

Improvement in Patient Radiation Dose Exposure during Fluoroscopy in Northwest Malaysia: A Unicentric Action Research

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ABSTRACT

Introduction: Excessive radiation dose may be inadvertently delivered by radiology personnel during radiological procedures. This is an action research aimed to improve radiological personnel's performance and awareness on proper fluoroscopy technique and radiation dose delivery through the establishment of multimodal transformation strategies. **Methods:** The study involved three phases: Phase I (Pre-intervention) involved a mixed-method analysis to determine the prevalence of excessive radiation exposure during fluoroscopy and to assess the level of knowledge, awareness and practice among radiological personnel on proper fluoroscopy technique. The qualitative part involved a single interview session with 12 personnel on their opinion and regular practice with regards to fluoroscopy procedure. Results were thematically analyzed. The quantitative part involved distribution of questionnaires assessing the knowledge, awareness and practice to 33 staff; Phase II (Intervention) were carried out through regular monitoring and teaching sessions, followed by Phase III (Post-intervention) where re-assessment of knowledge, awareness and practice were performed. Results: We found that the prevalence of excessive radiation dose delivery was 23% prior to intervention, contributed by the lack of knowledge and training. Data analysis following our interventional program showed improvement in clinical radiation dose delivery (10% vs. 23%), and improvement in the scores for the knowledge ($p < 0.001$), awareness ($p = 0.025$) and practice ($p < 0.001$) during fluoroscopy procedure. **Conclusion:** Our findings highlight the importance of preserving the safety of medical imaging in providing optimal service delivery. We would like to recommend our interventional program to be replicated at other healthcare centres to allow better patient outcome.

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Competency of Standard Precaution Among Registered Nurses at Medical, Surgical and Orthopedik Department in Hospital Pakar Sultanah Fatimah

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ABSTRACT

Introduction: Standard precautions are important in protecting patients, healthcare professionals and nurses from occupational exposure as well as ensure patient safety. The objective was to evaluate the competency of knowledge and practice of standard precautions among registered nurses in Hospital Pakar Sultanah Fatimah, Malaysia. **Methods:** A prospective, cross-sectional design was carried out with a self-administered questionnaire using universal sampling method involving the 139 registered nurses working in the Medical, Surgical and Orthopaedic departments in Hospital Pakar Sultanah Fatimah, Malaysia. SPSS version 22 was used to describe the study outcome. **Results:** Overall the nurses were aged with a mean of 31 years, 6(4.3%), have a degree in 133(95.7%) post basic course. They demonstrated better knowledge of the standard precautions. The two lower items of the level knowledge included "hand washing with betadine solution after contact with bloody fluid or infectious substances" 136(97.8%) and "wear protective mask during aerosolized procedure and handling patients in isolation" 137(98.7%). The three highest practice standard precautions were never recap needles after use before disposing, frequent hand hygiene when in contact with bloody fluids of patients, secretion and decontamination; and sweeper should wear gloves and gowns. There was a low and positive or direct correlation between level education and experience years as nurse ($P < 0.005$, $r = 0.238$). **Conclusion:** In this study, nurses had a better knowledge and good practices compliance regarding of the Standard precautions. Education of the standard precaution is good.