

# Journal club

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# Statement

- Assessment of the knowledge and practices regarding biomedical waste management among nurses working at selected Hospitals, Hyderabad.

# objectives

1. To assess the knowledge regarding biomedical waste management among nurses.
2. To identify the practices regarding biomedical waste management among nurses.
3. To find out the association between knowledge and practices regarding biomedical waste management with selected demographic variables.

# **Conceptual framework**

- The conceptual framework for the present study was based on Myra E Levine's conservation model.

## **Hypothesis H1:-**

- There will be a statistically significant association between knowledge and practices of biomedical waste management among nurses.

# methodology

- **Research approach**:- A Descriptive study approach was felt to be appropriate and was used for the study.
- **Research design**:- Selected for the study was descriptive survey design.
- **Research setting**:- The setting of the study was Nizam's Institute of Medical Sciences, Hyderabad, Andhra Pradesh.
- **Population**:-The study population comprised of the nurses who were working in selected wards and ICU's of Nizam's Institute of Medical Sciences, Hyderabad.



- **Sample**:- The sample consisted of 100 nurses working in selected wards and ICU's of Nizam's Institute of Medical Sciences, Hyderabad.

- **Sampling techniques**:-Sampling technique adopted for the study was convenient sampling technique.

- **Development and description of the tool**:-

To assess the knowledge and practices of nurses regarding bio-medical waste management, the tool was designed in the form of structured questionnaire

to assess the knowledge regarding biomedical waste management and an observation checklist prepared for assessment of practices.

**Validity of the tool:-** The content validity of the tools were ascertained by giving to the experts in the field of nursing, medical and hospital administration.

**Reliability of the tool:-** To determine the reliability of the tool the internal consistency approach was used. To test the reliability test-retest method was

● **Data collection procedures**:- The permission obtained from the medical superintendent and nursing superintendent of NIMS, Punjagutta, Hyderabad, A.P. The structured questionnaire was given to 100 staff nurses. Practices were observed with the help of observational check list in three observations.

● **Data analysis**:- Data analysis was planned to analyze and interpret the data with the help of descriptive and inferential statistics.




# Major findings

- **Characteristics of the sample**:- Sample consisted of 100 nurses. Majority of the samples(72%) were with general nursing and midwifery educational qualification and 28% sample were with graduation in nursing.

# Table no.1 frequency and percentage distribution of the sample according to educational qualification

N=100

Education qualification	frequency	%
General nursing	74	74%
Graduate in nursing	26	26%
total	100	100%

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- Table 1 clearly shows that out of 100 nurses, majority 74% of them had studied up to general nursing and midwifery and only 26% had graduation in nursing

