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A study to explore the knowledge, attitudes and practices of student radiographers regarding feedback on clinical performance in Zambia

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ABSTRACT

Introduction. Feedback is an essential element of the radiography programmes in Zambia and globally. Little is known about student radiographers' understanding of the principles of feedback, and their attitudes and practices towards feedback on clinical performance. An understanding can help clinical educators to empower students to take more responsibility for their own clinical learning.

Aim. The aim of this study was to explore the knowledge, attitudes and practices of student radiographers regarding feedback on clinical performance in a training institution in Zambia.

Methodology. A qualitative design and descriptive phenomenology approach was used. Data were collected from a purposive sample of second and third-year student radiographers (n=10) who participated in semi-structured interviews. Thematic analysis of the data was done to identify themes and sub-themes.

Results. Four themes emerged: knowledge about the principles of feedback on clinical performance; attitudes towards feedback on clinical performance; practices of students related to feedback on clinical performance; and suggestions on how to further enhance the knowledge, attitudes and practices of student radiographers regarding feedback on clinical performance. Generally, the student radiographers' understanding of principles of feedback was below average. They had positive attitudes towards it. A few sought and reflected on feedback given by supervising radiographers during their clinical practice.

Conclusions. Some deficiencies in the knowledge and practices of student radiographers in relation to feedback on clinical performance were identified. These require improvements. An interventional educational programme is recommended to improve the learning process of students during their clinical practice.

Keywords clinical educator, clinical practice, enhance, qualitative, radiography.

LAY ABSTRACT

Student radiographers at a training facility in Zambia were asked their opinions of the information given to them by radiographers who watched them do radiography examinations on patients. The students were also asked what they did to obtain the information and whether they took notice of it to improve their skills.

INTRODUCTION

This study was conducted with students undertaking a three-year diploma in a radiography programme in Zambia. In this educational programme, students spend half of their training time on clinical practice at the University Teaching Hospital (UTH) and other hospitals affiliated to the school of radiography. Clinical training allows students to apply theory into practice under the supervision of experienced radiographers who support them through the teaching and provision of feedback on clinical performance.^[1,2] The role of radiographers is to facilitate students' learning by allowing them to take responsibility for their own learning.^[2] This entails identifying their personal learning needs and

seeking and reflecting on feedback on clinical performance.

Feedback is the information communicated by an educator to a student so that the latter can modify their thinking or behaviour in order to improve the learning process.^[3] This, and other definitions in the literature, does not consider a student as an active partner in the feedback process. However, effective feedback should be a two-way discussion between a clinical educator and a student.^[4] This means that student radiographers should take an active part in the feedback process by initiating and responding to questions, and reflecting on feedback given by supervising radiographers.

Constructive feedback on clinical perfor-

mance is important to students: it enables students to recognise their deficiencies, highlights what is expected of a student, and has a motivating effect on a student.^[3,4] Constructive feedback enhances students' learning experiences. In a study, conducted in the United States of America, by Ingrassia^[5] student radiographers described radiographers, who gave them constructive feedback, as being effective clinical supervisors. Without giving feedback, good practice is not reinforced, poor performance is not corrected, and a path to improvement not identified.^[6,7] This means that mistakes can go uncorrected, and clinical competence is achieved empirically or not at all.

Despite the importance of feedback in radiography education programmes, there

is little research conducted on feedback to students on clinical performance. A survey by Fowler and Wilford^[8] in the United Kingdom (UK), evaluated the feedback process in a clinical setting from student radiographers' perspectives. There seems to be a lack of studies in the literature on student radiographers' knowledge, attitudes and practices regarding feedback on clinical performance. The recent teaching approach of giving more responsibility to students for their own learning^[1,3] requires an understanding of three domains, namely, knowledge, attitudes, and practices of students regarding feedback, upon which educators can base their planning and clinical supervision of students.

