

RADIOPROTECTION IN ORTHOPAEDIC THEATRE IN TUNISIAN HOSPITAL

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INTRODUCTION

- Orthopaedic theater personnel (OTP) including surgeons and other operating room personnel, are exposed to ionising radiation by using X-ray image intensification.
- Over the past few years, the number and variety of orthopaedic surgical procedures utilizing fluoroscopic assistance have increased markedly.
- As a safe dose of radiation is uncertain, it is therefore sensible to keep radiation exposure as low as possible, regardless of safety regulations.

PURPOSE

The aim of this study was to determine OTP's knowledge about ionizing radiation risks and radiation protection in order to propose appropriate corrective measures.

MATERIALS AND METHODS

- The study was performed in an orthopaedic operating theater equipped with a mobile image intensifier unit in Charles Nicolle Hospital, in March 2010.
- We used a questionnaire in order to identify the knowledge about ionizing radiation (7 items), radiation protection (11 items), safety and security measures (15 items).
- We established a global score of knowledge to classify our population.

RESULTS

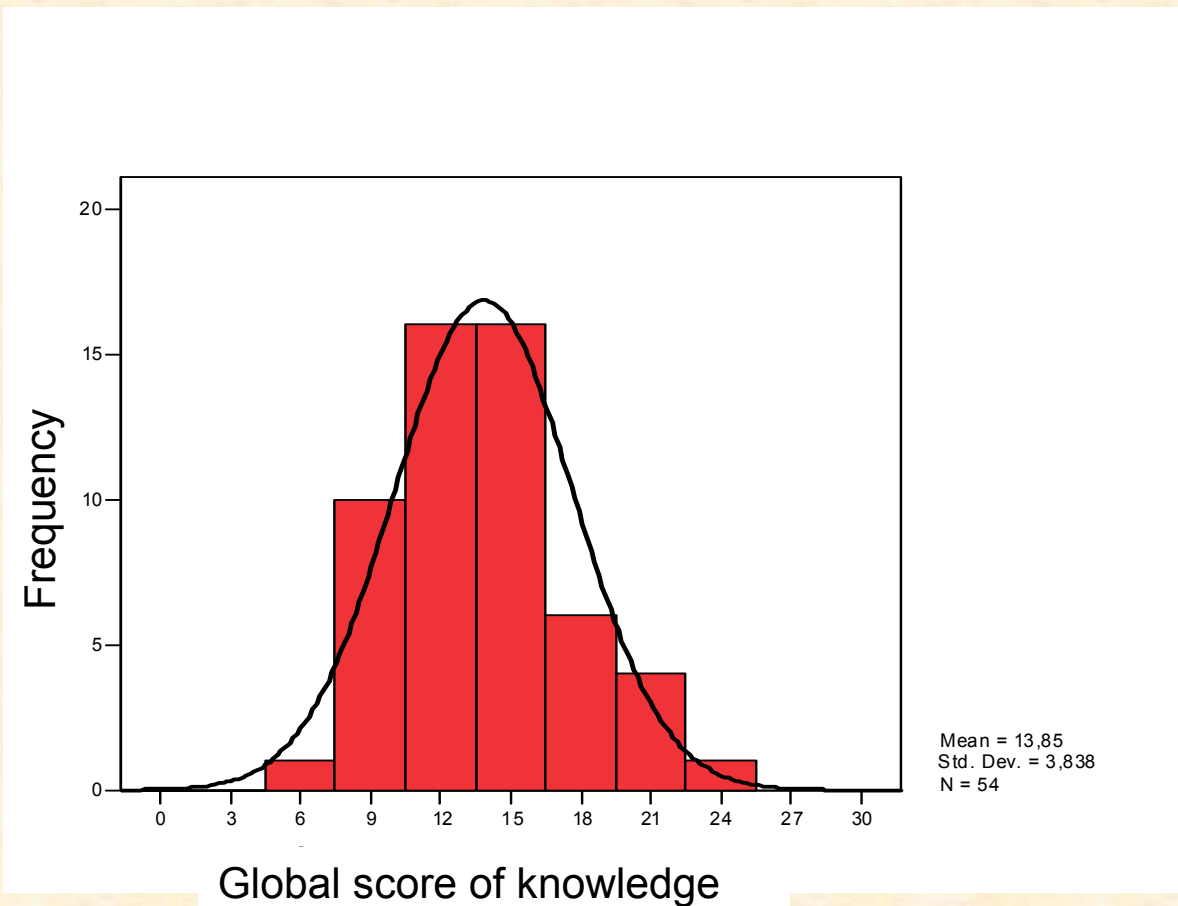
- 65 professionals were exposed to ionizing radiation.
- 54 of them (83%) answered to our questionnaire.
- 65% were men (sex ratio: 0,54).
- The median of the age was 32 years (23-51).
- The median duration of the exposure was 5 years (1-29).
- OTP were 35% surgeons, 32% nurses, 20% superior technicians and 13% service workers.