# Fig 1: graph showing frequency and percentage distribution of educational qualification

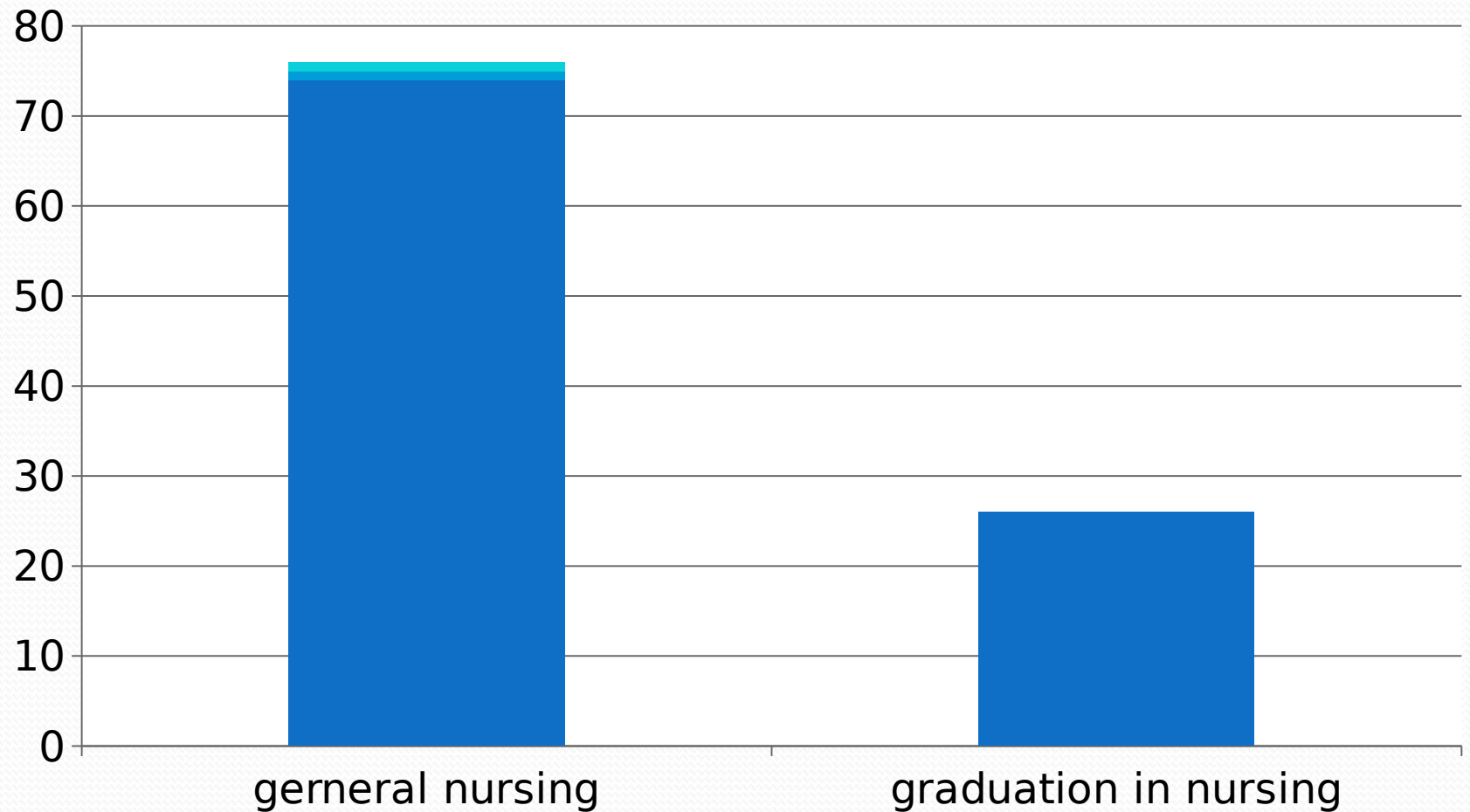



Table 2: frequency and percentage distribution of sample according to total knowledge N=100

Level of knowledge	frequency	percentage
Below average <50%	38	38%
Average (50-75%)	56	56%
Above average (>75%)	6	6%
total	100	100%

**Mean= 49.56    SD =8.66**



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- Table 2 shows that out of 100 nurses 38% of them have scored below average, 56% have scored average level of knowledge and only 6% of them have scored above average level of knowledge.

