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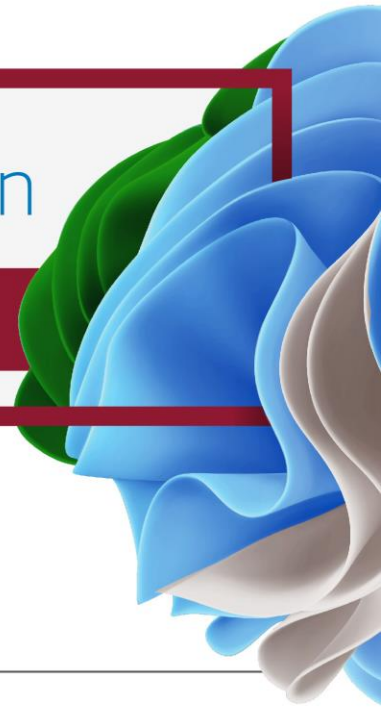

Healthcare Resilience in Extraordinary Times

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CONFLICT OF INTEREST

I Nahla k in this session has no conflict of interest or disclosure in relation to this presentation.

A STUDY ON PRACTICE AND AWARENESS OF RADIATION SAFETY AMONG HEALTHCARE WORKERS IN A TERTIARY CARE HOSPITAL

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CONTENTS

INTRODUCTION

- Radiation is energy that comes from a source and travels through space at the speed of light
- Exposure to radiation may lead to different health effects. The World Health Organization (WHO) has classified radiation as a carcinogen
- Radiation safety aims at reducing the unnecessary radiation exposure with a goal to minimize the harmful effects of ionizing radiation
- The awareness and knowledge about radiation safety among healthcare workers minimize the damage, optimizing the quality of images and safe use of ionizing radiation

NEED OF THE STUDY

- The use of ionizing radiation is a vital part of any hospital and surgical specialty for diagnosis and treatment of a variety of medical conditions.
- The radiation safety practices in radiology department as per the AERB guidelines ensures that the use of ionizing radiation does not cause undue risk to the health of patients and healthcare workers
- In order for the practices of radiation safety to be successfully implemented an appropriate safety culture must exist within the organization.

OBJECTIVES

- To assess the adherence to radiation safety practices as per the AERB guidelines
- To evaluate the knowledge among healthcare workers about radiation safety practices

METHODOLOGY

Study Design

❖Descriptive Study

Sample Size

❖Data was collected from 14 radiographers to assess compliance to radiation safety practices and data was collected from 83 participants to evaluate knowledge about radiation safety practices

Study participants

- The target population includes clinical staff, Para clinical staff, and students of radiation-related departments such as:

- Radiology - Doctors, technicians, technologists, nurses, interns
- Anesthesia - Doctors, technicians, technologists, nurses
- Cath lab – Technicians, nurses
- Operation theatre - Doctors, technicians, technologists, nurses

