Review Article

"ASSESSMENT OF KNOWLEDGE AND ATTITUDE TOWARDS RADIATION HAZARDS AMONG NURSING STUDENTS"

INTRODUCTION:

Radiation is the transmission of energy in the form of light or tiny particles that are too small to see. Radiation that humans encounter on a daily basis includes visible light, ultraviolet light released by the sun and sun beds, and single-frequency transmission for television and radio communications[1]. Radiation hazards are defined as irreversible cell changes caused by direct or indirect nuclear effects from any sort of radiation. Because alpha and beta particles or rays deposit the most energy, they have more harmful consequences than gamma rays, which are considered rather safe but not completely risk-free.[2] -S. N. Chugh

Ionizing radiation – Radiation with enough energy to expel electrons from an atom as it interacts with it, causing it to become charged or ionized. It can be made by speeding charged particles through an electric potential or by spontaneous radioactive decay (e.g. x-rays) another way by which radiations interact with matter to make ions is ionisation; high-energy electromagnetic and particle radiations can make ions as they pass through matter. Ionizing radiations include alpha and beta particles, as well as x-ray machines and radio scopes, which are both essential and possible sources. The biological environment is endangered by Ionizing radiation. The two sorts of radiation impacts on human wellbeing are stochastic and deterministic radiation impacts. The stochastic impact is an autonomous dosage impact which will trigger infection such as cancer. In spite of the reality that ionizing radiation is hurtful to human wellbeing, high-energy radiation such as x-rays and gamma

beams are effective in slaughtering cancerous cells within the human body, the deterministic impact may be a dosage impact that's dependent on the measurements and has prompt impacts such as radiation burns and intense radiation disorder. Non-ionizing radiation includes a wide extend of frequencies, from exceptionally moo to exceedingly tall.These are Ionizing in a secondary way. They may not cause chemical or biological harm when they absorb in the media in which they move, but when they absorb in the medium through the Compton, photoelectric, or pair formation processes, they give up their energy to form rapidly moving electrons.[3]

THE OBJECTIVES OF THE STUDY WERE:

1) To assess the knowledge of nursing students towards radiation hazards.

2) To assess the attitudes of nursing students' towards radiation hazards.

3) Correlate the knowledge and attitude of nursing students towards radiation hazards.

4) Associate the knowledge of nursing students towards radiation hazards with their demographic variables.

5) Associate nursing students' attitudes regarding radiation hazards with their demographic variables.

MATERIAL AND METHODS OF THE STUDY:

Research Approach: Quantitative Research approach used in this Study.

Research Design: Descriptive Research Design.

Research Variable:

- Knowledge regarding radiation hazards.
- Attitude regarding radiation hazards.

Setting ofthe Study: Smt. RadhikabaiMeghe Memorial College of Nursing Sawangi (Meghe), Wardha.

Sample: Basic and Post B Sc Nursing Students.

Sampling Techniques: Purposive Sampling Technique.

Sample Size: Sample size of this study is 180.

TOOL:

- Structured questionnaire on knowledge regarding radiation hazards.
- Attitude scale regarding radiation hazards.

SAMPLING CRITERIA

Inclusion criteria

The studies include:

- Students who are willing to participate. Those who are studying in undergraduate students (Basic B.Sc. IInd and IIIrd yr. students and post B.Sc. IST and IInd yrs.)
- Those who are available throughout the data collecting period

EXCLUSION CRITERIA:

The study excludes:

- Those who are studying Basic B.sc Ist yr.
- Those who are unwilling to take part in the research.

MAJOR FINDINGS OF THE STUDY:

1) Table 1. A percentage-wise distribution of nursing students based on demographic factors.

