

# KNOWLEDGE REGARDING NURSING INFORMATICS AMONG B.SC NURSING STUDENTS AT COLLEGE OF NURSING SVIMS, TIRUPATI.

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**ABSTRACT:** Nursing is one of the most rewarding professions, but is also one of the most challenging and exhausting professions both physically and emotionally. Advances in technology in nursing are indeed helping to make life easier for nurses. It is good to remember that, in our High-Tech world, the human touch cannot be substituted. Nursing is about combining the art of caring with the science of health care. While the safe use of technology may reduce human error, humans still need to program, input data and ensure proper outcome. **Aim** To assess the knowledge regarding Nursing Informatics among nursing students at college of nursing, SVIMS, Tirupati, To associate the level of knowledge with their selected socio demographic variables regarding nursing informatics among nursing students. **Method:** Total 154 sample were taken Non-Probability Convenient sampling technique. Data was collected by structured Questionnaire **Results:** Majority 95 (61.70%) of the respondents had moderate knowledge, 35 (22.70%) respondents had inadequate knowledge and only 24 (15.60) respondents had adequate knowledge. There is significant association between the level of knowledge regarding nursing informatics related to age, gender, geographic back ground, type of residency, do you have laptop, do you have previous knowledge on nursing informatics were statistically significant at 0.01 level .The Mean knowledge score was 23.55 and the standard deviation was 5.28.**Conclusion:** Based on the obtained findings the researcher prepared a book let which will help them to improve their knowledge on nursing informatics

**Keywords:** Nursing, Nursing informatics, B.Sc. Nursing Students.

## I. INTRODUCTION

Technological advancements in the health care field have always impacted the health care disciplines in a way they are being practiced. Nursing practice has also been greatly influenced by the technology a lot. Very recently the use of information technology, computers, handheld digital devices, internet has advanced the nursing by bridging the gap from nursing as an art to nursing as science. In every sphere of nursing practice, nursing research and nursing education nursing informatics plays a very important role.<sup>1</sup>

Over the past two decades, worldwide dramatic changes have occurred in the nature and extent of communication and use of information technology in nursing. The need for students' nurses to be well prepared for the use and application of information technology in nursing is arguably new paramount. The challenge for training providers to prepare nurses ever – changing technology and technology application in their workplace is highlighted.<sup>2</sup>

Nursing is one of the most rewarding professions, but is also one of the most challenging and exhausting professions both physically and emotionally. Advances in technology in nursing are indeed helping to make life easier for nurses. It is good to remember that, in our high tech world, the human touch cannot be substituted. Nursing is about combining the art of caring with the science of health care. While the safe use of technology may reduce human error, humans still need to program, input data and ensure proper outcome.<sup>3</sup>

The word informatics comes from French word “Informatique” which means “computer science”<sup>4</sup>. Being recognized by **American Nurses Association in 1992**, Nursing informatics is defined as a specialty that integrates nursing science, computer science to manage and communicate data, information and knowledge in nursing practice. Nursing informatics uses data to support patients, nurses and other providers in their decision making in all roles and settings.<sup>5</sup>

#### **NEED FOR THE STUDY:**

In today’s dynamic health system, technology plays an important role in education and nursing work. So, it seems necessary to study the role of nurses and highlight the need for appropriate information technology educational programs to integrate with the ever- increasing pace of technology.<sup>1</sup>

The computer is the most powerful technological tool to transform the nursing profession prior to the 21<sup>st</sup> century. Information and communication technology [ICT] is greatly impacted many parts of the world and has worked to change people’s daily lives, through provision of faster and more convenient communication, easier acquisition of information and its ability to support a better quality of life.<sup>6</sup>

