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## A Study to Assess the Knowledge and Attitude Regarding Integration of Artificial Intelligence in B.Sc Nursing Curriculum among 4th Year Students of B.Sc Nursing in Selected Colleges of Nursing in the City

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### ABSTRACT

*To assess the knowledge regarding the integration of artificial intelligence in the nursing curriculum. To assess the attitude regarding the integration of artificial intelligence in the nursing curriculum. To correlate the level of knowledge and attitude regarding the integration of artificial intelligence in the nursing curriculum. Result: the level of Knowledge among 4th year B.Sc. Nursing students' majority of the samples 50(50%) moderate knowledge, 44(44%) have Inadequate knowledge, and 6(6%) have Adequate knowledge. the level of attitude among 4th year B.Sc. The majority of the nursing students' samples, 86(86%) Positive attitudes, and 14(14%) have negative attitudes. There were 100 comparisons between Comparisons between the Level of Knowledge and Attitude Regarding the Integration of AI in Nursing Curriculum. Each of them had answered 30 questions and an attitude scale. They assessed the knowledge and attitude regarding the integration of AI in the nursing curriculum among 4th year B.Sc students of B.Sc nursing, and correct answers were recorded as mean and standard deviation of the level of Knowledge and attitude. The paired t-test was applied to compare the difference between the Level of Knowledge and Attitude Regarding the Integration of AI Into Nursing Curriculum. It was found that the Level of Knowledge and Attitude Regarding the Integration of AI in the Nursing Curriculum, the paired test value was 23.350\* at the level of P 0.05. Since the P value is less than 0.05 (P value = 0.0001) difference in scores is statistically significant. The researcher concludes at a 5% level of significance and 198 degrees of freedom that the above data gives sufficient evidence to conclude that Comparison between Knowledge and Attitude Regarding Integration of AI In Nursing Curriculum, hence rejects the null hypothesis the research hypothesis.*

**Keywords:** Artificial Intelligence, Nursing, Knowledge, Attitude, Curriculum, Education, Healthcare, Integrate, Practice, Future, Applications, Technology.

### INTRODUCTION

*“Generative AI is the most powerful tool for creativity that has ever been created. It has the potential to unleash a new era of human innovation.” ~Elon Musk.*

What is Artificial Intelligence? When we think of Artificial Intelligence or AI, many things come to our mind like – “AI means robots!!” or “Is AI technology new??” or “AI tools help\_ and \_hurt patient care” or “Can AI replace nurses??” and so on. AI is already a part of our everyday lives and we have been using it in some way or other to make our work easier. Smart home devices, mobile map application, voice assistants like Siri, Alexa, Google assistant, online banking, behavioural changing apps, and countless other things require the use of AI in some way or other. And the world of healthcare is no different.

Artificial intelligence in nursing is just a precipice of making its full impact. Artificial Intelligence, or AI, is the development of computer system that are capable of performing tasks that normally require human intelligence such as decision making, object detection, solving complex problems. Artificial Intelligence (AI) holds significant importance for nurses in various ways enhancing their roles and improving patient care. AI can assist nurses by providing accurate and rapid diagnostic support, helping them make quicker and more accurate assessments of patient conditions. AI can help nurses tailor care plans to individual patients by analyzing patient data and providing insights into personalized treatments and interventions.[4] AI-powered clinical decision support systems can provide real-time information and recommendations to nurses at the bedside, helping them make informed decisions about patient care. AI can automate routine administrative tasks, such as data entry and documentation, allowing nurses to spend more time with patients and focus on direct care. AI can assist in medication management, including dosage calculations, drug interactions, and medication administration, reducing medication errors. Nurses can remotely monitor patients with chronic conditions or those in home care settings using AI-enabled wearable devices, ensuring timely interventions, and reducing hospital readmissions. AI-powered chatbots and virtual assistants can help nurses communicate with patients and provide information and support, enhancing patient engagement and education. AI can predict patient deterioration or complications, enabling nurses to intervene early and prevent adverse events. Overall, AI empowers nurses to provide higher-quality care, reduces their administrative burden, enhances patient safety, and offers valuable tools for continuous learning and improvement in the healthcare field. As AI continues to evolve, its integration into nursing practice is expected to become increasingly vital for the delivery of efficient and effective healthcare services.

