

Competency-based education for training of diagnostic radiographers in percutaneous nephrolithotomy procedure in the operating theatre – An initial experience

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Introduction

Failures in interprofessional working are established cause of medical error and negative health outcomes. Percutaneous nephrolithotomy (PCNL) is performed in the Operating Theatre (OT) by a combined urologist-radiographer team. Urologists tend to have different variations of techniques for PCNL and this can be stressful for radiographers who are new to the environment. It is a well-known fact that newly qualified diagnostic radiographers find working in the operating theatre most challenging and their lack of confidence in the operating theatre will therefore inhibit interprofessional working¹. Ad-hoc apprenticeship learning style is perceived to remain prominent in the OT though it has its challenges and limitations. Competency-based education could supplement the apprenticeship as it will provide radiographers the necessary knowledge to increase their confidence level. The aim of this study was to develop and examine the effectiveness of a pilot competency-based tutorial. Findings from this study may help to also identify weaknesses, highlight important educational needs and provide evidence for the development of the preceptor course².

Methods

A focus group was held to identify the challenges faced and competencies required by the radiographers working in the Urology OT. Findings from the focus group influenced the content for the competency-based tutorial. Two tutorials were conducted over a period of one month to include all new radiographers rostered to the urology OT. The same facilitator was involved in conducting of the sessions.

A total of 12 new radiographers were selected to sit through the tutorials that was conducted in two separate sessions over a period of one month. An online pre and post self-assessment of the participants' practical knowledge and gauge of their confidence levels was administered to all participants at the start and end of each tutorial session. Both the pre and post assessments were conducted using Microsoft Forms³ (Figure 1). A reminder for the completion of the post assessment was sent out a week after the end of the tutorials.

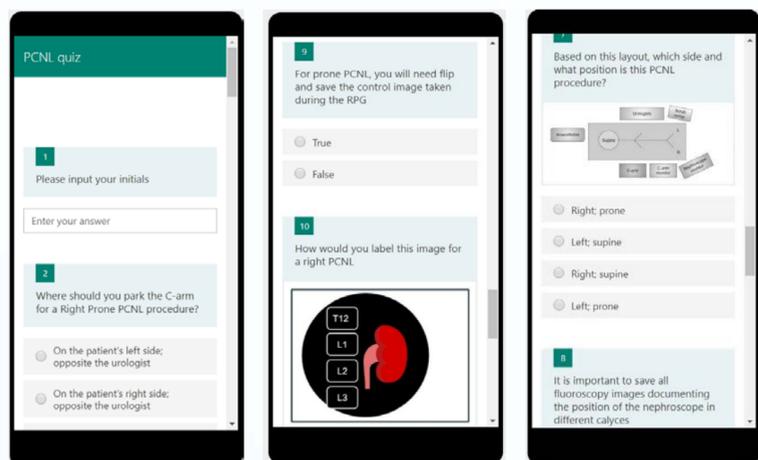


Fig. 1 Screenshots of the online post-tutorial self assessment

Results

To determine if there was a gain in knowledge by the participants, questions from the post assessment were categorised into categories that assessed practical knowledge, confidence level, and the degree of preparedness. Due to the small sample size, comparison was based on the mean percentage from each category calculated.

All 12 radiographers completed the pre-session self-assessment. A total of 92% (n=11) reported an increase in practical knowledge (Figure 2) and 83% (n=10) felt more confident (Figure 3) in supporting the urologists in PCNL procedures. All radiographers (n=12, 100%) agreed that the tutorial was beneficial in preparing them to work in the OT. Most of the radiographers indicated that simulation should be conducted in the future to reinforce learning and that it would be helpful and substantial in further improving their competence and confidence (n=7, 59%).

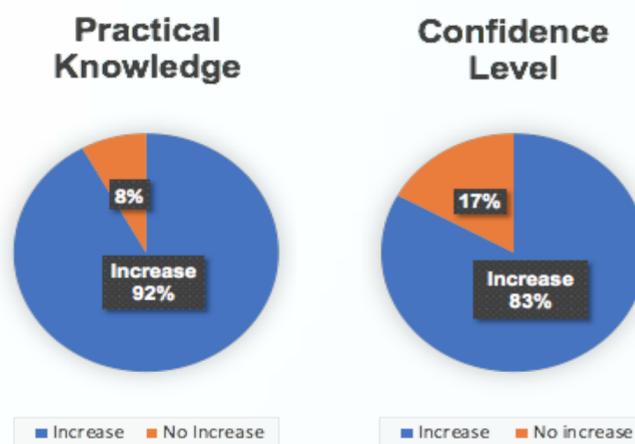


Fig 2. Practical Knowledge gained post education

Fig 3. Confidence gained post education

Conclusion

A competency-based education has significantly improved the radiographers' knowledge and confidence in supporting urologists in PCNL procedures. It was received positively by the radiographers and could aid in preparing them in the operating theatre with transferable as well as radiographer-specific skills. Though apprenticeship learning style was still valued by radiographers, there was evidence indicating that competency-based education could be useful in complementing apprenticeship learning style as it help to develop competent and confident OT radiographers. This study could be further developed more holistically by incorporating a simulation component to the competency-based education to help visual and kinesthetic learners.

References

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