The three-year diploma in a radiography programme in Zambia has two equal components: theory or pre-clinical subjects, and clinical practice. First-year student radiographers are fully involved in pre-clinical subjects at the college. Students undertake subjects such as anatomy and physiology, radiographic technique and equipment, radiation protection and patient care. They attend demonstrations of clinical experiences. Fellow students play the role of a patient during such demonstrations and learn radiographic examinations in a risk-free environment. The purpose of this is to prepare them for clinical practice. Second and third-year students are involved in both theory and clinical practice. Student radiographers undertake their clinical practice at the UTH as it is the main clinical training institution in the country. UTH is the largest hospital in Zambia, with a capacity for 1800 beds. The radiology department is equipped with a wide range of diagnostic imaging equipment and provides a full range of radiology services: plain-film x-rays, fluoroscopy, theatre radiography, interventional radiology, mammography, ultrasound, computed tomography, magnetic resonance imaging, and nuclear medicine. Student radiographers are also attached to other hospitals outside UTH, to ensure that they are exposed to different diagnostic imaging equipment and examinations. There is no specifically assigned radiographer to each student to be responsible for student supervision. All radiographers supervise students, individually or in groups depending on the number of radiographers.

A busy clinical learning environment has been identified as a barrier to an effective

feedback process for students' performances.^[4,8] A supervising radiographer and student may be too busy for a feedback session; this can lead to an extreme delay in providing feedback or can prevent it from happening at all. In Zambia, a lack of human resources was identified as a major problem in providing quality radiology services.^[9] This resulted in doubling the enrolment number of student radiographers at the study site despite the shortage of radiographers to clinically supervise them. This situation has added pressure to radiographers who, at the same time, provide services to patients. It was for this reason that this research was initiated. The aim of this study was to explore the knowledge, attitudes and practices of student radiographers regarding feedback on clinical performance in Zambia.

METHODOLOGY

A qualitative research design and a descriptive phenomenology approach was used. Qualitative design provided a means to explore and understand student radiographers' knowledge, attitudes and practices towards feedback on clinical performance in a non-judgemental way.^[10,11] The descriptive phenomenology approach provided in-depth conversations between the researcher and the participants whilst withholding preconceived beliefs and opinions (also known as bracketing) about the phenomenon under study.^[12] Bracketing was achieved by the researcher using reflexive writing to record in an ongoing fashion, thoughts about how previous experience and literature review about feedback affected the inquiry.

The targeted population was student radiographers at the study site. Potential participants were purposively sampled with the help of the head of radiography section. It was assumed that the participants would best help the researcher answer the research question and meet the study objectives.^[10] Table 1 shows the inclusion and exclusion criteria for the study.

Five second year and five third year students (n=10) who met the inclusion criteria participated in the study. As per the exclusion criteria first year students were not included in the sample. There were nine males and one female. The Zambian radiography profession is male dominated hence the gender ratio of the participants reflected this demographic.

Data were collected by semi-structured interviews using an interview guide. With semi-structured interviews, more complex issues were probed, and answers explained.^[12] This helped the researcher to develop a good understanding of the research problem. The interview guide contained four open-ended questions (Table 2).

Ethics approval was obtained from the Sheffield Hallam University of the UK as well from the study site ethics committees. Three participants were then recruited for a pilot study that was conducted during the first week of May 2018. This pilot study served to test the interview guide, trustworthiness, reliability, researcher's interview skills, time frames and sound of the audio recordings.^[11,13] Analysis of the responses of the participants indicated no changes were needed to the interview guide in Table 2. The pilot study data were not included in the study and the participants were not included in the main research sample.

A quiet interview venue at the study site was used. Prior to each interview, the purpose of the study was explained to each participant. All were assured of anonymity and confidentiality; informed consent was obtained. Each interview was digitally recorded and lasted about thirty minutes. The researcher recorded the interviews verbatim and analysed the transcripts using a thematic framework recommended by Ajjawi and Rees^[14] for analysing qualitative data: familiarisation with the collected data; identification of a thematic framework; indexing; charting; mapping and interpretation. To ensure anonymity and confidentiality, personal details of the participants were anonymised and pseudonyms such as participant 1, 2, 3 up to 10 were used.

Lincoln and Guba's model of trustworthiness, as described by Polit and Beck,^[12] was used and encompassed four notions: credibility, dependability, confirmability, and transferability. Credibility refers to the confidence that can be placed in the truth of research findings.^[13] To safeguard credibility, the researcher employed reflexive journaling, multiple sources (2nd and 3rd year students) to triangulate data collection, pilot study, and member checking. Creswell and Creswell^[11] define dependability as the stability of findings over

time. In this study, dependability was achieved by careful reporting of the research process in detail to allow others repeat the study and for audit trail purposes. Confirmability means that a study's results were not to be influenced by the researcher's bias or views.^[12] To ensure confirmability, direct quotes from the participants are presented in italics below. Transferability refers to the degree to which the results can be transferred to other settings or context.^[13] Hence, the researcher facilitated this through thick description of all processes.