## NEED FOR THE STUDY

The integration of AI in healthcare is expected to continue to grow, as it has the potential to revolutionize healthcare delivery, improve patient outcomes, and make healthcare more accessible and cost-effective. Integrating AI into healthcare also is necessary for nurses which allows them to acquire new skills, such as understanding and working with AI-driven tools and technologies. So, Nursing students should recognize that their education should include training on AI applications in healthcare to prepare them for the evolving healthcare landscape. To save time, energy and money. • To provide specialized care for rural population. • For uniform accessibility of healthcare across the country. • To decrease the chances of clinical mistakes and diminish the costs related to tedious errands. • To enhance patient care and monitoring. • It helps in streamlining administrative tasks.

**STATEMENT OF THE PROBLEM:** “A study to assess the knowledge and attitude regarding integration of ARTIFICIAL INTELLIGENCE (AI) in b.sc nursing curriculum among 4<sup>th</sup> YEAR students of b.sc nursing in selected colleges of nursing in the city”.

## OBJECTIVES OF THE STUDY

1. To assess the knowledge regarding integration of artificial intelligence in nursing curriculum
2. To assess the attitude regarding integration of artificial intelligence in nursing curriculum
3. To co-relate the level of knowledge and attitude regarding integration of artificial intelligence in nursing curriculum
4. To find out association between knowledge and attitude regarding integration of artificial intelligence in B.SC nursing curriculum with selected demographic variable.

## ASSUMPTIONS

1. 4<sup>th</sup> year b.sc nursing students may have adequate Knowledge Regarding Integration Of AI in b.sc Nursing Curriculum.
2. 4<sup>th</sup> year b.sc nursing students may have positive attitude towards Integration Of AI in b.sc Nursing Curriculum.

## RESEARCH METHODOLOGY

**RESEARCH APPROACH:** A Descriptive research approach

**RESEARCH DESIGN:** Cross sectional research design .

**RESEARCH SETTING:** Selected colleges of nursing in the city.

**POPULATION:** 4<sup>th</sup> YEAR students of b.sc nursing

**SAMPLING TECHNIQUE:** Purposive sampling technique

**SAMPLES:** 4<sup>th</sup> YEAR students of b.sc nursing

**SAMPLE SIZE :** 100 as 4<sup>th</sup> YEAR students of b.sc nursing.

## CRITERIA FOR SELECTION OF SAMPLE:

### INCLUSION CRITERIA FOR SAMPLING:

The criteria for inclusion of the subjects in the study were:

1. Basic B.sc Nursing fourth year
2. Willing to participate in the study
3. Present at the time of data collection
4. Able to read or understand English.

#### EXCLUSION CRITERIA FOR SAMPLING:

1. Odd Batch Basic B.sc nursing students
2. Not able to participate in the study

#### DESCRIPTION OF THE TOOL

A structured knowledge questionnaire was prepared with the help of review of literature and discussion with experts. The tool had two sections:

##### Part A:- Demographic variables

Consists of Demographic Variables:- eg. age in year, gender, religion, education of parents, mother tongue, previous knowledge, source of knowledge, which AI technology used.

##### Part B:- Structured knowledge questionnaires

Consists of structured knowledge questionnaires to determine the knowledge regarding **integration of ARTIFICIAL INTELLIGENCE in b.sc nursing curriculum among 4<sup>th</sup> YEAR students of b.sc nursing in selected nursing colleges in the city.**

It consists of Introduction of AI, History, types, knowledge.

##### Score interpretation for the knowledge questionnaires

Level of knowledge	TOTAL SCORE	PERCENTAGE
Inadequate knowledge	0-7	50%
Moderate knowledge	8-14	75%
Adequate knowledge	15-21	100%

##### Part C :-Attitude scale

It is developed to assess the **attitude** of b.sc regarding the knowledge regarding **integration of ARTIFICIAL INTELLIGENCE in b.sc nursing curriculum among 4<sup>th</sup> YEAR students of b.sc nursing in selected nursing colleges in the city.**

The **attitude** is measured as follows : ( agree=02 ,disagree=01, Neutral=00 ) this will be reversed in negative statement.

##### Score interpretation for the Attitude Item

Level of Attitude	TOTAL SCORE	PERCENTAGE
Disagree	0-12	50%
Neutral	13-24	75%
Agree	25-36	100%

#### Organization of findings

The data analyzed are presented under the following sections.