Source of data

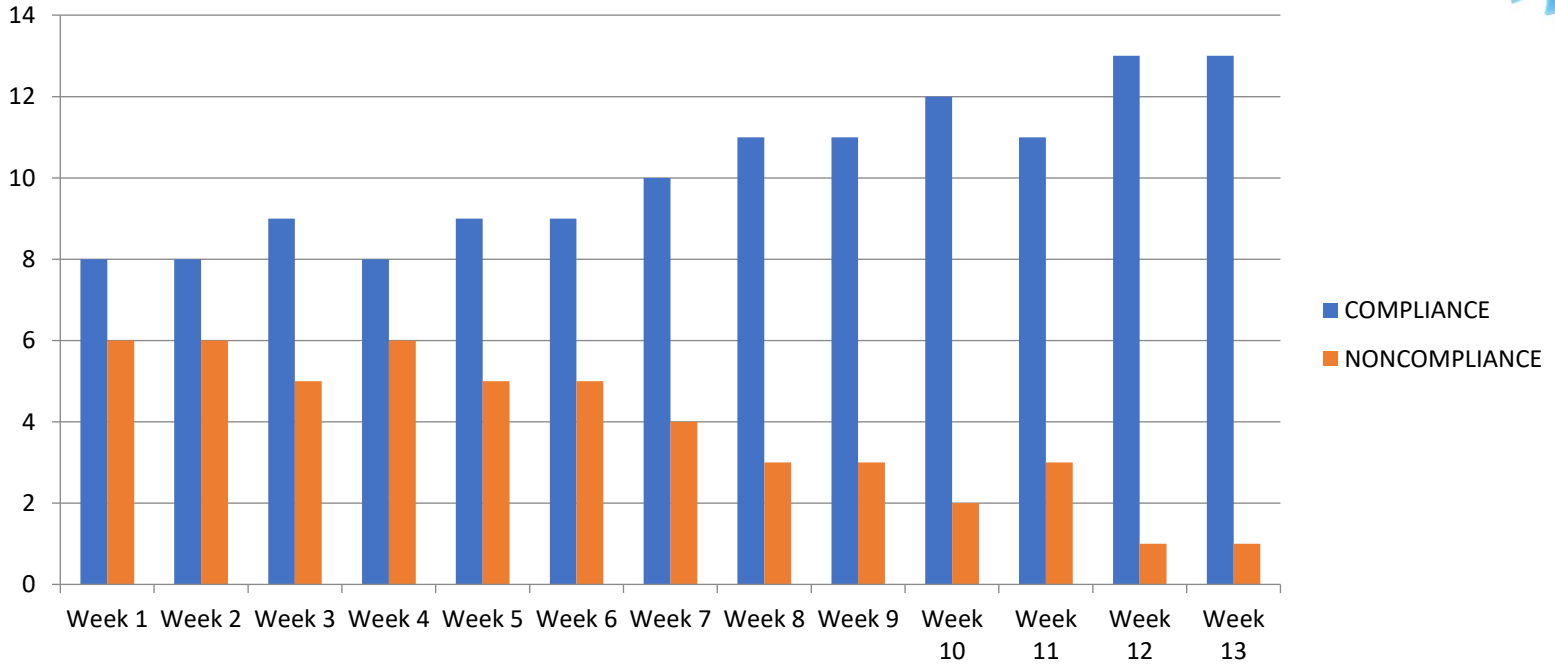
- Primary Data was collected through a self-administered questionnaire from the healthcare workers who are exposed to ionizing radiation
- Radiation safety practices as per the AERB guidelines was analyzed through direct observation by an observational checklist

Study period:

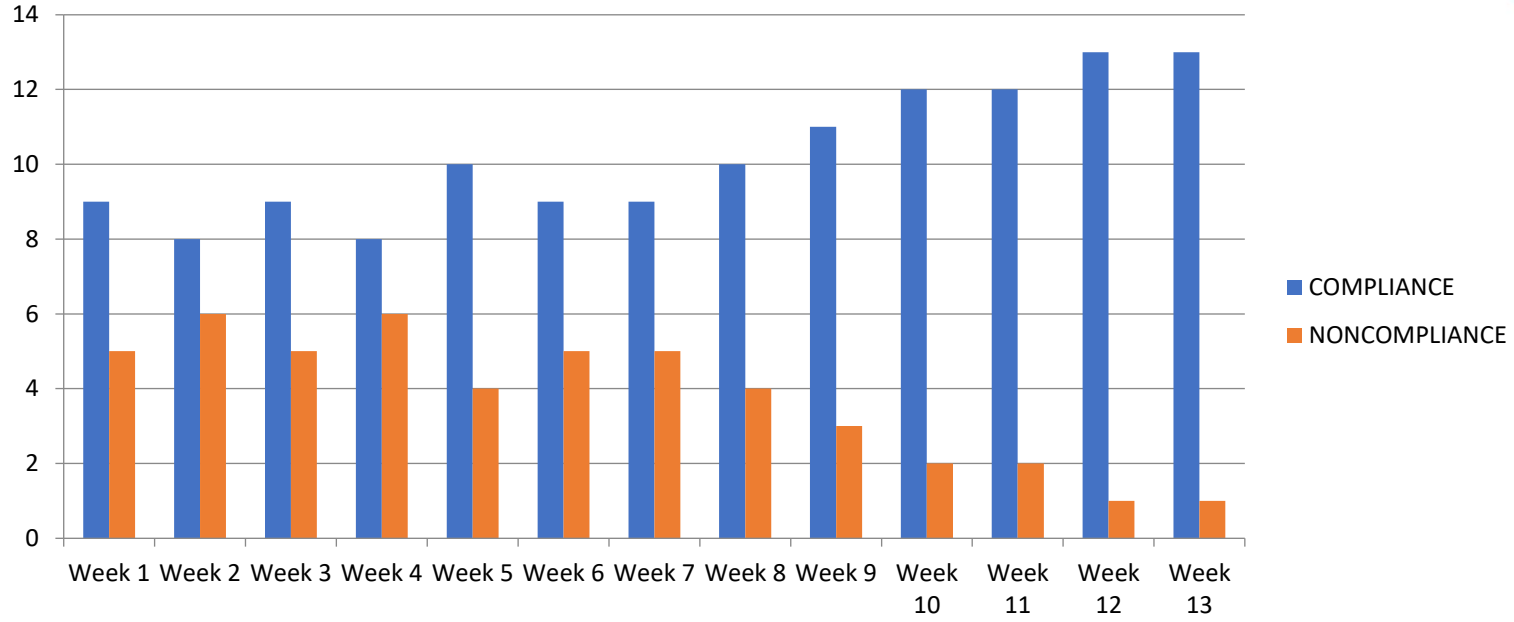
Data was collected from healthcare workers for a period of 3 months.

RESULTS

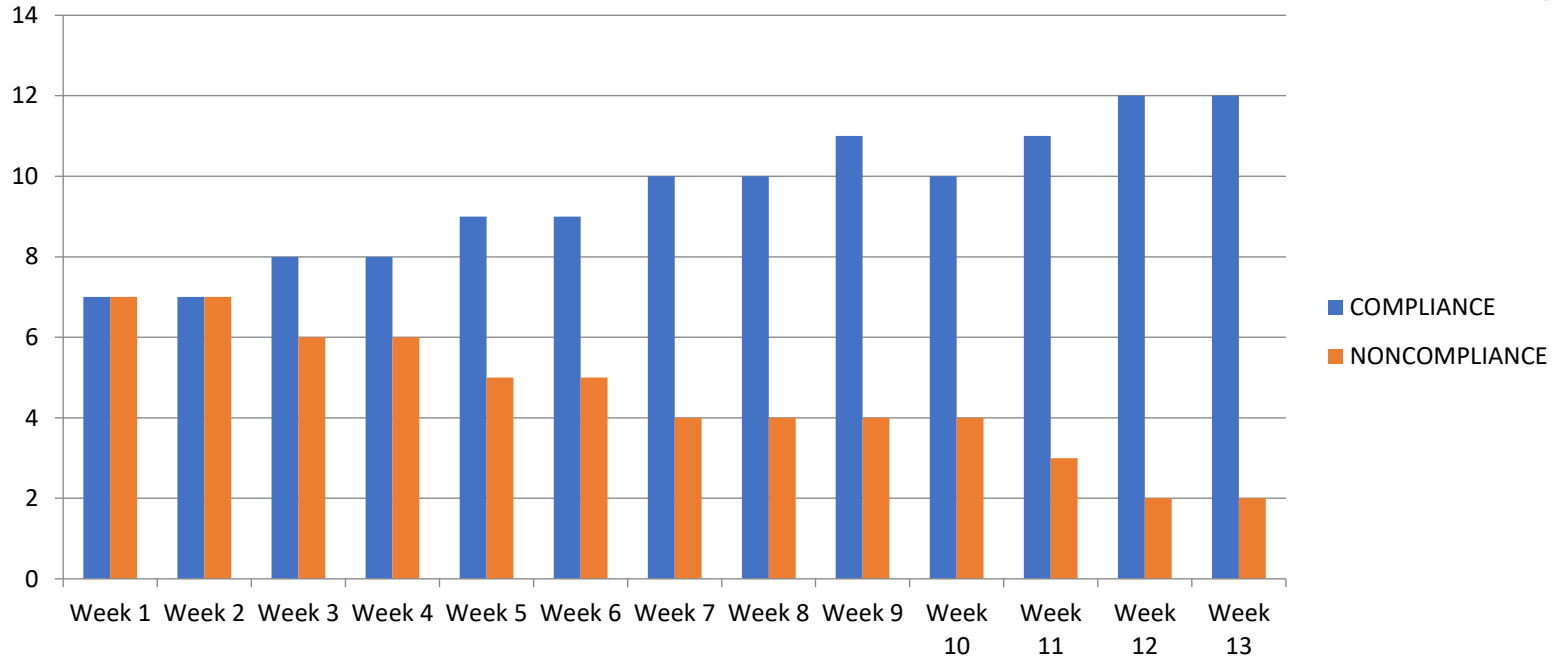
❖ **Do the radiation workers use appropriate exposure parameters for adults and Pediatric x-ray examinations?**



