance, leaving less time to discuss areas of improvement which can leave the student with a false positive impression (Sultan & Khan, 2017). This can hinder the student's learning process. The power balance in this model also clearly favours the clinical supervisor and makes the student an inactive partner. In other words, it is a teacher-centred approach. For feedback to be effective, students should actively be involved in the feedback process by expressing their individual views about their performance as well as listening to the observations from their clinical supervisor (Walsh, 2014; Kayembe, 2018). This can also reduce the likelihood of a defensive response to negative feedback and make students more receptive (Krackov, 2009). As a result of these weaknesses, a Pendleton feedback model was developed which places the student as an active partner in the feedback process.

Pendleton Feedback Model

In 1984, Pendleton developed an approach for establishing a conversation about performance between the clinical supervisor and student (Qureshi, 2017). The Pendleton feedback model focuses on student-centred learning which empowers students to take more responsibility for their learning (Harden & Laidlaw, 2017). It overcomes the weaknesses of the sandwich model which puts a student in a passive role in the feedback process. The Pendleton model consists of four steps to achieve a constructive feedback session (Figure 2).

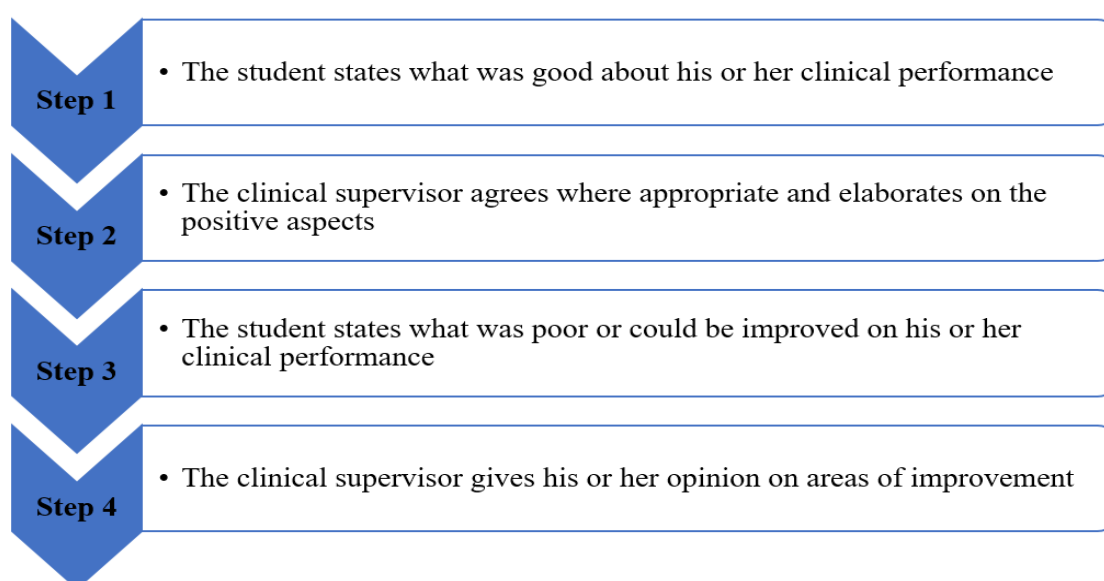


Figure 2: Pendleton Feedback Model



The Pendleton model highlights positive and negative comments about performance, first by the student and followed by the clinical supervisor to create an environment conducive for learning (Sultan & Khan, 2017). This approach also avoids defensive reactions from the student on poor clinical performance (Krackov, 2009; Ramani & Krackov, 2012), but allows a more detailed review of clinical performance and encourages the student to become better at recognising what should be maintained or developed about their individual clinical performance (Qureshi, 2017). In other words, it helps the student to develop self-reflection, a crucial skill for lifelong learning and vital for autonomous practice. However, a significant criticism of the Pendleton model is that it is too systematic and rigid (Qureshi, 2017). The steps in this model can create an artificial structure that may prevent the clinical supervisor and the student from getting to the bottom of the problem. Practically, the model is also time consuming due to the repetition of positive and negative comments.