A quantitative descriptive cross- sectional study was conducted to assess the level of knowledge and attitude among 50 staff nurses on nursing informatics in KVM Super Specialty Hospital, Cherthala. Non probability convenient sampling technique was used. Results showed that about 64% of the staff nurses had average knowledge on nursing informatics and 80% had the positive attitude towards nursing informatics. Study concluded that majority of the registered nurses regarded on nursing informatics is a useful tool to improve the nurses’ knowledge and skill on health care technology and to increase the confidence. Study suggested that it is important to incorporate nursing informatics in nursing is necessary<sup>7</sup>

In today’s world the potential for information and communication technology application is increasing so that it can enhance the quality of nursing domains outcome. Nurses have the most communication with patients, and interact with technology more frequently. Using technology should create a positive attitude in nursing productivity. It is essential for nurses to be involved in the initial design of systems to improve the quality of health care and change their culture in this regard.<sup>8</sup>

A cross sectional study was conducted among 108 health workers to assess the knowledge and attitude towards computer applications in rural African health facilities. study results show that 40% were had ever used computers, and 29% had prior computer training. About 80% were computer illiterates or beginners. Most of them [95.3%] were had positive attitude towards computers, average scores [ $\pm$ SD] 37.2 [ $\pm$ 4.9]. The study concluded that most of the health workers in remote rural African primary health facilities had little computer knowledge yet they had positive attitude and expressed willing to adopt the technology.<sup>9</sup>

Mediating technically and technologically on the borderline between medicine and nursing, nurses have become known as the Medical Goddesses in the form of tele nurses. Nurses have got more authority in decision making with the use of new technologies. For successful implementation of the electronic health reporting system, nurses must be knowledgeable about information technology, computer skills and knowledge of informatics. Due to that the investigator interested to do the study.<sup>3</sup>

## II.METHODOLOGY

**Research approach:** Non – experimental research approach was adopted.

**Research design:** Descriptive research design.

**Sample setting:** College of nursing SVIMS, Tirupati.

**Population:** B. Sc Nursing students.

**Sample:** III- & IV-year B.Sc. Nursing Students

**Sample size:** 154.

**Sampling technique:** Non probability convenient sampling technique was adopted.

### CRITERIA FOR SAMPLE SELECTION:

#### Inclusion criteria:

#### B.Sc. Nursing students who are:

- Willing to participate in the study
- Studying III- & IV-year B.Sc. Nursing.

Exclusive criteria:

#### B. Sc Nursing students who are:

- Absent at the time of data collection
- Selected for the reliability and pilot study

**Ethical consideration:** the study was approved by the appropriate Ethical committee. students were informed about the purpose of the study and about their rights to refuse or with drawl at any time.

## III. RESULTS

## SECTION – I

**Table No 1:** Frequency and percentage distribution of demographic variables among nursing students  
N= 154

S. NO	SOCIO DEMOGRAPHIC VARIABLES		FREQUENCY	PERCENTAG
1	Age	18 – 20 years	73	47.40
		21 – 23 years	81	52.60
		Above 24 years	0	0
2	Gender	Male	19	12.30
		Female	135	87.70
3	Religion	Hindu	119	77.30
		Muslim	12	7.80
		Christian	23	14.90
4	Geographic back ground	Urban	76	49.40
		Rural	78	50.60
5	Type of family	Nuclear family	129	83.80
		Joint family	24	15.60
		Extended family	1	0.60
6	Type of residency	Days scholar	36	23.40
		Hostellers	118	76.60
7	Marital status	Married	4	2.60
		Unmarried	150	97.40
8	Do you have laptops	Yes	12	7.80
		No	142	92.20
9	Previous knowledge on nursing informatics	Yes	66	42.90
		No	88	57.10
10	If yes, source of information	Mass media	18	27.30
		Text books	48	72.70

