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Exploration of reflective practice among final year radiography students during rural placement in Northern Namibia

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Abstract

Purpose: Radiography students are required to integrate theoretical knowledge learned in the classroom to clinical practice in order to improve their clinical skills and decision-making as well as enhance learning. The incorporation of reflective practice is perceived as a vital tool in enhancing students' understanding of taught concepts. The documentation of events and ideas for later reflection allows for self-discovery and improvement of practice.

Objective: To explore and describe reflective practice among final year radiography students during their rural clinical placement.

Methodology: Qualitative and directed content analysis were used to evaluate the reflective journals of all ten final year radiography students placed at a rural state hospital in Namibia. The students reflected over a period of ten days.

Results: Four themes emerged from the study: theory-practice gap, professional growth, communication, and positive learning environment.

Conclusion: The students reflected more 'on action' than 'in action' and became self-aware and confident thereby increasing their clinical competency.

Keywords theory-practice gap, reflective journal, self-awareness, clinical practice, skills

INTRODUCTION

The incorporation of reflective practice is perceived as a vital tool in enhancing students' understanding of taught concepts.[1] Amulya[2] describes reflection as an active process of witnessing one's experience in order to take a closer look at it; to direct attention to it briefly or explore it in greater depth. "Reflective practice… involves thinking about and critically analysing one's actions with the goal of improving one's professional practice. Engaging in reflective practice requires individuals to assume the perspective of an external observer in order to identify the assumptions and feelings underlying their practice and then to speculate about how these assumptions and feelings affect practice."[3] Radiographers are continuously engaged in informal undocumented reflection when they make daily decisions in practice such as the size of the image receptor to be used, exposure factors and adaptation of radiography techniques to demonstrate anatomy and pathologies. Baird[4] cites this state of practice as a non-learning situation; it may not change practice as practitioners are not aware of their thought process. Since radiographers work with continuously advancing technology, reflective practice can be a tool to inform and improve their knowledge and skills in the current trends in their profession.

The University of Namibia offers a four year degree programme in radiography. This includes 2500 hours of experiential learning that must be completed upon graduation. As such, radiography students are placed in accredited urban and rural training hospitals for experiential learning in order to become professionally mature and competent radiographers. Currently, allocation to the rural setting is limited to the final year students for a period of three weeks. During this placement, students are expected to improve their clinical competencies, develop independent critical thinking skills and become confident leaders in the profession as they reflect on their experiences. According to Massarweh[5], such placements provide opportunities to apply the theory to practice, and foster problem-solving and decision-making skills, collaboration with others and development of legal and ethical morals. The documentation of events and ideas for later reflection allows for self-discovery as well as improvement of practice. This research was done as part of completion of a postgraduate diploma in higher education. It sought to explore and describe the effect of reflective practice among fourth year radiography students during their rural placement.

METHODOLOGY

This study was conducted in 2016 and used a qualitative and directed content analysis to evaluate the reflective journals of all ten final year radiography students (participants) who were placed at a rural state hospital in Namibia. The questions on which the students reflected were developed by the researchers, and reviewed by the supervisor, in order to enhance content validity. These reflective journals were completed daily for a period of ten days. The focus of the study was embedded in the research question: What is the effect of reflective practice on students placed at a rural hospital?

Ten reflective journals were analysed using Tesch's[6] method of analysis. Two researchers were each allocated five journals which they read and re-read in order to gain understanding and familiarise themselves with the data set, as well as develop codes for the data. The journals were then exchanged for further coding until data saturation was reached. These codes were then discussed between the

researchers in order to assign the codes to themes and subthemes. This process allowed for verification, conformability and peer debriefing.[7] Qualitative content analysis was deemed complete when the researchers reached consensus on the themes. Dependability of the study was achieved by using the participants' own words as recorded in their reflective journals to support the themes.[8]

DATA COLLECTION

Participants were expected to complete a reflective journal on a daily basis for ten consecutive days. The participants responded to open-ended questions that elicited information, descriptions and feelings of their experience during clinical placement. Reflective practice is incorporated in rural placement as part of the programme therefore ethics clearance was not obtained from an ethics review board. However, permission was obtained from the chief radiographer at the placement site as well as the students to use their journal entries for research purposes. The reflective journals were coded to ensure anonymity and confidentiality.

RESULTS

Ten journals were analysed. The qualitative analysis resulted in four themes: theory-practice gap, professional growth, communication and positive learning environment as shown in Figure 1. Direct comments in the reflective journals are presented in italics.

• Theory-practice gap
The theory-practice gap has been defined as the discrepancy between what students acquire in the classroom and their experiences in the clinical setting,[9] which interferes with evidence based practice.[10] The theory-practice gap was observed in this study when students operated equipment different from those in the urban state hospitals such as the darkroom system, operating theatre radiography, ultrasound, nuclear medicine, and computed tomography. Though all these modalities are taught theoretically, students do not rotate in the nuclear medicine and ultrasound departments in Windhoek. With the adoption of computed radiography in the urban state hospitals, students lack hands on experience on the darkroom system.