**Section I:** Description of sample characteristics.

**Section II:** Assessment the Knowledge Regarding Integration of AI In Nursing Curriculum

**Section III:** Assessment the Attitude Regarding Integration of AI In Nursing Curriculum.

**Section IV:** Comparison between the Level of Knowledge and Attitude Regarding Integration of AI In Nursing Curriculum.

**Section V:** Association between the Knowledge and Attitude Regarding Integration of AI In B.SC Nursing Curriculum with Selected Demographic Variable.

#### Section I: Frequency distribution of socio demographic variables among 4<sup>th</sup> Year B.Sc. Nursing Students

Table No. 1. Frequency distribution among 4<sup>th</sup> Year B.Sc. Nursing Students

N = 100

	Demographic Variable	Category	Frequency	%
01	Age	18-21 years	87	87
		22-25 years	11	11
		26 and above years	2	2
02	Gender	Male	28	28
		Female	72	72
03	Religion	Hindu	79	79
		Muslim	7	7
		Christen	5	5
		Other	9	9
04	Education	Higher secondary education	14	14
		Undergraduate	38	38
		Postgraduate	43	43
		Illiterate	5	5
05	Mother tongue	Marathi	75	75
		Hindi	13	13
		English	7	7
		All	5	5
06	Previous knowledge Regarding topic	Yes	45	45
		No	55	55
07	Source of Knowledge	Internet	70	70
		Book	25	25
		Journals	5	5

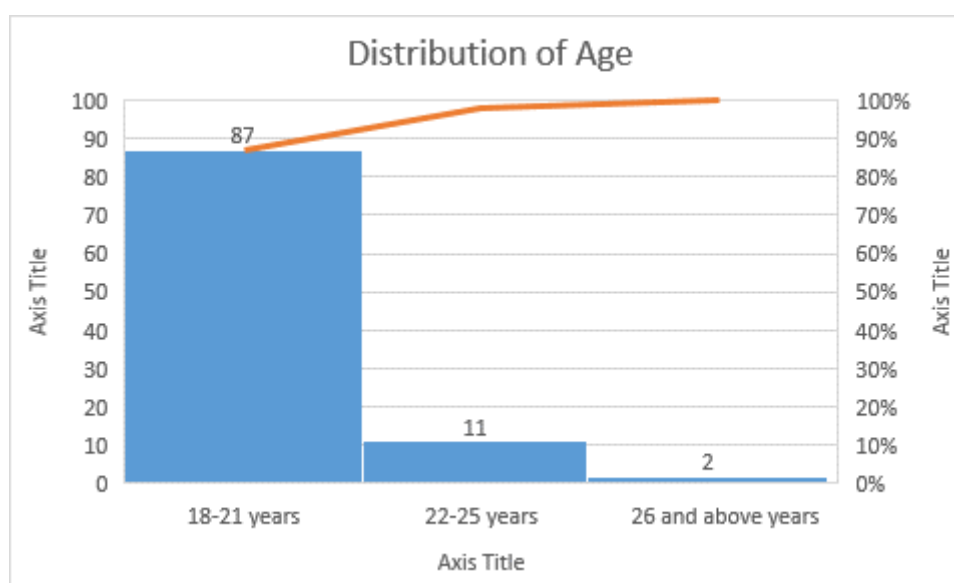


Figure no 1 show, that majority of samples 87(87%) belong to the age group of 18-21 years, 11(11%) belong to 22-25 years, 2(2%) belongs to 26 and above years.