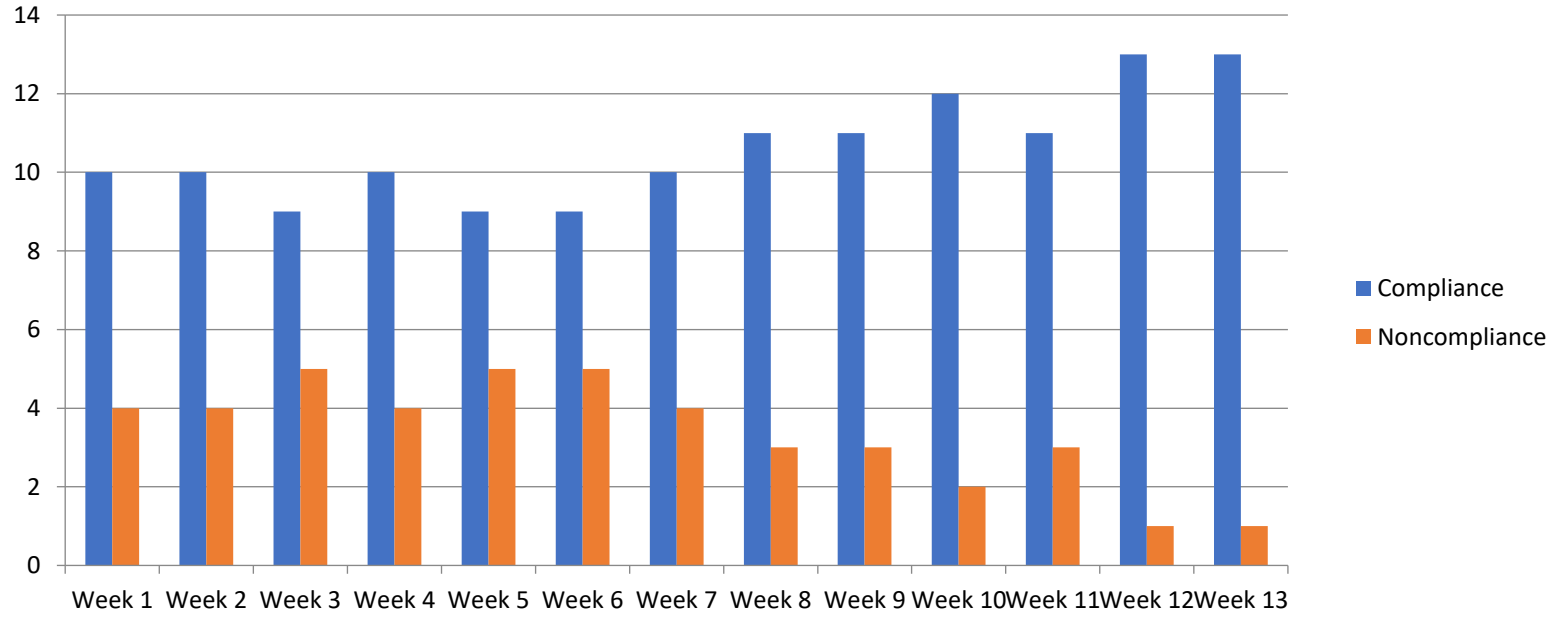
❖ **The radiation workers close the door while taking X ray**



