

# A Descriptive Study to Assess the Knowledge and Practice Related to Ryle's Tube Among B.Sc. Nursing 6th Semester Students in Selected Nursing Colleges Jhansi

Prof. Dr. Madhusoodan<sup>1</sup>, Ms. Ayushi Sharma<sup>2</sup>, Ms. Abha Singh<sup>3</sup>,  
Ms. Jagriti Sonkar<sup>4</sup>, Ms. Kritika Rai<sup>5</sup> and Mr. Abhijeet Kumar<sup>6</sup>

Principal, MLB Govt. Paramedical Training College, Jhansi, UP<sup>1</sup>  
MLB Govt. Paramedical Training College, Jhansi, UP<sup>2-6</sup>

[madhuisjaipur@gmail.com](mailto:madhuisjaipur@gmail.com)

**Abstract:** Ryle's tube, or nasogastric tube, is a flexible tube inserted through the nose into the stomach. It is used for feeding, gastric decompression, medication administration, and aspiration of gastric contents. In clinical settings, nurses are primarily responsible for insertion, confirmation of placement, maintenance, and monitoring for complications.

Incorrect insertion or failure to confirm placement can lead to serious adverse events, including aspiration pneumonia, pneumothorax, oesophageal perforation, and even death.

Despite the importance of this procedure, multiple studies have reported gaps between theoretical knowledge and clinical practice among nursing students. Students may know the steps conceptually but struggle with confirmation of placement, patient positioning, and management of complications.

Assessing knowledge and practice levels among nursing students provides baseline data on current competency. It helps identify specific areas of weakness, such as inability to differentiate between tracheal and oesophageal placement, or poor documentation.

**Materials and Methods:**

A descriptive research design to find out knowledge and practice of Ryle's tube among 6th semester students. Self-constructed tool was prepared including demographic information, knowledge related questions in each phase of procedure, including complication in form of MCQ's and three point Likert scale for assessment of practice. Content validity was done by various experts and reliability was calculated by statistical method i.e  $r = 0.93$  and then pilot study was conducted on 10% of samples that was found appropriate. The study conducted on 60 samples. Data was collected in the month of May 2026. Data was collected using structured questionnaire to find out knowledge and practice of about Ryles tube.

**Results:** In the finding of the study, knowledge of the respondents 60 (100%) had good level of knowledge related to Ryle's tube. For practice, 55(92%) were competent and 5(8%) were moderately competent. A moderate positive correlation was found between knowledge and practice scores,  $r = 0.502$ ,  $p < 0.05$ . Significant association was not found between knowledge of Ryle's tube with Age, Gender, Previous clinical exposure,  $p < 0.05$ , therefore null hypothesis  $H_0$  is accepted. The table shows that the five demographic variables show statistically significant association with level of practice regarding Ryle's tube among B.Sc. Nursing 6th semester students at  $p < 0.05$  level. Calculated value is more than  $p$  value, hence there is association between practice regarding Ryle's tube among B.Sc. Nursing 6th semester students with selected demographic variables, therefore research hypothesis  $H_3$  is accepted.

**Conclusion:** The study revealed gaps between knowledge and practice levels among nursing students



*related Ryle's tube. Despite having good theoretical knowledge, practice competence was moderate in a slightly significant portion of students. Findings suggest the need for increased supervise clinical practice, simulation- based training and periodic skill assessment to improve competency and ensure patient safety.*

**Keywords:** Ryle's Tube, Knowledge, Practice

## I. INTRODUCTION

Many patients are unable to eat, while others are malnourished and therefore may need nutritional support. Encouraging adequate consumption of a well-balanced diet, possibly supplemented with additional snacks and nutritious drinks, is the simplest and cheapest means of providing effective nutritional care to such patients, enteral feeding may be required. In the short-term, this may mean feeding through a nasogastric or Naso jejunal tube.

A Ryle's tube (nasogastric tube) is a flexible, medical-grade tube inserted through the nose into the stomach to facilitate enteral feeding, medication administration, or gastric decompression. Primarily used for patients unable to eat normally, it allows for aspiration of contents and is crucial in critical care and post-operative.