RESULTS

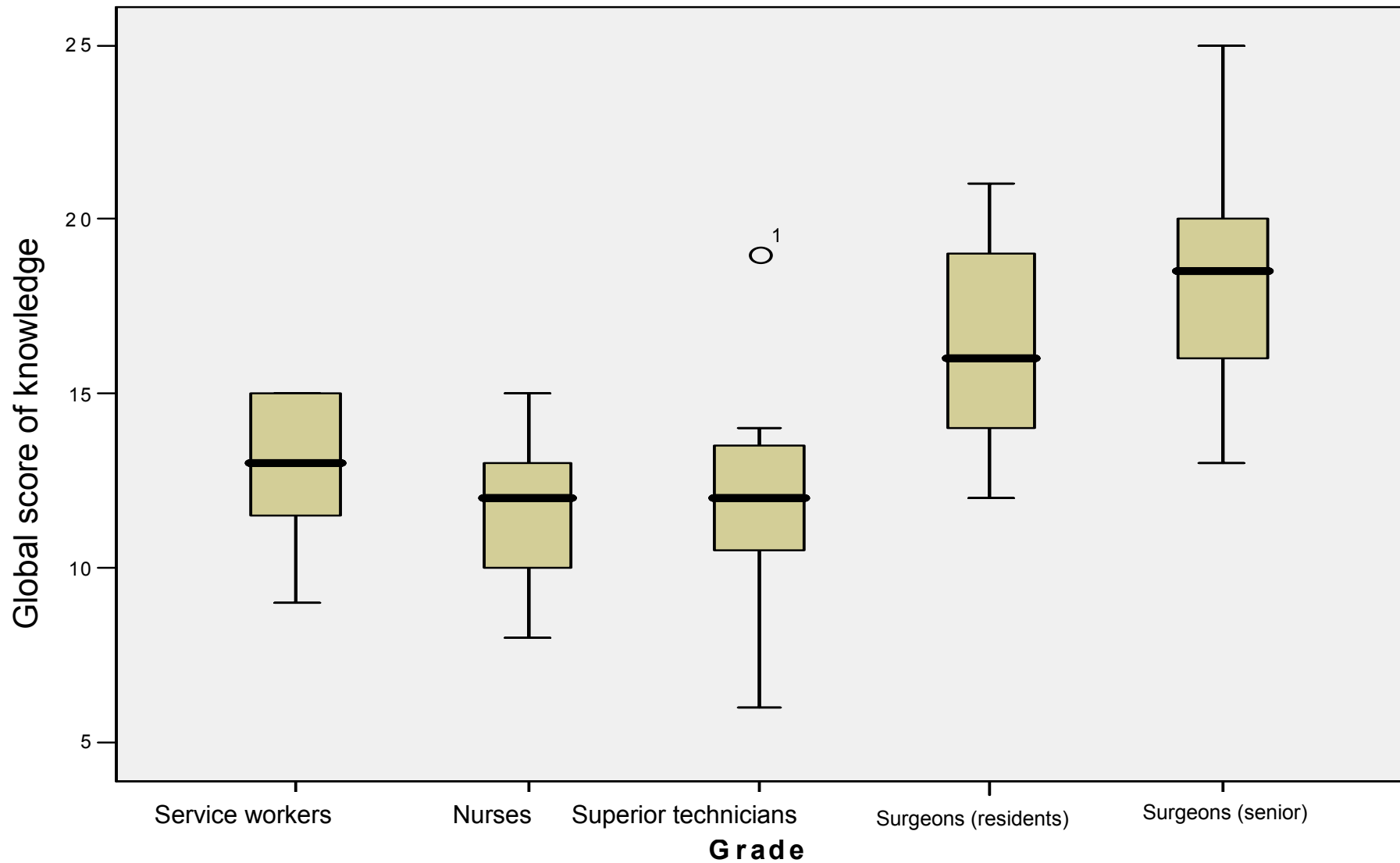
- 8 persons (15%) ignored ionising radiation nature of X-rays.
- 26 persons (48%) were unaware that they are exposed to ionising radiation in orthopaedic theatre.
- 28 persons (52%) ignored the recommended safety distance from the source.
- 52 persons (96%) ignored the annual dose limit for occupational radiation exposure .
- 36 persons (67%) ignored the X-ray monitoring by dosimeter.

RESULTS

- The mean of the global score of knowledge was 8,4/20 (3,6-15,2).



- This score increases significantly with grade (Kruskal-Wallis test, $P < 0.001$).



RESULTS

- In spite of the availability of lead aprons and thyroid shields, they were worn by 67% and 2% of the staff respectively.
- Because of lack of information about radiation protection, 50% of orthopaedic theatre personnel still stand near the patient during image intensifier operations.

CONCLUSION

- In the present study, the results indicate that for minimizing any unnecessary radiation, attempts should be made to improve orthopaedic theater personnel's knowledge about radiation protection.
- This study must be extended to all the public orthopaedic theatres in Tunisia.