RESULTS

Four main themes emerged during data analysis: knowledge, attitudes, practices and suggestions in-line with the study objectives. Table 3 presents the themes and sub-themes which emerged during data analysis.

THEME 1: knowledge on the principles of giving and receiving feedback on clinical performance

This theme and sub-themes pertained to question 1 in Table 2. Four principles of feedback were identified by the participants: feedback should be balanced, feedback should be timely and frequent, feedback should be offered in private, and clear and specific.

Sub-theme 1: feedback should be balanced

Seven of the participants stated and understood that effective feedback should be balanced, containing both positive and negative comments. Students reported that positive feedback provides the will to engage more with clinical work; negative feedback helps them to identify their weak areas in need of improvement.

I know that feedback should contain both positive and negative comments

Table 1. Inclusion and exclusion criteria

INCLUSION CRITERIA	EXCLUSION CRITERIA
<ul style="list-style-type: none"> • Student radiographers undertaking a three-year programme at the study site • 2nd and 3rd year student radiographers • Student radiographers with experience in clinical practice • Undergraduate students 	<ul style="list-style-type: none"> • Student radiographers from other institutions studying radiography • 1st year student radiographers • Student radiographers with no experience in clinical practice • Postgraduate students

as not all of the time one does the right thing. Negative feedback alone hurts more but when it is balanced it is better. It is always professional for a supervising radiographer to give two-sided feedback on student performance in the clinical area to alleviate the negative part of the performance. (Participant 2)

Participant 9 understood the importance of having balanced feedback on clinical performance but reported to be more concerned with positive comments than negative ones.

I am aware that feedback should be balanced but once I get positive feedback I don't bother to ask for the negative feedback. (Participant 9)

These verbatim comments indicate that balanced feedback, containing both positive and negative comments, motivates students and enhances their clinical learning process.

Sub-theme 2: feedback should be timely and frequent

Two participants identified and knew that effective feedback should be timely and frequent. Timely and regular feedback helps to quickly correct mistakes, act on time and reinforce clinical learning.

When I get feedback, which is timely and frequent it makes sense of my poor performance sooner rather than

later. Delaying feedback will have a serious negative impact on my learning as I won't know areas for improvement. (Participant 3)

Learning takes place more effectively when errors are identified and corrected on the spot rather than waiting for another day.

Sub-theme 3: feedback should be private

Three participants identified and understood that privacy is an important consideration when giving feedback. Participants during the interviews described a feeling of being relaxed when feedback is given in a private setting.

I prefer private feedback to be given to me such that I have the freedom of asking more questions to the supervising radiographer and commenting on my performance. (Participant 4)

Another participant talked about the importance of confidentiality in the feedback process.

Feedback – it is all about confidentiality on my performance and no one else should know my weaknesses. I don't want anyone else to know about my shortfalls apart from the supervising radiographer. (Participant 6)

Some participants knew that feedback should be private and confidential, especially negative comments which can have

Table 2. Open-ended and probing questions

Question 1	What are the principles of giving and receiving feedback on clinical performance?
Question 2	How do you feel about getting feedback on your clinical performance? What form of feedback do you like? Why? (probe questions)
Question 3	a) Do you seek feedback on your clinical performance from your supervising radiographer? Why? b) How do you reflect on the feedback given to you by the supervising radiographer? Why?
Question 4	What suggestions do you have that, in your opinion, can further improve the knowledge, attitudes and practices of students regarding feedback on clinical performance?

Table 3. Four main themes and ten sub-themes which emerged during data analysis

THEMES	SUB-THEMES
Theme 1 Knowledge on the principles of giving and receiving feedback on clinical performance	<ul style="list-style-type: none"> • Feedback should be balanced • Feedback should be timely and frequent • Feedback should be private • Feedback should be clear and specific
Theme 2 Attitudes regarding feedback on clinical performance	<ul style="list-style-type: none"> • Individual versus group feedback • Verbal versus written feedback
Theme 3 Practices regarding feedback on clinical performance	<ul style="list-style-type: none"> • Seeking for feedback • Reflecting practices on feedback
Theme 4 Suggestions on how to further enhance the students' knowledge, attitudes and practices regarding feedback on clinical performance	<ul style="list-style-type: none"> • Integration of the theory on the principles of giving and receiving feedback into pre-clinical courses • Application of the principles of feedback on demonstrations during pre-clinical courses

a negative impact on the performance of a student. Feedback given in private helps students to discuss their weak areas and this leads to performance improvements. This was identified as a facilitating factor to learning in the clinical area.