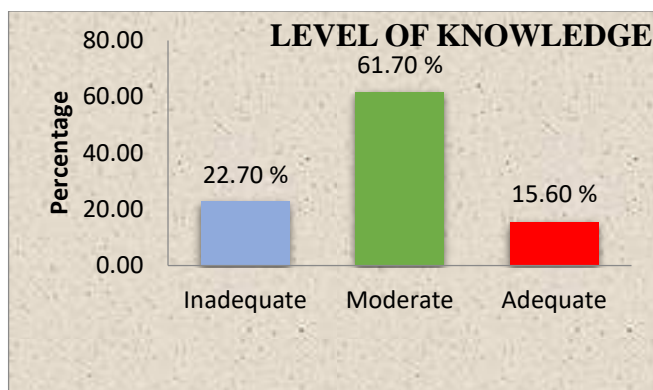
**Table 1:** shows that out of 154 nursing students 81 (52.6%) were age group of 21- 23 years, 135 (87.7%) were females, 119 (77.3%) were Hindu, 78 (50.6%) were residing at rural areas, 129 (83.8%) of nursing students adapted nuclear family, 118 (76.60%) of them were hostellers, 150 (97.40%) were unmarried, 142 (92.2%) were not having laptops; (88 57.1%) were not have previous knowledge regarding nursing informatics and 48 (72.7%) were using text books as a source of information.

## SECTION – II

**Table No 2:** Frequency and percentage distribution of their level of knowledge regarding nursing informatics among nursing students.

S No	Variable	Inadequate knowledge		Moderate knowledge		Adequate knowledge	
		F	%	F	%	F	%
1	Knowledge	35	22.70	95	61.70	24	15.60

**Table2:** shows that 154 nursing students, 95 (61.7%) had moderate knowledge, 35 (22.7%) had inadequate knowledge, 24 (15.6%) had adequate knowledge regarding nursing informatics.



**Figure 1:** Percentage distribution of the level of knowledge on nursing informatics among nursing students

## SECTION – III

## MEAN AND STANDARD DEVIATION

N= 154

S no	Category	Minimum	Maximum	Mean	Standard deviation
1	Knowledge	8	34	23.55	5.28

**Table No 3:** shows that the mean score of knowledge were 23.55 and standard deviation score were 5.28.

## SECTION – IV

**Table No 4:** Association between sociodemographic variables with the knowledge levels regarding nursing informatics among nursing students

N= 154

DEMOGRAPHIC VARIABLES	CATEGORY	N/%	Level of Knowledge			Total	Chi - square	p value
			Inadequate	Moderate	Adequate			
1 Age in years	18-20 years	N	26	43	4	73	19.413**	0.000
		%	74.30%	45.30%	16.70%	47.40%		
	21-23 years	N	9	52	20	81		
		%	25.70%	54.70%	83.30%	52.60%		
2 Gender	Male	N	11	7	1	19	15.445**	0.000
		%	31.40%	7.40%	4.20%	12.30%		
	Female	N	24	88	23	135		
		%	68.60%	92.60%	95.80%	87.70%		

3 Religion	Hindu	N	27	75	17	119	1.425	0.840
		%	77.10%	78.90%	70.80%	77.30%		
	Muslim	N	2	8	2	12		
		%	5.70%	8.40%	8.30%	7.80%		
	Christian	N	6	12	5	23		
		%	17.10%	12.60%	20.80%	14.90%		
4 Geographic back ground	Urban	N	11	42	23	76	26.247**	0.000
		%	31.40%	44.20%	95.80%	49.40%		
	Rural	N	24	53	1	78		
		%	68.60%	55.80%	4.20%	50.60%		
5 Type of family	Nuclear	N	29	81	19	129	1.409	0.843
		%	82.90%	85.30%	79.20%	83.80%		
	Joint	N	6	13	5	24		
		%	17.10%	13.70%	20.80%	15.60%		
	Extended	N	0	1	0	1		
		%	0.00%	1.10%	0.00%	0.60%		
6 Type of Residency	Day scholars	N	0	21	15	36	31.273**	0.000
		%	0.00%	22.10%	62.50%	23.40%		
	Hostellers	N	35	74	9	118		
		%	100.00%	77.90%	37.50%	76.60%		
7 Marital Status	Married	N	2	2	0	4	2.075	0.354
		%	5.70%	2.10%	0.00%	2.60%		
	Unmarried	N	33	93	24	150		
		%	94.30%	97.90%	100.00%	97.40%		
8 Do you have laptop	Yes	N	0	2	10	12	45.563**	0.000
		%	0.00%	2.10%	41.70%	7.80%		
	No	N	35	93	14	142		
		%	100.00%	97.90%	58.30%	92.20%		
9 Do you have previous knowledge on nursing informatics	Yes	N	14	34	18	66	12.179**	0.002
		%	40.00%	35.80%	75.00%	42.90%		
	No	N	21	61	6	88		
		%	60.00%	64.20%	25.00%	57.10%		
10 If yes, Source of Information	Mass Media	N	5	6	7	18	3.316	0.191
		%	35.70%	17.60%	38.90%	27.30%		
	Text books	N	9	28	11	48		
		%	64.30%	82.40%	61.10%	72.70%		