Demographic Variables	**No. of students**	**Percentage (%)**
Age(yrs.)		
20-21 yrs.	127	70.6
22-23 yrs.	42	23.3
24-25 yrs.	11	6.1
26 yrs. and above	0	0
Gender		
Male	40	22.2
Female	140	77.8
Academic year		
BSC(N) IInd year	48	26.7
BSc(N) IIIrd year	83	46.1
PBBSc(N) Ist year	38	21.1
PBBSc(N) IInd year	11	6.1

Area of residence		
Rural	95	52.8
Urban	85	47.2

2) Assessment with level of knowledge score and level of attitude score

- **Table 2. Assessment with level of knowledge score**

n=180

Level of knowledge	**Score Range**	**Level of Knowledge Score**	
		No of students	**Percentage**
Poor	0-20%(0-4)	3	1.67
Average	21-40%(5-8)	67	37.22
Good	41-60%(9-12)	85	47.22
Very Good	61-80%(13-16)	24	13.33
Excellent	81-100%(17-20)	1	0.56
Minimum score		4	
Maximum score		20	
Mean knowledge score		9.47±2.81	
Mean % Knowledge Score		47.38±14.07	

The above table shows that 1.67% of nursing students had poor level of knowledge score, 37.22% had average, 47.22% had good, 13.33% had very good and 0.56% of nursing students understudies had excellent level of knowledge score. Minimum the level of knowledge that I had was 4 and maximum knowledge score was 20. Mean knowledge score was 9.47±2.81and mean percentage of knowledge score was 47.38±14.07.

- **Table 3. Assessment with level of attitude score** n=180

Level of attitude	**Score Range**	**Level of Attitude Score**	
		No of students	**Percentage**
Disagree	0-20 (0-33%)	17	9.44
Neutral	21-40(34-67%)	57	31.67
Agree	41-60(68-100)	106	58.89
Minimum score		20	
Maximum score		60	
Mean attitude score		42.62±10.55	
Mean % Attitude Score		71.04±17.58	

The above table shows that 9.44% of nursing students were disagree, 31.67% were neutral and 58.89% of the nursing students were agreed about attitude. Minimum attitude

score was 20 and maximum attitude score was 60.Mean attitude score was 42.62±10.55 and mean percentage of attitude score was 71.04±17.58.

3) Table 4. Correlation between knowledge and attitude score regarding radiation hazards among nursing students n=180

Overall	Mean	SD	r-value	p-value
Knowledge Score	9.47	2.81	0.600	0.0001
Attitude Score	42.62	10.55		S,p<0.05

This table shows the correlation between knowledge and attitude score regarding radiation hazards among nursing students. Knowledge and attitude score are correlated and Pearson's correlation coefficient is applied at 5% level of significance. Significant positive correlation was found between knowledge and attitude score of nursing students(r=0.600, p=0.0001).

4) Association of level of knowledge score regarding radiation hazards among nursing students

   There was no significant association between the knowledge score with Age (yrs), Gender, and Area of residence except Academic year

RESULT:

Finding of the study, the knowledge score revealed that Minimum knowledge score was 4 and maximum knowledge score was 20. Mean knowledge score was 9.47±2.81and mean percentage of knowledge score was 47.38±14.07 and positive attitude reveled that Minimum attitude score was 20 and maximum attitude score was 60.Mean attitude score was 42.62±10.55 and mean percentage of attitude score was 71.04±17.58.

DISCUSSION:

The investigation's findings compared to knowledge and attitude scale formulated in the tools and in the result of the previous studies in this part, as well as references listed below. The purpose of the research study was assessment of knowledge and attitude towards radiation hazards among nursing students.

Luntsi G, et all, may 07, 2016, "Assessment of knowledge and attitude of nurses towards ionizing radiation during theatre/ward radiography." The overview found that there were 1.09 times more female members than male members. The lion's share of medical attendants (74%) were beneath the age of forty (40). The majority of medical caregivers (68 percent) had a certification as their most remarkable skill, followed by 61 (32.4 percent) who had a license. The degree of data on radiation, as well as the state of attitude about radiation, was determined to be great during ward/theatre radiography. The comes about of this think about demonstrated that medical attendants within the Maiduri city had an amazing understanding of ionizing radiation, in any case their knowledge toward radiation security amid ward/theatre radiography was still less than perfect.[4]