Sub-theme 4: feedback should be clear and specific

Three of the participants identified and understood that effective feedback should be clear and specific. This was said to help them reflect on their performance and understand the gaps in their learning process.

I want clear and detailed comments from the supervising radiographer such that it will help me to know where I didn't meet the requirement and correct my mistake so that I cannot be a danger in the future to my patients as radiation is harmful. (Participant 5)

A third year participant added the following.

To just be told 'well done' doesn't make sense to me, but when I am given feedback which pinpoints the evaluation criteria it really assists me in knowing what I should be looking to see on my radiograph. (Participant 10)

The above quotes showed that a few participants understood that effective feedback should be clear and specific, containing a detailed explanation of what a student did or did not do well to meet the learning outcomes. This means that

supervising radiographers do not leave room for doubt on the areas requiring improvement.

THEME 2: attitudes regarding feedback on clinical performance

This theme and sub-themes pertained to question 2 in Table 2. Following data analysis two sub-themes were identified: individual versus group feedback; and verbal versus written feedback.

Sub-theme 1: individual versus group feedback

Six of the participants preferred individual feedback over group feedback. Most liked feedback given individually because they considered themselves as having different requirements in terms of personal capabilities, motivation and learning styles.

I like individual feedback more than group feedback in the sense that we all have different levels of understanding, such that the feedback given to me might not make sense to others or will take time for other students to understand it. (Participant 2)

The other four participants preferred feedback given in groups as it helped them to learn from their peers' mistakes and this saves time.

I do not mind group feedback – it is even better whereby everyone can contribute. (Participant 1)

There was no consensus as some participants preferred individual feedback and others did not. Most preferred feedback to be given individually rather than in a group.

Sub-theme 2: verbal versus written feedback

Four of the participants preferred verbal feedback over written feedback. They provided reasons for their preference: comments can be given immediately, and they can quickly correct their mistakes.

I like verbal feedback more than written feedback because there is that flow of information between the supervising radiographer and the student and the supervising radiographer can be interrupted when not clear, moreover written feedback is time consuming. (Participant 8)

The six who preferred written feedback stated it offers a permanent record for future reference.

I prefer written feedback since it can serve as a reference in the future more than oral feedback can, meaning when in a similar situation in the future I can go back to it and refresh my mind. (Participant 1)

The majority of participants (n=6) preferred written over verbal feedback.

THEME 3: practices regarding feedback on clinical performance

This theme and sub-themes pertained to questions 3a and b in Table 2. Following data analysis, two sub-themes were identified: seeking and reflecting on feedback. Interviews revealed that only a few of the participants sought and reflected on feedback.

Sub-theme 1: seeking for feedback

Four of the participants did seek feedback on clinical performance from their supervising radiographers. They reported that seeking feedback is always good as it enables them to quickly know which areas to improve rather than waiting until the last moment to make changes.

Seeking for feedback is always vital to me because I want to know where I stand rather than feeding myself with false hope on my performance. (Participant 3)

A clinical learning environment influenced those participants who did seek feedback. Most reported that it is difficult to seek feedback when radiographers are busy with clinical work.

I do not seek for feedback when not given to me due to the nature of the clinical environment – if it is busy and does not allow, I let it be. (Participant 9)

A busy clinical learning environment can be a barrier in terms of students seeking feedback and their learning process.

Sub-theme 2: reflecting practices on feedback

Two participants reported reflecting on feedback performance given by their supervising radiographers as it gives them the ability to understand their strengths and weaknesses. When asked about their reflecting behaviours one participant stated the following.

I do translate improvement into habit hence I do reflect on feedback to correct myself. Reflecting on feedback makes me feel part of the world and helps me to see where I went wrong and improve next time. (Participant 8)

One of them also reported that reflection provides serious thought about feedback and promotes growth. The remaining eight participants were not able to give any reason for not reflecting on feedback given during clinical practice.