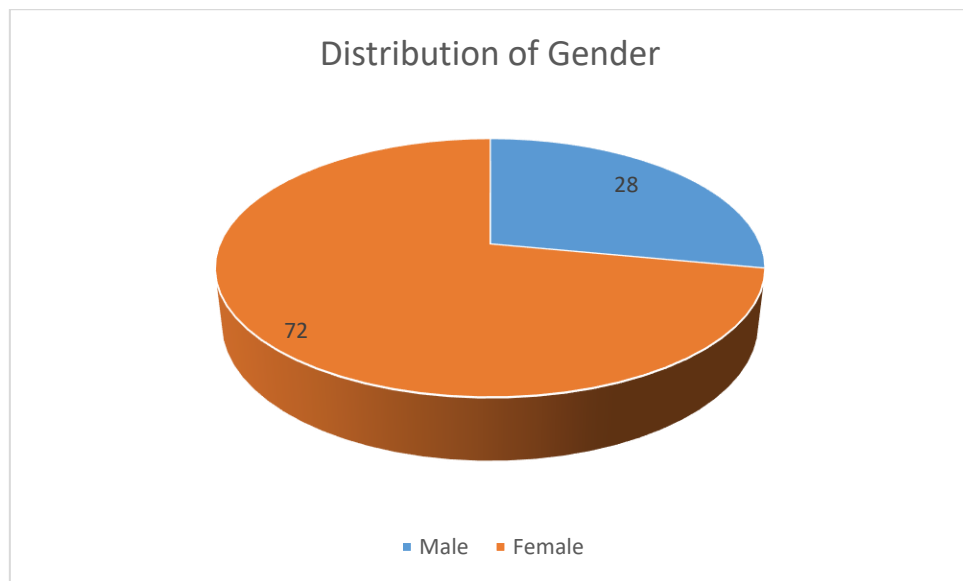


Figure no.2 show, that Regarding gender, Majority of the samples 72(72%) belongs to female and 28(28 %) were males.

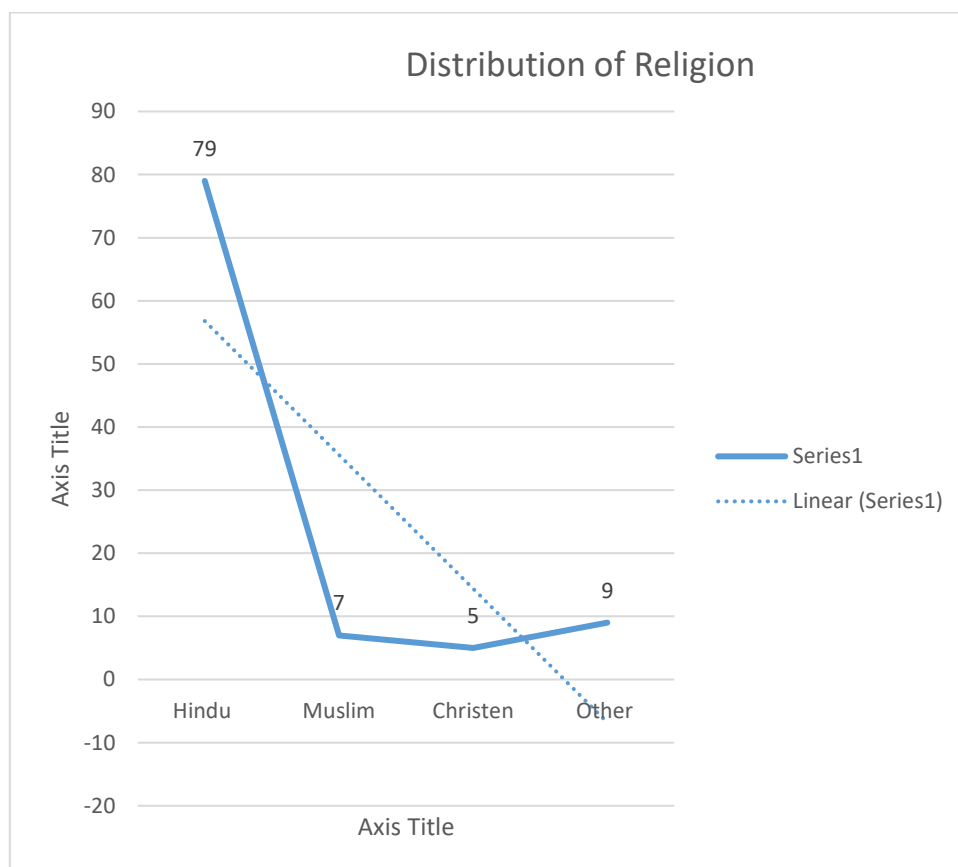


Figure no.3 show, that Regarding Religion, Majority of samples 79(79%) belong to the Hindu religion, 9(9%) belong to the other religion, 7 (7%) belongs to Muslim religion, and 5(5%) belongs to Christen Religion.