For longer periods, permanent feeding access is indicated, most commonly through a gastrostomy. Percutaneous endoscopic gastrostomy is a minimally invasive technique that places a feeding tube into the stomach or jejunum and is considered to be relatively simple and safe, while causing minimal discomfort. Thus, enteral feeding is increasingly used to ensure patients meet their nutritional needs in hospital and the community.

The procedure requires adequate theoretical knowledge and skilled practice to ensure patient safety and effectiveness. Improper insertion or management of a Ryle's tube can lead to serious complications such as aspiration, infection, trauma to the nasal mucosa, and incorrect placement. Therefore, it is important for nursing students to acquire competency in both knowledge and practice during their training period.

The Ryle's tube, a type of nasogastric (NG) tube, was developed by English physician John Alfred Ryle of Guy's Hospital. Originally crafted from rubber for aspiration, modern versions are made of non-toxic PVC or polyurethane, featuring radiopaque tips for imaging, and are primarily used for enteral feeding, gastric decompression, and medication administration.

### Objectives of Study:

- To assess the knowledge of Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students.
- To assess the practice regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students.
- To determine the co-relation between knowledge and practice regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students.
- To find association between knowledge of Ryle's tube with selected demographic variables among B.Sc. Nursing 6<sup>th</sup> semester students.
- To find association between practice of Ryle's tube with selected demographic variables among B.Sc. Nursing 6<sup>th</sup> semester students.

### Materials and Methods:

A descriptive survey research design to assess the knowledge and practice regarding Ryle's tube among B. Sc. Nursing 6th semester students. The study conducted on 60 student nurses. Data was collected in the month of May 2026. Data was collected using structured questionnaire to assess the knowledge and practice regarding Ryle's tube among B. Sc. Nursing 6th semester students.

Phase (1) - A descriptive survey approach was adopted to assess the demographic data.

Phase (2) - In Phase II of the study a survey approach was used to assess the knowledge and practice regarding Ryle's tube among student nurses. A



**Section I**

Demographic variable were analyzed by frequency and percentage.

**Section II**

Descriptive statistics like percentage distribution was calculated to analyze the knowledge with regard to Ryle’s tube.

Descriptive statistics like percentage distribution was calculated to analyze the practice with regard to Ryle’s tube.

**Section III**

Correlation between knowledge and practice with Karl Pearson’s co-efficient of correlation is used.

**Section IV**

Chi square is computed to determine association of participant’s knowledge about Ryle’s tube with personal demographic variables.

Chi square is computed to determine association of participant’s practice about Ryle’s tube with personal demographic variables.

**Statistical methods**

The significance was calculated by using mean, standard deviation, unpaired t statistics, paired t statistics for comparison and the Chi-square statistics is used to find the independence of difference. Significance was accepted at 0.01 and 0.05 level of probability.

**RESULTS**

**Section I: Description of Frequency distribution of demographic variables**

Findings of section I table 1 shows that out of 60 Samples Majority of the Student nurses belonged to 11(17.9%) aged between 18 – 20 years, 43(71.6%) were aged between 21 – 23 years and 6(10.4%) were aged between 24 and above years.

Considering the gender of the students, 13(22.1%) were male, 47(77.9%) were Female and 0(0%) were Prefer not to say.

Regarding the type of nursing college, 60(100%) were government students and 0(0%) were private students.

The findings related to received training on Ryle’s tube procedure, 30(50%) had received training and 30(50%) had not received training.

The findings related to number of times student have performed Ryle’s tube insertion, 37(61.8%) had never, 18(30.9%) had done 1-3 times, 2(2.9%) had done 4-6 times and 3(4.4%) had done more than 6 times.

Considering the source of knowledge about Ryle’s tube, 26(43.9%) had classroom teaching, 19(31.8%) had clinical practice, 14(22.7%) had skill lab and 1(1.5%) had workshops/seminars.

