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A study to assess the knowledge regarding fire accidents among nurses working at Narayana Medical College Hospital, Nellore, Andhra Pradesh

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Abstract
Background: A fire accident is any situation in which there is a greater than normal risk of harm to people or property due to fire. Fire accidents can result in catastrophic personal injury and devastating damage. If fire occurs in a health care agency, the nurse protects clients from immediate injury, reports the exact location of the fire. The nurse should be aware of the fire protection practices and should be followed during the accidents.
Aim: The aim of the study was to assess the knowledge regarding fire accidents among nurses.
Objectives: To assess the knowledge regarding fire accidents among nurses. 2. To find the association between knowledge of nurses with demographic variables.
Methodology: 100 nurses working in NMCH, Nellore were selected by using probability simple random sampling method.
Results: Regarding the level of knowledge among nurses, 36(36%) were had good knowledge, 64(64%) were had adequate knowledge and none of them had poor knowledge regarding fire accidents.

Keywords: Knowledge, standard safety precautions, nursing students

Introduction

"Ounce of prevention is worth a pound of cure." - Benjamin Franklin

Fire can happen any time any place at home or at your workplace or in a hospital or in public places like theatres, malls etc. Fire risk survey (FRS) revealed that a fire has been rated as the 5th highest risk in industry in 2013. India has history of fire incidents, 20,377 fire accidents were reported in the country in 2014, which caused 19,513 deaths and injuries to 1,889 people. National Crime Records Bureau (NCRB) of the home ministry report showed that the maximum deaths in fire accidents in 2014 were reported from Maharashtra (3892) followed by Madhya Pradesh (2305), Gujarat (2011), Karnataka (1610), Tamil Nadu (1594), UP (1164), Chhattisgarh (1089) and Rajasthan (1034) [1].

Fire is a dominant hazard in the workplace. Human factors such as carelessness, negligence and lack of fire safety awareness are some of the leading causes of fire outbreaks. Despite the technological advancement in fire safety, fire remains the leading cause of lives and property loss at commercial and industrial facilities worldwide and fire could lead to the premature winding up of an organization no matter how big it is [2].

Accident is an unfortunate even especially one causing physical harm or damage brought about unintentionally. A fire accident is any situation in which there is a greater than normal risk of harm to people or property due to fire. Fire accidents can result in catastrophic personal injury and devastating damage. If fire occurs in a health care agency, the nurse protects clients from immediate injury, reports the exact location of the fire. The nurse should be aware of the fire protection practices and should be followed during the accidents [3].

Fires are mainly categorized in four classes according to the type of material burning. They are: 1. Class-A: Paper wood, rags, rubbish, 2. Class-B: Flammable liquids and gases, 3. Class-C: Electrical and 4. Class-D: Designed metals. Different fire extinguisher must be used to fight a fire. It includes, Water pump, Carbon dioxide, Dry chemical, Foam, Special dry powder [4].

Need for the Study

According to the national fire protection association, India reports that more than 3000 people die in fire accidents each year and another 15,000 are injured.

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Fire deaths in residence are roughly calculated as 85 percent of total fire accidents. The national burns information exchange reveals that 75% of all burn injuries result from the actions of the victims. The risk for acquiring the fire accidents is highest among the health care institutions [5].

The successful use of any type of fire equipment depends upon the elements such as equipment, maintenance and training. It is vital that an occupier ensures, its employees are trained for and understand what is required during an outbreak of fire. It was observed that lack of knowledge in the area of fire and inadequate training in emergency drills, delay the fire-fighting operations. Probably adequate fire safety training and periodic emergency drills can make the emergency response more effective [6].

Dr. Fawad Aslam (2005) conducted a descriptive study "Training of health care students in fire accidents management". The objective of this study is that it is on essential component of medical training but unfortunately this component is largely missing from medical and nursing curricula, this project concluded that our experience show a lack of training in fire accidents management and can have unfortunate consequences for both patients and health care students. The training of health professionals should be designed with an emphasis on regional fire accident management [7].

Statement of Problem
A study to assess the knowledge regarding fire accidents among nurses in Narayana Medical College and Hospital, Chinthareddypalem, Nellore.

Objectives
- To assess the knowledge regarding fire accidents among nurses.
- To find the association between knowledge of nurses regarding fire accidents with demographic variables.