Journal 3: *'Was excited to enter the dark room for the first time. I learned that the darkroom system*
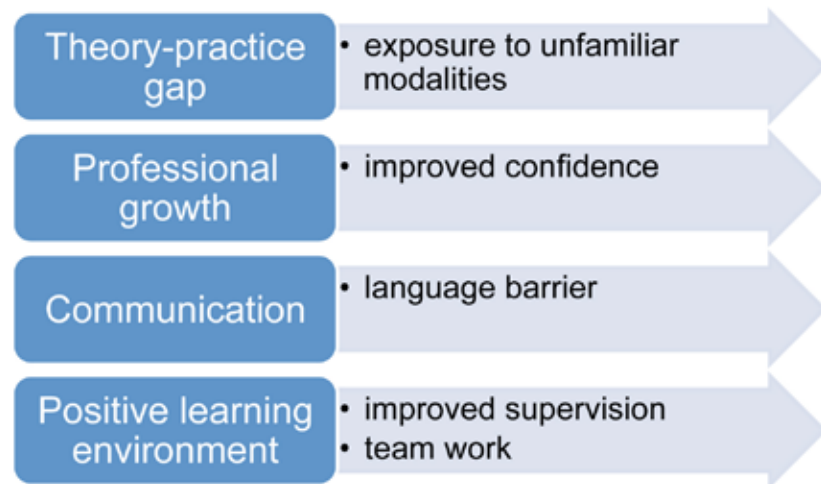

Figure 1. Themes and sub-themes.

is not complicated as I was taught in school. With the aid of the assistant radiographer, I managed to process one film of the chest successfully.'

Journal 1: *'I did not really do a lot as I spent the whole morning in theatre and since it was my first time, I had to wait to be told everything…'*

In medical education, the theory-practice gap continues to be a challenge as students are placed in clinical areas.[11-13] This gap is widened by failure to emphasise practical skills in the classroom, presence of complex clinical situations that differ from those described during didactic lectures, diverse clinical placement areas with differing protocols and practices, and students' abilities in achieving clinical competencies.[11] Approaches suggested to bridge the theory-practice gap include demonstrating the procedures in clinical simulation or skills laboratories and role playing, writing reflective journals where students reflect both 'in' and on' actions, incorporating case-based and task-based learning, aligning of anticipated learning with curricula,[13] as well as standardising of protocols for all clinical placement areas.

Journal 2: *'I felt like a first year because I couldn't even enter the patient and process the image. The equipment and technical factors are a challenge. I didn't do much, because I felt incompetent, I felt like this was a test of my knowledge'*

Students were able to identify areas where they lacked competencies and skills thereby improving the learning process and clinical competencies thereof. It is also important to orientate students on all equipment whilst they are placed in a different clinical environment.

• Professional growth
Writing reflective journals is attributed to assisting healthcare practitioners to monitor their practice as it promotes continuous professional development (CPD), lifelong learning as well as personal growth.[14] Professional growth involves development of a wide range of skills that enhance an individual's professional practices such as problem-solving, communication skills and teamwork.[15] In this study, professional growth was displayed by improved confidence and communication skills of the students. Initially, the rotation in the unfamiliar modalities raised feelings of confusion, insecurity and anxiety similar to those reported by Sen Gupta and colleagues.[16]

Journal 1: *'Felt confused at first though things became clearer… Felt awesome, it gets better everyday'* and *'I did not really do a lot as I spent the whole morning in theatre and since it was my first time, I had to wait to be told everything. It felt awesome being in theatre yet it is a scary feeling the same time'*

The feelings of anxiety soon subsided as unfamiliar tasks were repeatedly performed[17] thereby improving students' competencies and confidence. Edwards[18] found that placement of student nurses in

both rural and metropolitan clinical environments developed not only student competencies, but also satisfaction with their clinical experiences.

> Journal 3: *'I learned to be patient with senior citizens. Professionally, I can now operate a C-arm machine. Personally, I overcomed the fear of witnessing a live surgery'*

> Journal 10: *'I did another IVP today. It didn't take time as the doctor here request the procedure to last up to 30 minutes. I did it myself while a radiographer observed…'*

In contrast to Mifsud et al's study,[19] where students felt bored due to non-involvement in the departmental tasks, the students in our study were involved in departmental tasks and they were allowed to work independently while the radiographers observed. This created a sense of responsibility and accountability as they felt part of the team. In so doing, the students learned and challenged themselves to perform better in the initially unfamiliar tasks.[14]

> Journal 6: *'I felt very appreciated and welcomed to the place'*

> Journal 9: *'Growing here is faster… because people here are willing to teach and we work on a really acceptable pace'*