Table 1 Description of Socio demographic data of Student Nurses

N=60

S. No	Socio Demographic Variable	Respondents	
		Frequency	Percentage
1	<b>Age in Years</b>		
	20-25	09	18
	26-30	21	42
	31-35	20	40
2	<b>Gender</b>		
	Male	14	28
	Female	36	72
3	<b>Educational Status</b>		
	GNM	14	28
	B. Sc. (N)	36	72
4	<b>Current residence</b>		



	Hospital	00	00
	Rented	38	76
	Own	12	24
5	<b>Religion</b>		
	Hindu	28	56
	Christian	22	44
	Muslim	00	00
6	<b>Previous Source of information</b>		
	During class period	36	74
	In service education	14	26

**SECTION B: Frequency and percentage distribution of knowledge regarding Ryle's tube**

TABLE-2: Frequency and percentage distribution of knowledge regarding Ryle's tube.

N=60

Knowledge	Frequency	Percentage
Poor (0-26)	0	0
Average (27-52)	0	0
Good (53-78)	60	100

Table 2 shows overall knowledge depicts the frequency and percentage distribution of level of knowledge regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester. It revealed that among students, 0(0%) were poor knowledge, 0(0%) had average knowledge and 60(100%) had good knowledge regarding Ryle's tube among students

**SECTION B: Frequency and percentage distribution of practice regarding Ryle's tube**

TABLE – 3: Depicts the Frequency and percentage distribution of practice regarding Ryle's tube

N=50

Level of Practice	Frequency	Percentage
Poor (0-20)	0	0
Average (21-40)	5	8
Good (41-60)	55	92

Table 3 shows that the frequency and percentage distribution of level of practice regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students. It shows that among students, 0(0%) had poor practice, 5(8%) had average practice and 55(92%) had good practice regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students.

**SECTION-C: Correlation between knowledge and practice regarding Ryle's tube.**

TABLE – 4 Correlation between knowledge and practice regarding Ryle's tube.

N=60

Variables	Mean	S.D	Karl Pearson's Correlation "r" & p-value
Knowledge	73.05	3.49	r = 0.502 p<0.001, S
Practice	56.13	8.59	

The above table 4 denotes the correlation between knowledge and practice regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students Karl Pearson's Correlation.

It depicts that the mean score of knowledge regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students was 73.05 and the mean score of practice was 56.13. The calculated Karl Pearson's Correlation value of r = 0.502 shows a mild positive correlation between knowledge and practice statistically significant at p<0.001 level which infers that when



knowledge regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students improves or increases then their practice towards Ryle's tube also improves. **Therefore research hypothesis H<sub>1</sub> is accepted.**

**SECTION-D: Association of knowledge regarding Ryle's tube among 6<sup>th</sup> Semester B. Sc. Nursing students with selected demographic variables.**

TABLE – 5 Association of knowledge regarding Ryle's tube among 6<sup>th</sup> Semester B. Sc. Nursing students with selected demographic variables.

N=60

Demographic Variables	Poor Knowledge		Average Knowledge		Good Knowledge		Chi-Square & p-value
	F	%	F	%	F	%	
<b>Age (in years)</b>							
18 – 20 years	0	0	0	0	11	17.9	$\chi^2=0$ d.f=4 p=9.49 N.S
21 – 23 years	0	0	0	0	43	71.6	
24 & above	0	0	0	0	6	10.4	
<b>Gender</b>							
Male	0	0	0	0	13	22.1	$\chi^2=0$ d.f=4 p=9.49 N.S
Female	0	0	0	0	47	77.9	
Prefer not to say	0	0	0	0	0	0	
<b>Type of Nursing College</b>							
Government	0	0	0	0	60	100	$\chi^2=0$ d.f=2 p=5.99 N.S
Private	0	0	0	0	0	0	
<b>Have you received training on Ryle's tube procedure</b>							
Yes	0	0	0	0	30	50	$\chi^2=0$ d.f=2 p=5.99 N.S
No	0	0	0	0	30	50	
<b>Number of times you have performed Ryle's tube insertion</b>							
Never	0	0	0	0	37	61.8	$\chi^2=0$ d.f=6 p=12.59 N.S
1–3 times	0	0	0	0	18	30.9	
4–6 times	0	0	0	0	2	2.9	
More than 6 times	0	0	0	0	3	4.4	
<b>Source of knowledge about Ryle's tube</b>							
Classroom teaching	0	0	0	0	26	43.9	$\chi^2=0$ d.f=6 p=12.59 N.S
Clinical practice	0	0	0	0	19	31.8	
Skill lab	0	0	0	0	14	22.7	
Workshops/seminars	0	0	0	0	1	1.5	

The table 5 presents the association of level of knowledge regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students with selected demographic variables using chi-square test.