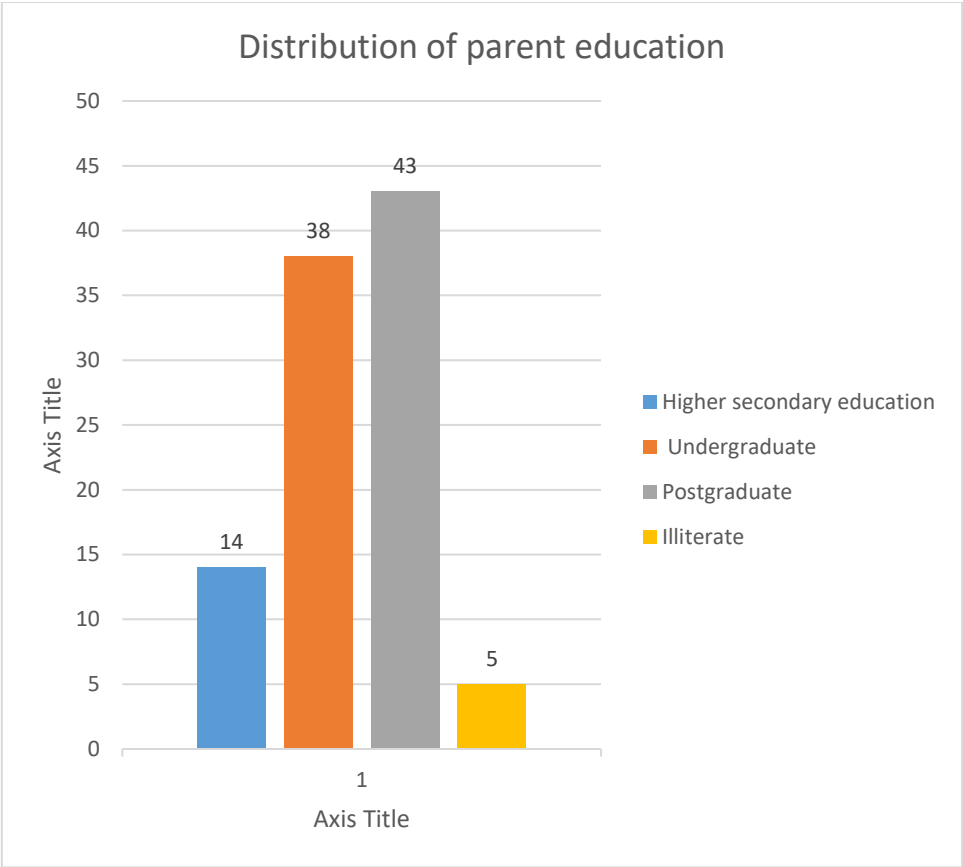


Figure no.4 show, that Regarding education, majority of the samples 43(43%) were education with postgraduate,38(38%) Undergraduate 14(14%) education with Higher secondary education. And 5(5%) were illiterate.

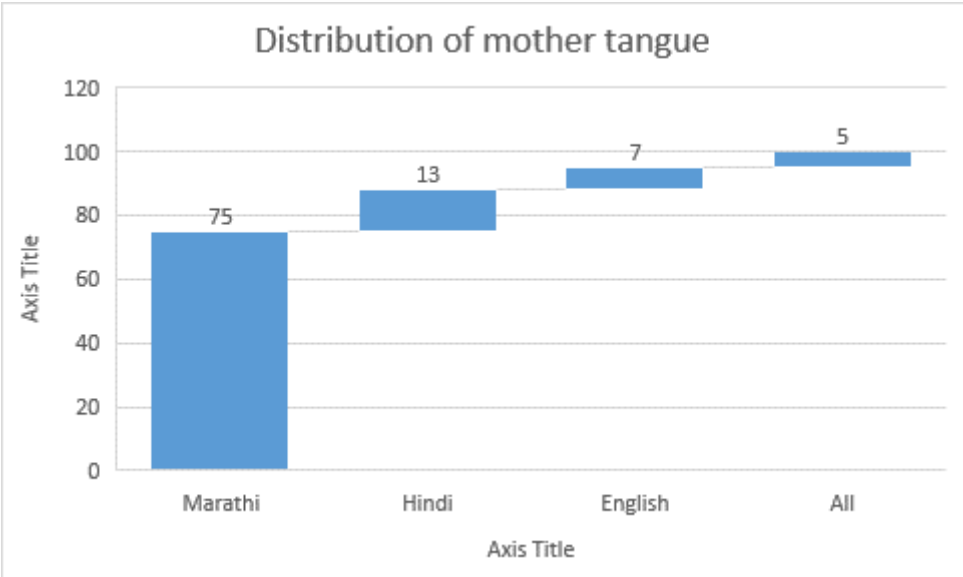


Figure no.5 show, that Regarding Mother tongue majority of Samples 75(75%) were speak marathi, 13(13%) were speak Hindi, 7(7%) were speak English, and 5(5%) were speak all language.