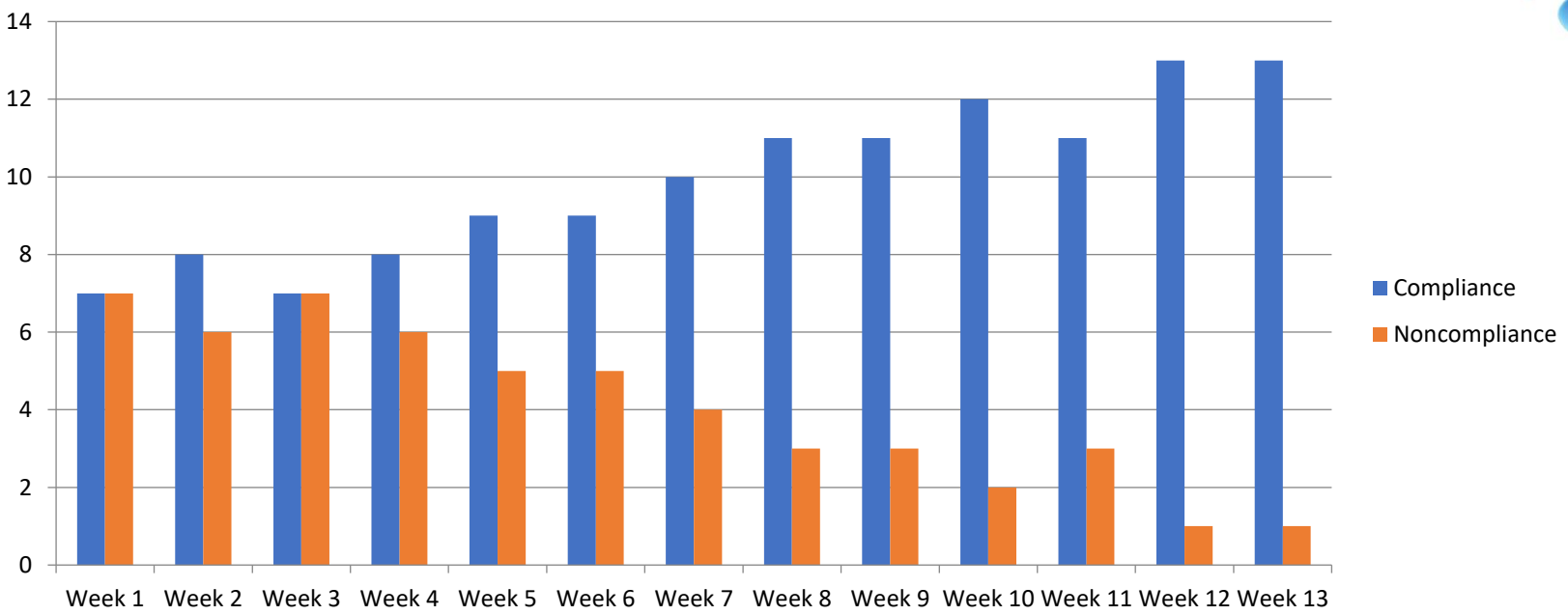
❖ **Do the radiation workers use the TLD badge during operation of X-ray equipment?**



❖ **Do the radiology workers stand behind the protective barrier while operating X-ray equipment?**



❖ **Do the radiation workers use the apron during operation of X-ray equipment?**



FINDINGS

- Total sample collected was 14 for the 3 months of period
- The diagrams illustrate the radiation safety practices compliance and noncompliance among radiographers
- The compliance of radiographers towards the safety precautions was low, with the target is at 100 %