The table shows that the demographic variables did not show statistically significant association with level of knowledge regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students related to Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students at p<0.05 level.

Calculated value is less than p value, hence there is no association between knowledge regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students with selected demographic variables, **therefore null hypothesis H<sub>01</sub> is accepted.**



**SECTION-E: Association of Practice regarding Ryle's tube among 6<sup>th</sup> Semester B. Sc. Nursing students with selected demographic variables.**

TABLE – 6 Association of Practice regarding Ryle's tube among 6<sup>th</sup> Semester B. Sc. Nursing students with selected demographic variables.

N=60

Demographic Variables	Poor		Average		Good		Chi-Square & p-value
	F	%	F	%	F	%	
<b>Age (in years)</b>							$\chi^2=1.46$
18 – 20 years	0	0	1	1.66	10	16.66	d.f=4
21 – 23 years	0	0	4	6.66	39	65	p<0.05
24 & above	0	0	0	0	6	10	S
<b>Gender</b>							$\chi^2=1.32$
Male	0	0	0	0	13	21.66	d.f=4
Female	0	0	5	8.33	42	70	p<0.05
Prefer not to say	0	0	0	0	0	0	S
<b>Type of Nursing College</b>							$\chi^2=0$
Government	0	0	5	8.33	55	91.66	d.f=2
Private	0	0	0	0	0	0	p<0.05 N.S
<b>Have you received training on Ryle's tube procedure</b>							$\chi^2=21.93$
Yes	0	0	2	3.33	28	46.66	d.f=2
No	0	0	3	5	27	45	p<0.05 S
<b>Number of times you have performed Ryle's tube insertion</b>							$\chi^2=2.98$
Never	0	0	3	5	34	56.66	d.f=2
1–3 times	0	0	2	3.33	16	26.66	p<0.05
4–6 times	0	0	0	0	2	3.33	S
More than 6 times	0	0	0	0	3	5	
<b>Source of knowledge about Ryle's tube</b>							$\chi^2=100.646$
Classroom teaching	0	0	3	5	23	38.33	d.f=6
Clinical practice	0	0	2	3.33	17	28.33	p<0.05
Skill lab	0	0	0	0	14	23.33	S
Workshops/seminars	0	0	0	0	1	1.66	

The table 6 indicated the association of level of practice regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students with selected demographic variables using chi-square test.

The table shows that the demographic variables did not show statistically significant association with level of practice regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students at p<0.05 level.

Calculated value is more than p value, hence there is association between practice regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students with selected demographic variables, **therefore research hypothesis H<sub>3</sub> is accepted.**

**Discussion**

Distribution of demographic variables of nursing students shows that most of the nursing students, 43(71.6%) were aged between 21 – 23 years, 11(17.9%) were 18-20 years and only 6(10.4%) were 24 and above. 47(77.9%) were females and 13(22.1%) were males, 60(100%) were government college students. 30(50%) had received training and 30(50%) had not received training on Ryle's tube procedure, 37(61.3%) had never performed, 18(30.9%) had



performed 1-3 times, 2(2.9%) had performed 4-6 times and 3(4.4%) had performed more than 6 times Ryle's tube insertion. 26(43.9%) were classroom teaching, 19(31.6%) were clinical practice, 14(22.7%) were skill lab and 1(1.5%) were workshops/seminars source of knowledge.

Level of knowledge regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students. The assessment of level of knowledge showed that majority of the nursing students, 60(100%) had good knowledge regarding Ryle's tube.

Level of practice among B.Sc. Nursing 6<sup>th</sup> semester students regarding Ryle's tube. Majority of the nursing students, 55(92%) had good practice and 5(8%) average practice towards Ryle's tube.

The findings showed that a mild positive correlation was found between knowledge and practice statistically significant at  $p < 0.001$  level which infers that when knowledge regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students improves or increases then their practice on it also increases or changes positively.

Findings revealed that statistically no significant association was observed between the demographic variables with level of knowledge regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students at  $p < 0.05$  level.