THEME 4: suggestions on how to further enhance the students' knowledge, attitudes and practices regarding feedback on clinical performance

This theme pertained to question 4 in Table 2. All of the participants (n=10) made suggestions on how to further enhance students' knowledge, attitudes and prac-

tices regarding feedback on clinical performance. Some suggestions were however outside the scope of this study. The main suggestion clearly underscored educating students on the theoretical component of giving and receiving feedback. This was best suggested by participant 7.

I understand that feedback is important in my learning process, but I have not been taught the best ways of getting feedback on my performance. I would like someone to teach me theory on the principles of feedback, so that I can use the knowledge to apply it, in class and clinical area. (Participant 7)

Acquiring knowledge could lead to improvement in the reflecting behaviours of students on feedback given during their clinical practice.

DISCUSSION

The results of this study revealed that the understanding of students (participants) about the principles of feedback was below average. They exhibited both positive and negative attitudes towards feedback. A few sought and reflected on feedback given by their supervising radiographers.

• Knowledge regarding principles of feedback on clinical performance

The Oxford English Dictionary^[15] defines knowledge as facts and information acquired through experience or education; the theoretical understanding of a subject. In this study it pertained to the theoretical understanding of principles of giving and receiving feedback. The knowledge of the student radiographers (participants) on the principles of feedback was below average; not all managed to understand all four principles of feedback identified during interviews: feedback should be balanced, feedback should be timely and frequent, feedback should be offered in private, and clear and specific. The participants also did not identify other principles of feedback reported in the literature. It should be a two-way discussion, part of an institutional culture, based on direct observation, invite self-assessment, planned and recorded.^[3,4,6] This finding is similar to a study by Jothi and Yusoff^[16]; medical students had an average level of knowledge on the principles of feedback. This is not

surprising because the focus on this subject was primarily centred on educators and classroom, and less on students and clinical learning environment. Algirai-gri^[17] suggests that students need to be empowered with knowledge on feedback principles to compensate for the less than ideal feedback delivery due to a busy clinical learning environment.

The first principle identified in this study was that feedback should be balanced. Seven of the participants understood that effective feedback should contain both positive and negative comments. This is in conformity with AlHaqwi's^[18] study, where most medical students (90%) indicated that constructive feedback should have points about good and poor performances. Positive comments result in students feeling at ease and this encourages them to engage more with clinical work; negative comments help them to identify their weak areas that need improvement.^[3,6] Radiographers should therefore give balanced feedback to student radiographers by using the Pendleton feedback approach that focuses on student-centred learning. This means that students should take a proactive approach in contributing to their own clinical learning.^[1] Pendleton's model is used to deliver balanced feedback by highlighting positive behaviours first by a student then reinforced by an educator, followed by a student stating what could have been done differently and reinforced by an educator.^[7,19] In other words effective feedback is given to students in order for them to improve their learning experiences.

The second principle identified in this study was that feedback should be timely and a regular occurrence. Only two of the participants identified and understood that feedback is more effective to students when it is received immediately following an encounter. In a survey by AlHaqwi^[18] most medical students (80%) indicated that they did not receive timely and regular feedback. According to Ramani and Krackov^[19] clinical educators should provide feedback as soon as possible after an encounter so that a student has enough time to act. One interpretation as to why feedback is not given on time or frequently could be due to a lack of available time and poor awareness amongst clinical educators. Therefore, an understanding of this principle is

essential by students; if feedback is delayed or not given at all, they can seek for it to enhance their learning experiences.

The third principle identified during the interviews was that feedback should be given in private. Providing feedback in a private environment gives reassurance that there will not be any disturbance.^[19] Moreover, in a private setting a student will feel relaxed and comfortable enough to discuss sensitive issues especially in relation to poor performance.^[4] It should be mentioned that it is difficult for students to open up if feedback is given in front of others. In other words radiographers should choose a private setting when giving summative feedback to students on their performance.

The last principle identified by the participants was that feedback should be clear and specific. In a UK study by Fowler and Wilford,^[8] student radiographers complained about the general feedback received from radiographers during their clinical placements, which did not enhance their learning process. A general comment like 'well done' does not really help students to improve on performance.^[7] When feedback is clear and specific it addresses critical elements of focus which should assist students to know where to base their attention, improve their performance and guide their future learning.^[6] This means that a supervising radiographer should explain to a student radiographer what the learner did or did not do to meet the expectations on their clinical performance. The understanding of this principle should enable students to probe deeper and find out the actual feedback details by asking specific questions when provided with general comments.