> Journal 8: *'Closer bond with the qualified radiographers, more respect involved among us'*

• Communication

Communication is a complex process which can be multi-factorial and multi-dimensional. For effective communication to take place, the sender and receiver of a message should have the same level of understanding of the intended communication. In a healthcare setting, effective communication improves patient care, the patient-practitioner relationship, as well as the treatment outcomes. Despite this, language and communication barriers may arise as healthcare professionals provide services to patients from multi-ethnic backgrounds. Linguistic differences between patients and healthcare professionals are reported to cause ineffective and inequitable patient care, psychological stress among patients as well as patient treatment and management errors.[20-23] Language and cultural barriers were found

to hinder parents' effective participation in their children's health,[24] while healthcare professionals felt that their abilities to provide empathetic care, effective counselling and patient education were reduced with the existence of language barriers,[25] thereby causing insecurities whilst engaging with patients.[21]

In radiography, existence of language barriers may result in non-compliance to the procedure, increased radiation dose to the patient when the radiographic images are repeated due to failure in complying with instructions such as suspended respiration on inspiration during chest radiography. There may also be increased risk of medico-legal issues, for example, reaction to contrast media due to failure in obtaining clear patient history.

English is the medium of instruction for the radiography programme at the University of Namibia. In northern Namibia, the majority of the patients speak the native language "oshivambo." Language barrier was experienced by some students, which made it difficult to perform certain procedures even if they knew how; while others were comfortable with the language.

> Journal 7: *'The language barrier was experienced by 90% of patients…The language barrier is definitely a problem, as this prevents a radiographer to explain the procedure to full potential'*

> Journal 4: *'Today, there was a big number of matured people (elder group). This is rather difficult on language barrier basis as well as difficulty in performing erect examinations'*

> Journal 6: *'Patients were okay because they are my language'*

During the first year of training, radiography students are taught various communication techniques that can be adopted in language barrier scenarios such as use of interpreters, pantomimic techniques and compilation of native language manuals of common words pertaining to radiography procedures to assist them while establishing rapport with the patient. Scott[26] proposed that healthcare professions must acquire the prevalent cultural vocabulary and cultural and linguistics' training. The challenges of using interpreters are documented in literature.[21] These include interpreters creating barriers to communication rather than facilitation,

patients withholding certain information when an interpreter is a stranger and failure of a family member to relay the correct information due to lack of knowledge and training when playing the role of an interpreter.

• Positive learning environment

Clinical education is a major component of radiography education. Radiography students are placed in a clinical setting to integrate theory into practice for better clinical learning outcomes. Furthermore, clinical placement is perceived to influence the acquisition of students' attitudes, psychomotor skills, knowledge and problem-solving abilities.[27] In this study, a positive learning environment was created by direct supervision and teamwork within the clinical placement area.

> Journal 9: *'I learned a lot from exams I usually performed because we had an opportunity to interact with the radiologist one on one'. I could ask questions and get clearity as soon as possible'*

> Journal 10: *'I did another IVP today. It didn't take time as the doctor here request the procedure to last up to 30 minutes. I did it myself while a radiographer observed…'*

It is a requirement of the Health Professions Council of Namibia (HPCNA) that student radiographers are supervised at all times during their clinical placements. In this study, radiographers and radiologists supervised and provided feedback to the students during radiological procedures. Students' knowledge and skills are enhanced when feedback is provided in a timely manner. Andrews et al[28] found that students valued staff that acted as mentors. Even though these were senior students, they still required supervision as they were faced with varying clinical situations that provided learning opportunities. Qualified staff should treat students with kindness and understanding as this establishes caring relationships that are fundamental in creating conducive student learning environments.[29]

LIMITATIONS

The study was limited to final year radiography at the University of Namibia. The results can therefore not be generalised to other radiography students. The questions in the journals were pre-determined

by the researchers and this could have affected the students' level of reflection.

CONCLUSION

This study explored reflection among final year radiography students on rural placement in northern Namibia where students reflected more 'on action' than 'in action'. The students reported a theory-practice gap, language barrier, improved confidence, and a positive learning environment. The process of reflection allowed the students to become self-aware and confident thereby increasing their clinical competency. Kolb and Kolb[30] stated that reflection develops autonomous, critical and advanced practitioners; a trend that was observed in this study.

RECOMMENDATIONS

There is need to apply reflective practice to all cohorts in the radiography programme. Lecturers should find ways of measuring reflective learning in order to make it part of teaching and learning as well as encourage students to participate in reflective journal writing. This may encourage students to evaluate their own performance, identify their strengths and own learning needs thereby fostering a sense of responsibility and accountability.

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CONFLICT OF INTEREST

None

CONTRIBUTIONS OF ALL AUTHORS

ERD and CN conceptualised the study and carried out the research project. NM was responsible for supervision of the project and provided guidance in the interpretation of the results. ERD, CN, NM edited the manuscript in preparation for publication.

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