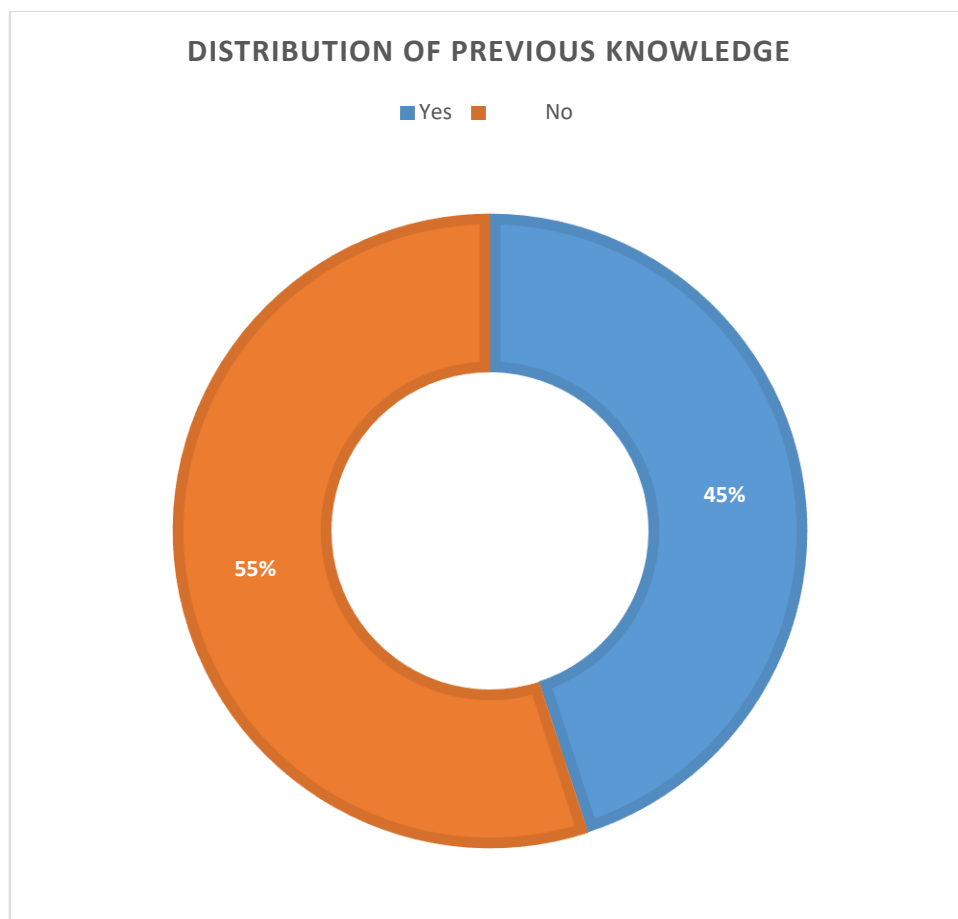


Figure no.6 show, that Regarding previous knowledge majority of sample 55(55%) don't have knowledge, and 45(45%) have a knowledge.