• Attitudes regarding feedback on clinical performance

An attitude is a settled way of thinking or feeling about something.^[15] In this study it pertained to liking or disliking feedback on clinical performance. The findings of this study were that feedback can be delivered individually and in groups. Students had mixed views on these two methods of delivering feedback.

Six participants liked individualised feedback as it allowed them to learn their individual shortcomings in the clinical

area. This finding is in keeping with that of Haiden and Laidlaw^[3] who advise clinical educators to provide individualised teaching because students have different personal needs, capabilities, motivations and learning styles. The minority of participants liked group feedback as it gave them the opportunity to learn from others. Clinical educators can also give group feedback in view of time constraints. Lack of time is well documented in the literature as a feedback barrier.^[4,8] It can be concluded that both methods of delivery of feedback have advantages and disadvantages. Clinical educators should therefore choose the most suitable method depending on the circumstance and available time. Most importantly a method should be selected that can enhance students' learning experiences.

This study also revealed that feedback can be provided in two formats: verbal and written. The participants had mixed views on these two formats of giving feedback on clinical performance. Four of them liked verbal feedback because it allowed them to quickly correct their mistakes. This finding is in keeping with the findings of a study by Fowler and Wilford;^[8] verbal feedback provides instant information to students. It provides a complete understanding of the communication delivered as there is a chance to clarify issues immediately. Written feedback was preferred by the other six participants; it provides a permanent record for future reference. Clinical educators have complained that written feedback is difficult to give in a busy clinical area because it is time consuming.^[20] Both verbal and written feedback offer advantages and disadvantages. Clinical educators should, therefore, use the most suitable method to deliver effective feedback that can enhance students' learning process.

• Practices regarding feedback on clinical performance

Practice, according to the Oxford English Dictionary,^[15] is the actual application of theory. In this study it referred to the application of principles of feedback by students through seeking and reflecting on feedback on their clinical performance. The participants identified seeking and reflecting on feedback. Four sought feedback on their clinical performance. Of concern is that this was not done by

all participants. Literature shows that students who seek feedback tend to do better in clinical performance.^[19,21] Not seeking feedback can thus hinder students' learning process. Only two participants reflected on feedback given by their supervising radiographers. It is of concern that not all did so; reflecting on feedback promotes personal and professional growth and development.^[4] Reflection can assist students to process negative feedback and permit them to implement developmental strategies.^[22] In order to overcome this challenge, student radiographers should be made aware during pre-clinical training that seeking and reflecting on feedback on clinical performance is their responsibility. Clinical educators should also give time to students to reflect on feedback during clinical practice.

• Suggestions on how to further enhance the students' knowledge, attitudes and practices regarding feedback on clinical performance

Integration of theory of the principles of giving and receiving feedback into pre-clinical subjects was the main strategy identified in the study. Contento^[23] found that there is a positive relationship between knowledge, attitudes and practices. Knowledge is acquired through education and experience.^[15] Based on the findings of this study, it is argued that when student radiographers acquire knowledge on the principles of feedback, their attitudes towards feedback is expected to change; changes in attitude should lead to changes in their seeking and reflecting behaviours on feedback.

LIMITATIONS OF THE STUDY

Although this study provided important information about the knowledge, attitudes and practices of student radiographers regarding feedback on clinical performance, the results cannot be generalised as it was conducted at one site using a small sample. It is recommended that a cross-sectional survey, using a quantitative approach with a large sample, should be conducted to include all three schools of radiography in Zambia.

CONCLUSION

The knowledge of student radiographers regarding principles of feedback was below average. Students had difficulties

in identifying the principles of feedback. None knew all principles of feedback identified in this study. They also failed to identify other principles of giving and receiving feedback on performance. Generally, they had positive attitudes towards feedback, but most of them did not seek and reflect on feedback given by their supervising radiographers. It is therefore recommended that the principles of feedback be integrated in the pre-clinical subjects of the undergraduate radiography course or that an interventional feedback

programme be developed and provided to help students acquire knowledge on this subject.

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CONFLICT OF INTEREST STATEMENT

None.

CONTRIBUTIONS OF AUTHORS

RMK conducted the study. OB provided academic support through consultations and assisted in the editing of the manuscript in preparation for publication.

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