\*\* = significant at 0.01 level \* = significant at 0.05 level

**Table No 4:** shows that there is significant association between level of knowledge regarding nursing informatics related to age, gender, geographic back ground, type of residency, do you have laptop, do you have previous knowledge on nursing informatics were statistically significant at 0.01 level where as remaining demographic variables (religion, type of family, marital status, source of information) are not showing any significant association.

#### IV.DISCUSSION

##### **Objective 1: To assess the knowledge regarding nursing informatics among nursing students.**

Among 154 nursing students 95 (61.7%) had moderate knowledge, and 35 (22.7%) had inadequate knowledge and 24 (15.6%) had adequate knowledge.

The findings were supported by a study conducted by **Farahnaz Sadoughi, Morteza Hemmat et al, (2017)** on Assessment of Health Information Technology Knowledge, Attitude, and Practice among 250 staffs of 5 teaching hospitals assigned into three subgroups of medical doctors (n = 70), medical students (n = 46), and health record staff (n = 134) in Tehran, Iran. The results showed that A total of 38.6% responders had poor level of knowledge, 33.3 % responders had fair knowledge, and then 28.1% responders had a good level of knowledge towards computer science.<sup>10</sup>

##### **Objectives 2: To associate the level of knowledge with their selected socio demographic variables on nursing informatics among nursing students.**

There is significant association between the variables like age, gender, geographic back ground, type of residency, having own laptops, previous knowledge on nursing informatics at  $p < 0.01$  level.

In relation to association between demographic variables and knowledge levels, the findings were supported by a study conducted by **P M Arulmozhi Baskaran, Prasanna Baby (2015)** A Quantitative Descriptive Study was conducted on to Assess the Knowledge and Attitude of 60 staff nurses in ESIC Medical College & Model Hospital at Rajajinagar, Bangalore. The convenient sampling was used for the study. The findings of the study showed significant association between level of knowledge and with their socio – demographic variables such as education and years of experience at  $p < 0.05$  level.<sup>11</sup> **Hence null hypotheses is rejected.**

#### V. CONCLUSION:

In this study most of the nursing students had moderate knowledge on nursing informatics. There was significant association between level of knowledge of nursing informatics related to age, gender, geographic back ground, type of residency, do you have laptop, do you have previous knowledge on nursing informatics were statistically significant at 0.01 level where as remaining demographic variables (religion, type of family, marital status, source of information) are not showing any significance. These findings suggested that structured teaching Programme is required in order to gain knowledge on nursing informatics among nursing students, these will help them for their future development.

#### RECOMMENDATIONS:

- ◆ A similar study can be conducted on a large sample size.
- ◆ Study can be extended to assess the attitude and practice on nursing informatics among health care team.
- ◆ A comparative study can be conducted to assess the knowledge on nursing informatics among nursing students

- ◆ A similar study can be conducted at different colleges.
- ◆ A Structured teaching Programme can be conducted regarding nursing informatics among health care team.

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