## Series 1

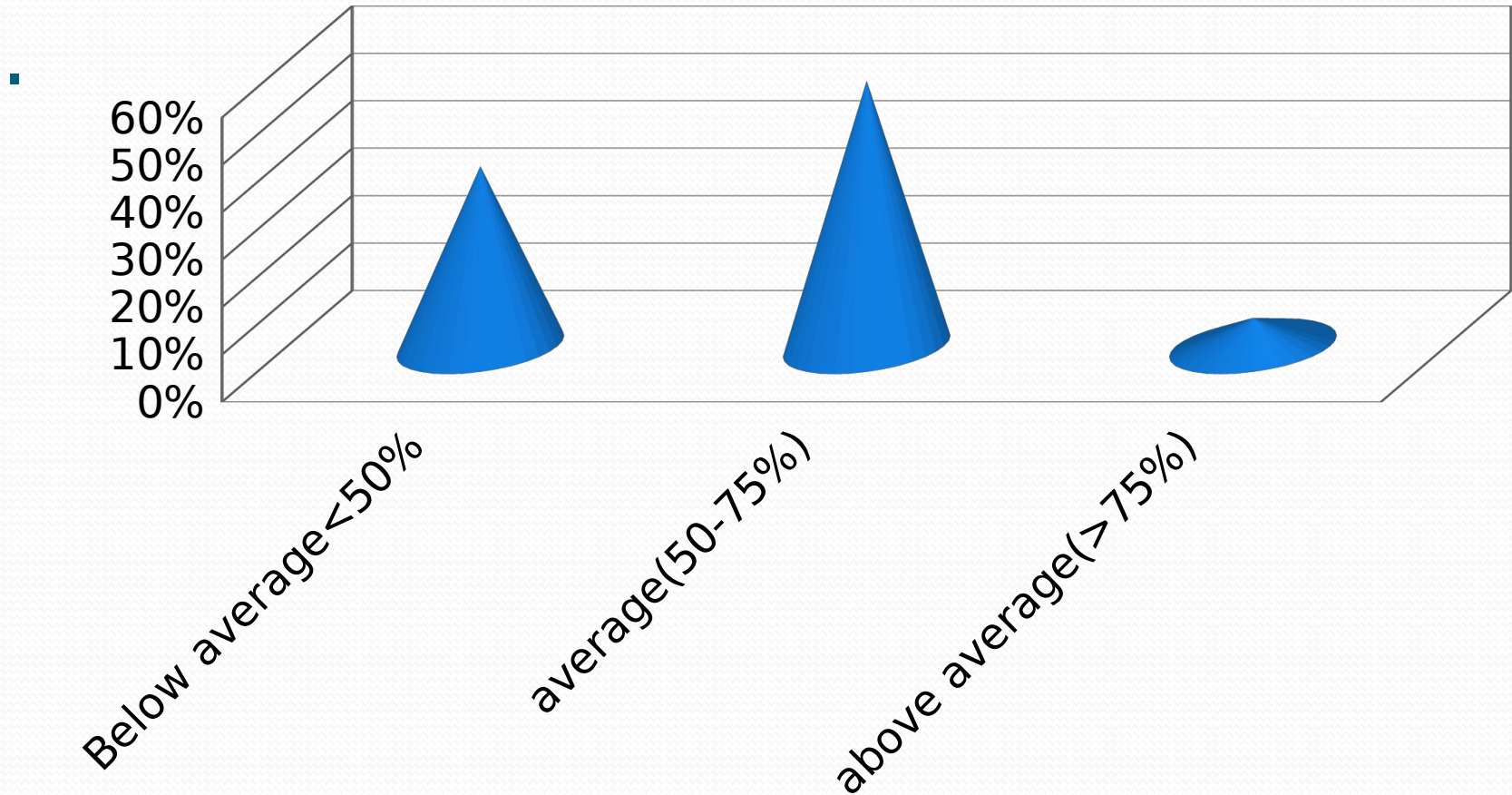


Fig 2: Graph showing frequency and percentage according to total knowledge

# Section wise finding

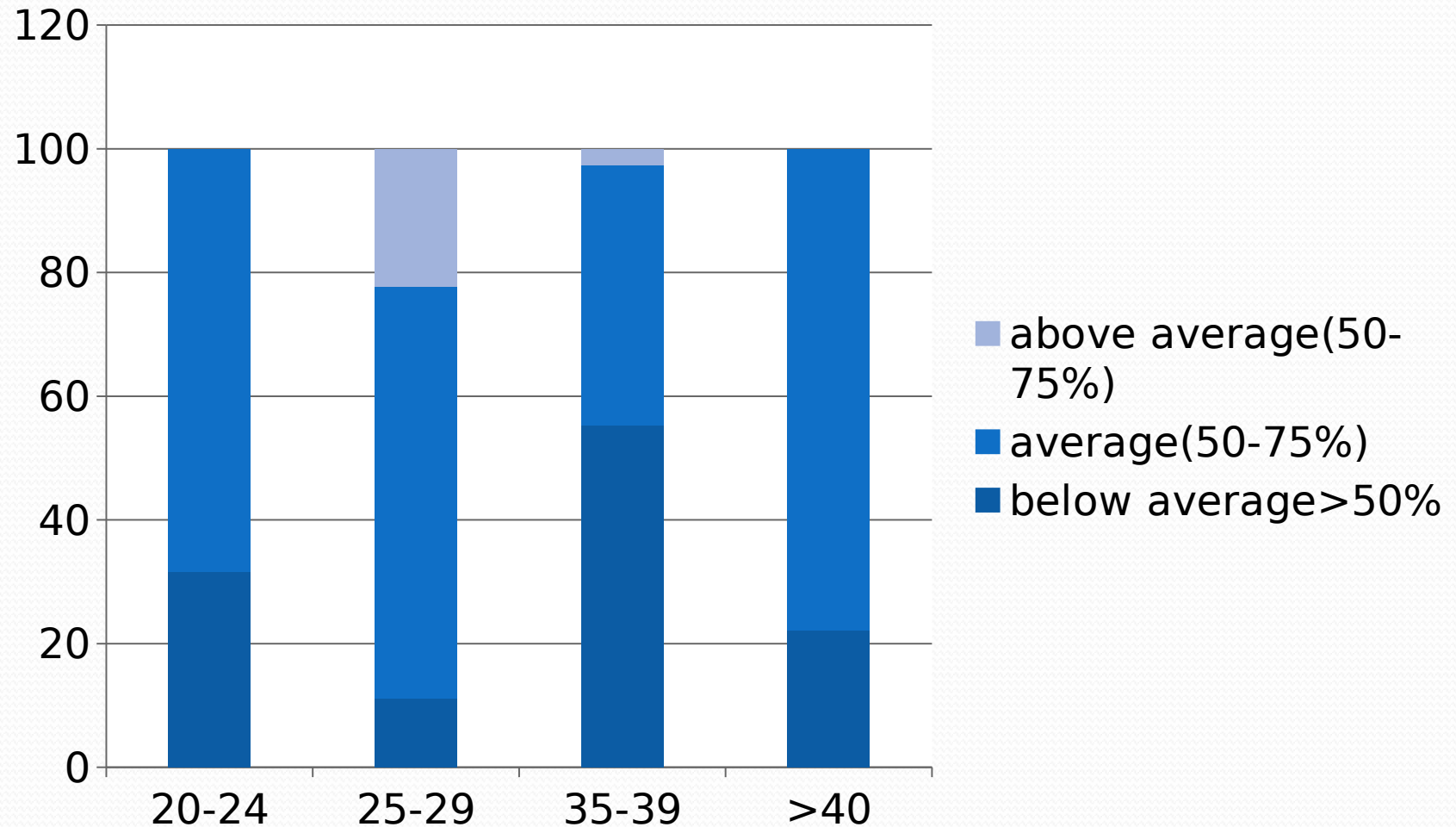
- 59% of the nurses had average level of knowledge regarding meaning and generation of biomedical waste. 56% of the nurses had average level of knowledge regarding standards of segregation, handling and treatment of biomedical waste , 75% of the nurses had below average level of knowledge regarding internal transportation and disposal of biomedical waste and 55% of the nurses had below average level of knowledge regarding policies of biomedical waste management.