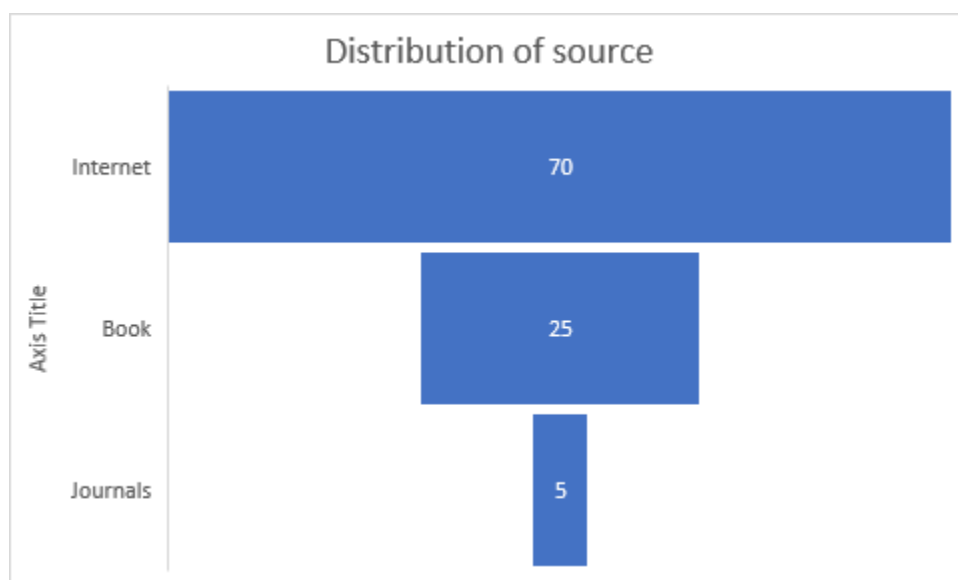


Figure no.27. show, that Regarding Source of knowledge, Majority of samples 70(70%) used internet, 25(25%) Read the books, and 5(5%) getting knowledge through journal.

## Section II: Assessment the Knowledge Regarding Integration of AI In Nursing Curriculum

**Table 2- Frequency and percentage distribution of level of knowledge Regarding Integration of AI In Nursing Curriculum**

**N = 100**

Level of Knowledge	Score		
		Frequency	Percentage
Inadequate knowledge	0-7	44	44
Moderate knowledge	8-15	50	50
Adequate knowledge	16-21	6	6

The table no 2. shows that with regards the level of Knowledge among 4<sup>th</sup> year B.Sc. Nursing student' majority of the samples 50(50%) moderate knowledge, 44(44%) have a Inadequate knowledge and 6(6%) have a Adequate knowledge.

### **Section III: Assessment the Attitude Regarding Integration of AI In Nursing Curriculum.**

**Table 3- Frequency and percentage distribution of level of Attitude Regarding Integration of AI In Nursing Curriculum**

**N = 100**

Level of Attitude	Score		
		Frequency	Percentage
Negative attitude	0-18	14	14
Positive attitude	19-36	86	86

The table no 3. shows that with regards the level of attitude among 4<sup>th</sup> year B.Sc. Nursing student's majority of the samples 86(86%) Positive attitude, 14(14%) have a Negative attitude.

### **Section IV: Comparison between the Level of Knowledge and Attitude Regarding Integration of AI In Nursing Curriculum.**

**N= 100**

Prevalence	Mean	SD	SEM	T	DF	P-value
Knowledge Regarding Integration of AI In B.SC Nursing Curriculum	8.27	3.43	0.34	23.350	198	<0.0001
Attitude Regarding Integration of AI In B.SC Nursing Curriculum	24.07	5.82	0.58			

The table no 4. shows that there were 100 compressions between Comparison between the Level of Knowledge and Attitude Regarding Integration of AI In Nursing Curriculum. Each of them had answered 30questions and attitude scale. Them assess the knowledge and attitude regarding integration of AI in nursing curriculum among 4th year b.sc students of B.sc nursing and correct answer were recorded and mean and deviation of the level of Knowledge and attitude. The paired t test was applied to compare difference between Level of Knowledge and Attitude Regarding Integration of AI In Nursing Curriculum. It was found that Level of Knowledge and Attitude Regarding Integration of AI In Nursing Curriculum the paired' test value was 23.350\* at the level of P 0.05. Since P value is less than 0.05 (P value = 0.0001) difference in scores is statistically significant. Researcher conclude at 5% level of significance and 198 degrees of freedom that the above data gives sufficient evidence to conclude that Comparison between Knowledge and Attitude Regarding Integration of AI In Nursing Curriculum Hence reject null hypothesis and accept research hypothesis.