DEMOGRAPHIC CHARACTERISTICS OF HEALTHCARE WORKERS

Characteristics	N	Category	Respondents (N)	Percentage (%)
GENDER	83	Male	45	54%
		female	38	46%
AGE	83	20-30	41	49%
		31-40	26	31%
		41-50	13	16%
		51-60	3	4%
DESIGNATION	83	Doctor	39	47%
		Nursing staff	11	13%
		Technologist	4	5%
		Technician	24	29%
		Intern	5	6%
DEPARTMENT	83	Radiology	40	48%
		O.T.	17	20%
		Anesthesia	19	22%
		Cath lab	7	9%

- In terms of gender characteristics, shows that males were in majority 54%
- Regarding the age group, the highest (49%) and lowest (4%) percentage of staff were 20 – 30 and 51 – 60 years old respectively
- In terms of designation 39 respondents were doctors, 11respondents were nurses, 24 respondents were technicians, 4 respondents were technologists, and 5 respondents were interns
- Regarding the department of respondents, the majority of staffs (48%) were from Radiology department and 9% of staffs were from Cath lab.

❖ KNOWLEDGE LEVEL OF HEALTHCARE WORKERS- DEPARTMENT WISE

Department	Respondents	Knowledge score	Knowledge score %	Knowledge level
Radiology	40	662/800	82.7%	Good
Operation theatre	17	226/340	66.4%	Fair
Anaesthesia	19	258/380	67.8%	Fair
Cath lab	7	43/140	30.7%	Poor

❖ According to the department, the radiology department's workers had good level of knowledge and the operation theatre and anesthesia department workers had fair level of knowledge and the Cath lab workers had poor knowledge regarding the radiation safety practices.

❖ KNOWLEDGE LEVEL OF HEALTHCARE WORKERS- DESIGNATION WISE

Health care workers	Knowledge score %	Knowledge level
Doctors	85.7%	Good
Nurses	26.8%	Poor
Technicians	65.6%	Fair
Radio technologists	90%	Good
Interns (MIT)	73%	Fair

- ❖ Among the healthcare workers, majority of the doctors (86%) and radio technologists (90%)have good knowledge regarding radiation safety practices, followed by Interns (73%), technicians (65.6.6%), and nurses(26.8%).

DISCUSSION

- The current study assessed the radiation safety knowledge and practices of healthcare workers in a tertiary care hospital. The primary aim of this study was to evaluate the practices, and the knowledge of radiation safety among health care workers

- The present study found that according to the categories of healthcare workers in the radiation related departments the nurses had very poor (26.8%) knowledge regarding the radiation safety practices.

➢ In a study among the nurses working in a radiology department in Kuwait carried out by **Alotaibi et al.,** it was found that most participants had no knowledge of radiation protection measures, and they were ignorant about the risks of radiation

➢ Lot of studies were conducted on radiation safety practices among radiation workers in the past decade but not much studies has been conducted in India regarding the radiation safety practice as per AERB guidelines. The present study found that the radiation workers had low practice of radiation safety as per AERB guideline

RECOMMENDATIONS

- ✓Regular monitoring and periodic inspection of radiation related departments should be done to ensure radiation safety regulations are followed

- ✓Radiation safety training will be helpful in increasing knowledge about radiation safety standards and practices

- ✓It should be ensure that training is provided for employees who are new to the organization. All employment training should be followed by an assessment that demonstrates competence in work process and procedure

- ✓Transferred employees from one section to another as well as any promoted staff member should undergo the applicable training of the newly assigned section and/or new job description

CONCLUSION

- The study aimed at assessing the practice and knowledge about radiation safety practices at our hospital
- The present findings revealed that, there was a high level of awareness about radiation safety practices among the healthcare workers in radiology department. However, an extremely high number of nursing staffs demonstrated inadequate knowledge about radiation safety practices
- It can be concluded that regular training programs should also be provided for other healthcare professionals who do not continuously work in a radiation environment but are still subject to radiation exposure.

THANK YOU