Table 4: relationship between the level of knowledge and demographic variables


age	Level of knowledge			total
	Below average <50 %	Average (50-75%)	Above average >75%	
	F P	F P	F P	F P
20-24 yrs	06 31.6%	13 68%	0 0	19 100%
25-29 yrs	01 11.1%	06 66.7%	2 22.2%	09 100%
35-39 yrs	21	16	1	38
>40 yrs	22.2%	77.8%		100%

**Chi square value= 21.270      df=8      table value= 15.51**

Fig 4: graph showing relationship of knowledge and age.





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- In Table 4 the calculated value of chi square was 21.27 and the table value of chi square at 0.05 level of significance with 8 degrees of freedom was 15.51 which was less than the calculated value. Hence there was a significant association between the level of knowledge and age of nurses. So the null hypothesis  $H_0$  was rejected.

# Table5: relation between the level of practices and place of work

Place of work	Level of knowledge						total	
	Below average<50%		Average(50-75%)		Above average >75%			
	F	P	F	P	F	P	F	P
Medical wards	06	33.3%	11	61.1%	1	5.6%	18	100%
Surgical wards	09	45%	10	50%	1	5%	20	100%
Intensive care units	34	72.3%	12	25%	1	2.1%	47	100%
E.M.D.	01	16.7%	05	83.3%	0	0%	06	100%
Any other	06	66.7%	2	22.2%	1	11.1%	4	4%

**Chi square value= 16.607    df=8    table value=15.51**  
**p=0.05**

In table 5 the calculated value of chi square was 16.607 and the table value of chi square at 0.05 level of significance with 8degrees of freedom was 15.51 which was more than the calculated value . hence there is a significant association between the level of practices of biomedical waste management and place of work of nurses. So the null hypothesis H04 was accepted.

# implications

- The findings of the study have several implications for nursing education, nursing practice, nursing administration and nursing research. The implications which have been made in the present study are of vital concern to the professional practitioners, nurse educators and hospital administrators
- **Nursing education:-** In-service and continuing education programs may be planned for the nurses on biomedical waste management.


- The curriculum of the nursing education may be modified to prepare the student nurses to teach and train giving importance to occupational hazards and safe disposal of hospital waste.
- **Nursing practice:-** The head nurse should supervise constantly ,actively and strictly so that the biomedical waste is segregated appropriately for safe disposal.
- The head nurse may plan for an orientation programme for all new nurses including student nurses.



- The head nurse should provide adequate supplies to practice the safe disposal of waste.

**Nursing administration**:- Nurse administration should plan for in service education programme on biomedical waste to all nurses in rotation.

- Develop a policy on safe handling of waste from the point of generation to internal transportation.
- The nurse administration has to arrange for periodic health checkups and vaccination for vaccine preventable diseases.



- The nurse administration can emphasize on appointing an infection control nurse who can supervise the biomedical waste management in the whole hospital .

**Nursing research**:- study may be conducted by nurses on practice regarding waste management in the whole hospital.

- Biomedical waste management helps the nurses to identify their role in prevention of occupational hazards and in prevention of nosocomial infection

# limitations

- The study was limited to nurses in selected wards and ICUs of NIMS, Hyderabad.
- The study was limited to knowledge assessment only.
- The study was limited to small sample only.

# Recommendations

- On the basis of the findings of the present study ,the following recommendations are made:-
- Study may be conducted to assess the practices of the nurses regarding biomedical waste management.
- A study can be conducted to assess the learning need of class 4<sup>th</sup> workers on hospital waste management at NIMS.
- A similar study can be undertaken on a larger sample.
- A similar study can be undertaken in the community health centers.

# Criticism

- **Negative :-**

- Second objective :-The practices regarding biomedical waste management among nurses was not assessed.
- Table no 1 value was wrong
- Age group 30-35 was not taken by researcher
- Null hypothesis was not mentioned & null hypothesis was accepted but according to statistics is should be rejected



# Criticism

- **Positive points:-**
- Conceptual framework was made by her in descriptive study
- Research topic was good



*Thank you*