BARRIERS TO GIVING CONSTRUCTIVE FEEDBACK TO STUDENTS ON CLINICAL PERFORMANCE

There are several barriers to giving effective feedback to students on clinical performance reported in the literature.

Table 2: Barriers to Giving Effective Feedback to Students on Clinical Performance

| No | Barrier |
|-----------|---|
| 1 | Lack of time for both the clinical supervisor and the student due to workload |
| 2 | Lack of knowledge and skills amongst clinical supervisors on how to give feedback to students on their clinical performance |
| 3 | Hierarchical culture of radiography which promotes a one-way flow of information from a radiographer to a radiography student |
| 4 | Difference in age between a clinical supervisor and a student |

The most cited barrier to giving feedback to students on clinical performance is a lack of time. For example, in a study conducted by Fowler and Wilford (2016), the majority (68.9%) of radiography students reported that radiographers were too busy to provide feedback to students. A similar study conducted in Zambia by Kayembe (2018), also revealed that a busy clinical department makes it difficult for students to seek feedback from their clinical supervisors. This can lead to an excessive delay before feedback is given to students on clinical performance or prevent it from happening at all.

The second barrier reported in the literature is that the clinical supervisor may not know how to give feedback or may have had little practice giving feedback on students' clinical performance (Krackov, 2009). This is more common in radiography because most radiographers who supervise radiography students in the clinical learning environment have received little to no clinical supervision training (Sutton, 2013; Cunningham et al., 2015; Lee, 2015; Du Plessis, 2019). This has been a source of concern in radiography globally. Harden and Laidlaw (2017) point out that clinical teaching and learning is best delivered when there is an understanding and application of the educational principles relating to the facilitation of learning for students. The author, therefore, recommends the establishment of a clinical supervision training course for radiographers in countries without such programmes.



The third barrier is the hierarchical culture of radiography which promotes a one-way flow of information from the radiographer to a radiography student. This kind of culture can put the student in a passive role where the student is always waiting for the clinical supervisor to give feedback (Krackov, 2009; Harden & Laidlaw, 2017). Kayembe (2018), states that radiography students have a responsibility to seek feedback from clinical supervisors during clinical training. There is a need to empower radiography students with the knowledge and skills of giving and receiving feedback on performance during pre-clinical courses.

The last barrier to giving effective feedback identified in the literature relates to the age difference between the clinical supervisor and the student. In a study conducted by Clyne (2008), clinical supervisors of nursing students reported having challenges in giving feedback to in-service mature students. In this nursing study, it was found that clinical supervisors had reservations in advising students older than them who had more experience in the profession.

CONCLUSION

In conclusion, there is a lack of literature in radiography on giving constructive feedback to radiography students on clinical performance. This review also finds that it is challenging to provide feedback in the clinical learning environment due to the competing demands of providing patient care and facilitating the learning process of students (Fowler & Wilford, 2016). Therefore, staff development in terms of training and provision of protected time for feedback sessions are important to minimise these challenges and to improve the experiences of both clinical supervisors and students. This article has provided radiographers with principles and models of giving constructive feedback to students on clinical performance.

This review also found a lack of research on the experiences of radiographers as well as their knowledge, attitudes and practices at giving constructive feedback to radiography students in the clinical learning environment. It is recommended that radiographers and radiography students should undertake research on this subject to have a good understanding of the practice of giving and receiving feedback on students' clinical performance.

REFERENCES

- AlHagwi, A.I. (2012). Importance and process of feedback in undergraduate medical education in Saudi Arabia. *Saudi Journal of Kidney Diseases Transplantation*, 23 (5): 1051-1055.
- Clynes, M. (2008). Providing feedback on clinical performance to student nurses in children's nursing: challenges facing preceptors. *Journal of Children's and Young People's Nursing*, 2 (1): 29-35.
- College of Radiographers (2006). *Guidance and strategies for effective relationships between education providers, placement providers and learners*. London: The College of Radiographers.
- College of Radiographers (2008). *Continuing professional development: professional and regulatory requirements*. London: The College of Radiographers.
- Cunningham, J., Wright, C., & Baird, M. (2015). Managing clinical education through understanding key principles. *Radiologic Technology*, 86 (3): 257-273.