**Section V: Association between the Knowledge and Attitude Regarding Integration of AI In B.SC Nursing Curriculum with Selected Demographic Variable.**

**Table no 6: Association between the Knowledge Regarding Integration of AI In B.SC Nursing Curriculum with Selected Demographic Variable.**

**N = 100**

Sr. no.	Demographic Variables	Knowledge Regarding Integration of AI In B.SC Nursing Curriculum			d f	Chi square Value	P Value	Significance
		Inadequate Knowledge	Moderate Knowledge	Adequate Knowledge				
1	Age in Years							
	18-21 years	40	45	1	4	28.608	0.001	Significant
	22-25 years	2	5	4				
	26 & above	2	0	0				
2	Gender							
	Male	13	15	0	2	1.624	0.443	Not significant
	Female	32	36	4				
3	Religion							
	Hindu	34	40	5	6	7.82	0.251	Not significant
	Muslim	5	2	0				
	Christian	4	1	0				
	Other	2	7	0				
4	Education of parents							
	Higher education	4	10	0	6	6.16	0.405	Not significant
	Graduation	19	15	4				
	Postgraduate	17	24	2				
	Illiterate	2	3	0				
5	Mother Tongue							
	Marathi	35	25	15	6	9.789	0.133	Not significant
	Hindi	4	9	0				
	English	3	4	0				
	All	1	3	1				
6	Previous knowledge							
	Yes	17	23	5	2	3.922	0.140	Not significant
	No	25	29	1				
7	Source of Information							
	Internet	24	40	6	4	4.109	0.391	Not significant
	Book	12	9	4				
	Journal	2	3	0				

The table 6 describes that, Association between the Knowledge Regarding Integration of AI In B.SC Nursing Curriculum with Selected Demographic Variable. The study demographic variables were; age, gender, education. Knowledge on integration of AI in nursing curriculum. In order to compute the association between the level of Knowledge score and demographic variables chi-square was applied and the value was observed with 5% significance level. Only Age variable is signified

Were the no one variable found statistically significant association with Knowledge score about Integration of AI In B.SC Nursing Curriculum with selected demographic

**Table no 7. Association between the Knowledge and Attitude Regarding Integration of AI In B.SC Nursing Curriculum with Selected Demographic Variable.**

C	Demographic Variables	Attitude Regarding Integration of AI In B.SC Nursing Curriculum		df	Chi square Value	P Value	Significance
		Negative attitude	Positive attitude				
1	Age in Years						
	18-21 years	12	75	2	0.488	0.184	Not significant
	22-25 years	2	9				
	26 & above	0	2				
2	Gender						
	Male	11	17	1	4.409	0.035	Significant
	Female	45	27				
3	Religion						
	Hindu	13	66	3	2.15	0.142	Not significant
	Muslim	1	6				
	Christian	2	3				
	Other	1	8				
4	Education of parents						
	Higher education	1	13	3	9.99	0.0016	Significant
	Graduation	15	23				
	Postgraduate	19	24				
	Illiterate	4	1				
5	Mother Tongue						
	Marathi	23	52	3	1.62	0.202	Not significant
	Hindi	6	7				
	English	2	5				
	All	1	4				
6	Previous knowledge						
	Yes	20	25	1	0.214	0.642	Not significant
	No	27	28				
7	Source of Information						
	Internet	26	44	2	1.841	0.174	Not significant
	Book	6	19				
	Journal	1	4				

The table7 describes that, Association between the attitude Regarding Integration of AI In B.SC Nursing Curriculum with Selected Demographic Variable. The study demographic variables were; age, gender, education. Attitude on integration of AI in nursing curriculum. In order to compute the association between the level of attitude score and demographic variables chi-square was applied and the value was observed with 5% significance level. Gender and Education of parent's variable is signified

Were the no one variable found statistically significant association with attitude score about Integration of AI In B.SC Nursing Curriculum with selected demographic

## DISCUSSION

The research study findings have been discussed with relevance to the objectives and with other research study findings assessment finding between the Knowledge and Attitude Regarding Integration of AI In B.SC Nursing Curriculum with Selected Demographic Variable. The significant finding has been stated and the hypothesis has been verified at 0.05 level of significance.

## CONCLUSION

The findings of the present study indicated that the fourth year b.sc nursing students had inadequate knowledge regarding integration of AI in B.sc nursing Curriculum but students have positive attitude . need to conduct more study on integration of AI in B.sc nursing Curriculum to increase clinical skill development. To enhance their knowledge regarding AI.

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