Behzadmehr R, et all, sep 07, 2020, "Radiation protection among health care workers: knowledge, attitude, practice, and clinical recommendations: a systematic review: Reviews on Environmental Health." The researcher observed that, out of the 1,848 inquire about surveyed, 41 considers including 11,050 HCWs were chosen for the ultimate arrange. The discoveries uncovered that in most investigate, more than half of the members (50 percent) had normal information. Besides, whereas 60% of the members had aaverage knowledge, they had normal radiation security practises in most trials. The most important proposal for enhancing KAP among members was to incorporate radiation security requirements into understudy educational programmes.[5]

Almohaimede AA, et all, April 27, 2020, "Knowledge, attitude, and practice (KAP) of radiographic protection by dental undergraduate and endodontic postgraduate students, general practitioners, and stints. International journal of dentistry." The researcher found that More over half of the respondents (60.79 percent) accepted that dental X-rays are destructive to one's wellbeing, and 68.1 percent knew around the ALARA (as moo as sensibly feasible) rule. According to the National Chamber on Radiation Security (NCRP) and the Worldwide Commission on Radiological Assurance (ICRP), 34% of individuals are aware of the recommendations (ICRP). To protect patients from X-ray radiation, endodontic postgraduate understudies and those who are aggressive in the academic field were more likely to use a lead overskirt and thyroid collar. Undergraduate students, postgraduate endodontic students, and academic stints were the most knowledgeable of radiation mitigation strategies. In particular in public and private schools, prevention should be emphasised more among general practitioners as well as postgraduate endodontic students and stints.[6]

Khamtuikrua C, et all, 2020,"Awareness about radiation hazards and knowledge about radiation protection among healthcare personnel: A quaternary care academic centre–based study.." The showed that A add up to of 270 potential members were messaged and inquired to total an Internet study, with a reaction rate of 79.3%. The normal age of the 214 members was 34.8 a long time, with women accounting for 69.2% of the whole. The majority of members (63.1%) believe that Radiation exposure that happens on a daily basis is highly dangerous; When working in a radiation-exposed area, 86.4 percent and 78.5 percent of those polled stated They wore a lead at all times smock and a thyroid protector, respectively. the working environment The standard score for radiation risks and protection was 6.42.0. (with a most extreme esteem of 15). As a result, anesthetic personnel and surgical subspecialists

must increase their radiation security skills, particularly in respect to the usage of lead goggles and radiation doses that are detrimental to the wearer.[7]

Maharjan S, et all, 2020,"Knowledge of radiation protection among radiology professionals and students: A medical college-based study."The study implies that There were 35 members in all, 28 guys and 7 females, with a cruel age of 26.09 7.18 a long time and a run of 18–54 a long time. The normal degree of radiation mindfulness was 9.6 (68.57%), which was adequate, with a most extreme of 13 and a least of 4. Information scores by sexual orientation, age bunches, work encounter, and studentship had no measurable noteworthiness. In terms of scholastic accreditations, recognition graduates had a lacking degree of information (7.76 percent), which was lower than other higher scholarly levels.[8]

RECOMMENDATION FOR FUTURE STUDY:

Recommendation for the further studies based on the analysis of the present research study following recommendations could be:-

1. A similar study may be conducted with a larger sample.
2. A similar study may be conducted with the help of self-instructional module.
3. A similar study may be conducted with the help of planned teaching.
4. A study to assess the knowledge about radiation hazards among radiology department.
5. Evaluate the awareness program about radiation hazards

CONCLUSION:

The goal of the study was to measure nursing students' knowledge and attitudes about radiation hazards. The data was collected in online mode with confidentiality also the

selected areas as of nursing college was Smt. Radhikabai Meghe Memorial College of Nursing Sawangi (meghe), Wardha. The objectives were set so that it was helpful for the researcher to reach the desire findings. For the data collection, the tools were distributed in three section i.e. demographic variables, knowledge questionnaire, and attitude scale. According to the findings of the current study, nursing students had a strong understanding of radiation hazards and a positive attitude toward them.

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