The findings revealed that statistically no significant association was observed between the demographic variables with level of practice regarding Ryle's tube among B.Sc. Nursing 6<sup>th</sup> semester students at  $p < 0.05$  level.

## **II. CONCLUSION**

The conclusions were drawn on the basis of the findings of the study on Knowledge is an important component to empower students to be cognizant of their status and the importance of appropriate practice. This study was conducted to assess the knowledge and practice related to Ryle's Tube among the students.

The present study was to assess the knowledge and practice regarding Ryle's Tube among 6<sup>th</sup> semester B. Sc. Nursing students at selected college of Jhansi district.

### **Implications**

The findings of the study have certain important implications for the nursing profession in the field of Nursing Practice, Nursing Education, Nursing Administration, Nursing Research and Community Health Nursing.

The Nursing Practice Act (NPA) defines the practice of nursing as those functions including "basic health care, that help people cope with difficulties in daily living that are associated with their actual or potential health or illness problems or the treatment thereof, and that require a substantial amount of scientific knowledge or technical skill including all of the following: direct and indirect patient care services."

### **NURSING EDUCATION:-**

Within the nursing education literature, Ryle's Tube is well described as a tool selected by faculty for diverse formal teaching and learning purposes. For instance, several studies described using blogging to facilitate reflections as a teaching strategy for topics such as cultural competence, empathy, the therapeutic relationship, transitions to practice, and self-care during growing age helps to increase the visibility of the nursing profession and the critical role that nurses are playing in our health care systems and communities worldwide. Clinical skill & competency training programme is a platform that can assist nursing faculty to help nursing students to gain greater understanding of communication, professionalism, healthcare policy, and ethics.

### **NURSING PRACTICE:-**

Proper knowledge regarding Ryle's Tube helps to increase the visibility of the nursing profession and the critical role that nurses are playing in our health care systems and communities worldwide. Providing the best care with a Ryle's tube requires meticulous attention to tube placement, preventing blockages and patient hygiene. Following standardized procedures and strict infection control protocols protects patients from severe complication while safeguarding your license and professional standing. Adopting specific best practices in your daily workflow helps nurses safeguard patients, themselves and the profession. Avoid posting anything that could be considered unprofessional or inappropriate, such as photos or videos of patients. Adhere to it across all the care systems that you choose to use.



**NURSING ADMINISTRATION:-**

Knowledge and practice on Ryle's tube among nursing students possess tremendous potential for strengthening professional relationships and providing valuable information to health care consumers. However, the inappropriate use of service available for enhancing knowledge of importance of Ryle's tube care by nurses is causing concern among educators, employers, and regulators, and nursing organizations are beginning to develop guidelines. The nurse administrator should manage various educational initiatives in healthcare networks and clinics. Nurse Managers should encourage their staff to develop and oversee patient education initiatives.

Nurse Managers need to motivate and encourage nursing staff and nursing students to participate in interventional programmes.

**NURSING RESEARCH:-**

Good clinical skill practice and knowledge possess tremendous potential for strengthening professional relationships and providing valuable information to health care consumers. However, the lacking of knowledge about Ryle's Tube among students as well as nurses is causing concern among educators, employers, and regulators and nursing organizations are beginning to develop guidelines.

The primary goal of nursing investigations is to advance nurses' expertise and widen the field of nursing. The impetus to perform additional studies should come from nurses. This research can serve as a foundation for future investigations into the treatment of burnout syndrome.

**REFERENCES**

- [1]. Sharma, S. K. Textbook of Nursing Procedures. New Delhi: Jaypee Brothers Medical Publishers; 2017.
- [2]. Potter, P. A., & Perry, A. G. Clinical Nursing Procedures. Elsevier Publications; 2021.
- [3]. Kozier, B., Erb, G., Berman, A., & Snyder, S. Fundamentals of Nursing: Concepts, Process and Practice. Pearson Education; 2020.
- [4]. Hinkle, J. L., & Cheever, K. H. Brunner & Suddarth's Textbook of Medical Surgical Nursing. Wolters Kluwer; 2021.
- [5]. Parul Datta. Ward Procedures. New Delhi: Jaypee Brothers Medical Publishers; 2018.
- [6]. TNAI. Techniques in Clinical Nursing. New Delhi: TNAI Publications; 2019