- Du Plessis, J. (2019). Stakeholders' viewpoint on work-integrated learning practices in radiography training in South Africa: Towards improvement of practice. *Radiography*, 25 (1): 16-23.
- Fenton, P. (2005). Student perception of a quality clinical experience: Findings from the literature and their application to radiation therapy. *The Radiographer Journal*, 2005; 52 (1): 30-33.
- Fowler, P., & Wilford, B. (2016). Formative feedback in the clinical practice settings: What are the perceptions of student radiographers? *Radiography*, 22 (1): 16-24.
- Harden, R.M., & Laidlaw, J.M. (2017). *Essential skills for a medical teacher-An introduction to teaching and learning in medicine*. 2nd edition. London: Elsevier.
- Kayembe, R.M. (2018). Knowledge, attitudes and practices of student radiographers regarding feedback on clinical performance in Zambia. MSc Dissertation. Sheffield Hallam University. Sheffield.
- Krackov, S.K. (2009). Giving feedback, in *A practical guide for medical teachers*, edited by JA Dent & RM Harden. 3rd edition. London: Churchill Livingstone Publisher Ltd: 357-367.
- Krackov, S.K., Pohl, H.S., Peters, A.S., & Sargeant, J.M. (2017). Feedback, reflection and coaching: a new model, in *A practical guide for medical teachers*, edited by JA Dent & RM Harden. 5th edition. London: Churchill Livingstone Publisher Ltd: 281-288.
- Lee, C.G. (2015). Radiography clinical instructors' perceptions of the transition from technologist to educator. Dissertation. East Tennessee State University. Johnson.
- Matthew-Maich, N., Martin, L., Ackerman-Rainville, R., Hammond, C., Palma, A., Cerements, D., & Stone, R. (2015). Student perceptions of effective nurse educators in clinical practice. *Nursing Standard*, 29 (34): 45-52.
- Matua, A.M., Seshan, V., Akintola, A.A., & Thanka, A.N. (2014). Strategies for providing effective feedback during preceptorship: Perspectives from an Omani hospital. *Journal of Nursing Education and Practice*, 4 (10): 24-31.
- Monash University (2013). *Practical guide for clinical educators*. Melbourne: The Monash University.
- Monash University. (2018). Supporting students during clinical-based learning. From <http://med.monash.edu.au/radiography/clinical-supervision/index.html> (accessed 27 January 2020).
- Qureshi, N.S. (2017). Giving effective feedback in medical education. *Royal College of Obstetricians and Gynaecologists Journal*, 19: 243-248.
- Ramani, S., & Krackov, S.K. (2012). Twelve tips for giving feedback effectively in the clinical environment. *Medical Teacher*, 34: 787-791.
- Sultan, A.S., & Khan, M.A.M. (2017). Feedback in a clinical setting: A way forward to enhance student's learning through constructive feedback. *Journal of the Pakistan Medical Association*, 67 (7): 1078-1084.
- Sutton, R. (2013). A focused ethnography of radiotherapy students' learning on their first clinical placement. Doctorate thesis. Cardiff University. Cardiff.
- Turner, J. (2014). An investigation of third year undergraduate diagnostic radiography students' perceptions of stress and coping mechanisms whilst on clinical placement. Hertfordshire: University of Hertfordshire.
- Urquhart, L.M., Rees, C.E., & Ker, J.S. (2014). Making sense of feedback experiences: A multi-school study of medical students' narratives. *Medical Education*, 48 (2): 189-203.
- Walsh, D. (2014). *The nurse mentor's handbook-supporting students in clinical practice*. 2nd edition. Berkshire: Open University Press.