Delimitations
- Nurses working in Narayana Medical College Hospital, Nellore.
- Sample size of 100 nurses.

Methodology
Research Approach:
A quantitative approach was adopted to determine the research study.

Research Design
The present study was conducted by using descriptive research design

Setting of the Study
The study was conducted at Narayana Medical College Hospital, Nellore.

Target Population
The target population for the present study includes all nurses.

Accessible Population
The accessible population for the present study was nurses working in Narayana Medical College Hospital, Nellore and who fulfilled the inclusion criteria.

Sample
The sample for the present study was nurses working in Narayana Medical College Hospital, Nellore.

Sample Size
The sample for the present was 100 nurses.

Sampling Technique
Probability simple random sampling was adapted for the study.

Criteria for Sampling Selection
Inclusion criteria
- Nurses posted at Narayana Medical College Hospital, Nellore.
- Nurses present during the time of data collection.

Exclusion criteria
- Nurses who are not willing to participate in the study.
- Nurses who were on leave.

Variables of the Study
Research variable: Level of knowledge on fire accidents.
Demographic variables: Includes age, education, working ward, and source of information.

Description of the Tool
Part-I: It deals with socio demographic variables.

Part-II: Structured questionnaire to assess the level of knowledge regarding fire accidents.

Score Interpretation

Level of Knowledge	Score
Inadequate Knowledge	<50 %
Average Knowledge	51-75%
Good Knowledge	>75%

Data Analysis and discussion

Table 1: Frequency distribution of level of knowledge regarding fire accidents among nurses. (N=100)

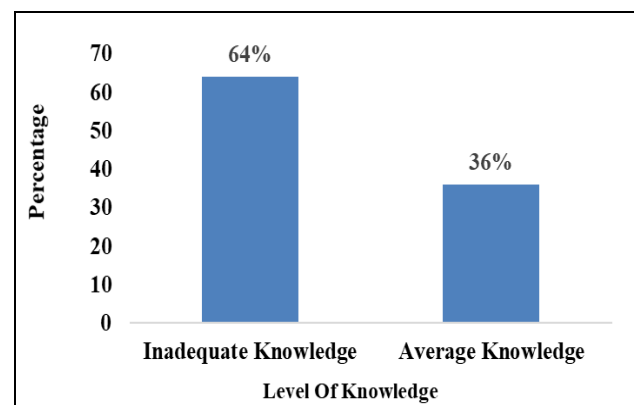| S. No	Level of Knowledge	Frequency	Percentage
1.	Inadequate Knowledge	-	-
2.	Average Knowledge	64	64%
3.	Good Knowledge	36	36%

Fig 1: Percentage distribution of level of knowledge regarding fire accidents among nurses.

Table 2: Mean and Standard Deviation of level of knowledge regarding fire accidents among nurses. (N=100)

Category	Mean	SD
Nurses	19.76	2.804

Table 3: Association between level of knowledge and demographic variables among nurses. (N=100)

S. No	Demographic Variables	Average knowledge		Good knowledge		Chi-Square
		F	%	F	%	
1.	**Working ward**					C=17.14
	a) Medical surgical ward	6	6	8	8	Df=4
	b) Intensive care unit	8	8	15	15	T=11.21
	c) Emergency and HDU	17	17	25	25	*P*<0.05
	d) Operation theaters.	5	5	16	16	S*
2.	**Source of knowledge**					C=19.49
	a) Attending conference	35	35	12	12	Df=6
	b) Mass media	12	12	21	21	T=13.62
	c) Books, Journals	16	16	24	24	*P*<0.05
	d) CNE programme	3	3	7	7	S*

Major Findings of the Study

- Regarding the level of knowledge among nurses, 36(36%) were had good knowledge, 64(64%) were had adequate knowledge and none of them had poor knowledge regarding fire accidents.
- The mean score of respiratory tract infection of under-five children was 19.76 and standard deviation was 2.804.
- Regarding association between level of knowledge and demographic variables, working ward and source of knowledge had significant association at *P*<0.05 level.

Conclusion

The study concluded that majority of the nurses, (64%) had adequate knowledge regarding fire accidents. But still considering the important role of every nurse in fire accident, there is a importance need to give fire safety training for nurses and all health care workers on regular interval.

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