A Comparative Study to Assess the Effectiveness of H$_2$receptor Antagonist (Ranitidine) Versus Proton Pump Inhibitors (Pantaprazole) Among Patient With Gastro Esophageal Reflex Disease In SMVMCH At Puducherry".

Ms. C. Shanthi[1], Dr. R. Sridevi[2] DR, S. Narmatha[3,] Mrs. G. Sathyavathy[4].

[1]UG Student, Sri Manakula Vinayagar Nursing College Puducherry – 605 107
[2]Professor in Nursing Department of Medical Surgical Nursing, SMVNC,
Puducherry – 605107
[3]Associate Professor, Department of Medical Surgical Nursing, SMVNC,
Puducherry – 605107
[4]Corresponding Author: Mrs. G. Sathyavathy - Gmail id: sathyavathyg@smvnc.ac.in

I. INTRODUCTION

"One of the fastest way to improve your health is to eat slowly"

- Mokokoma Mokhonoana.

(GERD) is a chronic condition in which stomach contents and acid rise up into the esophagus. Gastro esophageal reflux disease occurs when stomach acid repeatedly flows back into tube connecting the mouth and stomach (esophagus). This backwash of acid reflux can irritate the lining of esophagus.

Antacids are drugs can help neutralize acid in the esophagus and stomach and stop heartburn. H$_2$ receptor for chronic reflex and heartburn, the medicine to reduce acid in stomach. These medicines include H$_2$ blocker, which help block acid secretion. H$_2$ blockers include: cimetidine (Tagamet), famotidine (Pepcid) , and nizatidine.

Ranitidine is a histamine H$_2$ antagonist used to treat duodenal ulcers, gastric ulcers, GERD, and erosive esophagitis H$_2$ antagonist, and also called H$_2$ blockers, are a class of medications that block the action of histamine of the parietal cells in the stomach. This decreases the production of stomach acid. H$_2$ antagonist can be used in the treatment of dyspepsia, peptic ulcers and gastroesophageal reflux disease.

Proton pump inhibitors (PPIs) also known as acid pumps, these drugs block a protein needed to make stomach acid. PPIs include dexlansoprazole (Dexilant), esomeprazole (Nexium), lansoprazole (Prevacid), omeprazole (Prilosec), omeprazole/sodium bicarbonate (Zegerid), pantoprazole (Protonix), and rabeprazole (Aciphex). Medications available for treating these acid-related diseases are proton pump inhibitors (PPIs), histamine-2 receptor antagonists

(H$_2$RA), antacids, sucralfate and prostaglandin analogues.Patient should take a PPI for minimum 12 weeks for healing of esophagitis and for maximum up to 48 weeks for symptom control.PPIs are highly effective in healing esophagitis and for GERD symptom control.

II. REVIEW OF LITERATURE:

Medina Duvnjak (2002) this study was to evaluate the efficacy of a proton pump inhibitor pantoprazole in acute healing of reflux esophagitis in comparison to the H2, receptor antagonist ranitidine. A clinical study consisting of two phases was performed. The first phase was an open-label controlled trial where outpatients with gastroesophageal reflux disease and Savary-Miller grade II or III were randomized into two parallel groups. Group A received pantoprazole (1 × 40 mg daily), while group B received ranitidine (2 × 150 mg daily) for 4 to 8 weeks. Patients from group B who did not respond to ranitidine therapy after 8 weeks were enrolled in the second phase where efficacy of pantoprazole was compared to ranitidine in the same patient. Clinical assessments and endoscopies were performed regularly.. Following 8 weeks of therapy, healing rate was 92.0% for the pantoprazole and 59.5% for the ranitidine group. In the second phase performed in patients resistant to ranitidine therapy, complete healing was achieved in all patients with grade I or II, while grade III and IV patients experienced improvement in their clinical status following 8 weeks of therapy. Therefore, this trial demonstrated pantoprazole to be highly effective and significantly superior to ranitidine in acute treatment of patients with gastroesophageal reflux disease.

STATEMENT OF THE PROBLEM:
"A comparative study to assess the effectiveness of h2receptor antagonist (Ranitidine) versus proton pump inhibitor (Pantaprazole) among patient with gastro esophageal reflex disease in SMVMCH at Puducherry."

OBJECTIVES:
- The study aimed to compare the efficiencies of H2 receptor antagonist and proton pump inhibitor on treatment of GERD patients.
- To assess the effectiveness of H2 receptor antagonist (ranitidine) versus Proton pump inhibitors (Pantaprazole) on treatment of GERD
- To associate the drugs used in effectiveness of gastro Esophageal reflex disease among selected demographic variables.

ASSUMPTION:
- The tool prepared for the study will be sufficient for collecting information effectiveness of H_2 receptor antagonist (ranitidine) versus Proton pump inhibitors (Pantaprazole) on treatment of GERD.
- To compare the ranitidine and pantaprazole to find out effectiveness of treatment for gastro esophageal reflex disease.

III.   MATERIALS AND METHODS:
The research approach used for this study was quantitative research approach.An descriptive research design was used to assess the effectiveness of H_2 receptor antagonist (Ranitidine) versus proton pump inhibitor (Pantoprazole) among patient with gastroesophageal reflex disease in SMVMCH at Puducherry. By using convenient sampling technique 60 sample was selected for the present study. The tool consists of demographic data and questionnaire.
- **Section A:** Socio demographic Variables: Age, gender, Religion, educational Status, occupational Status, marital Status, dietary habits, bad habits.
- **Section B:** Diclomotous questions to assess the effectiveness of Ranitidine verus pantaprazole for GERD patients in medical, surgical ward and OPD at SMVMCH, Puducherry. It consists of 60 items, each correct answer carries one mark.

SCORING INTEPRETATION:

LEVEL OF KNOWLEDGE	SCORING	PERCENTAGE
Inadequate knowledge	0-10	23(46%)
Moderate knowledge	11-20	18(36%)
Adequate knowledge	21-30	9(18%)

RESEARCH APPROACH:
A quantitative research approach was adapted for this study.
RESEARCH DESIGN:
A descriptive Research design was adapted for this study.
POPULATION:
The target population for this study comprises of patients visiting medical surgical ward and OPD at SMVMCH, Puducherry.
SAMPLE:
The study samples consist of patients visiting medical surgical ward and OPD at SMVMCH, Puducherry who fulfill the inclusion criteria.
SAMPLE SIZE
Sample size consists of 60 patients visiting medical surgical ward and OPD at SMVMCH, Puducherry
SAMPLING TECHNIQUE:
A purposive sampling technique is used for the present study.

SETTING OF THE STUDY:
The study was conducted at SMVMCH, Puducherry.
SAMPLE SELECTION CRITERIA:
Inclusion criteria:
- Patients who are all having gastroesohageal reflux disease
- Patients who are taking Ranitidine and pantaprazole or both

- Patients who willing to participate in the study.

Exclusion criteria:
- Patients not willing to participate in the study.
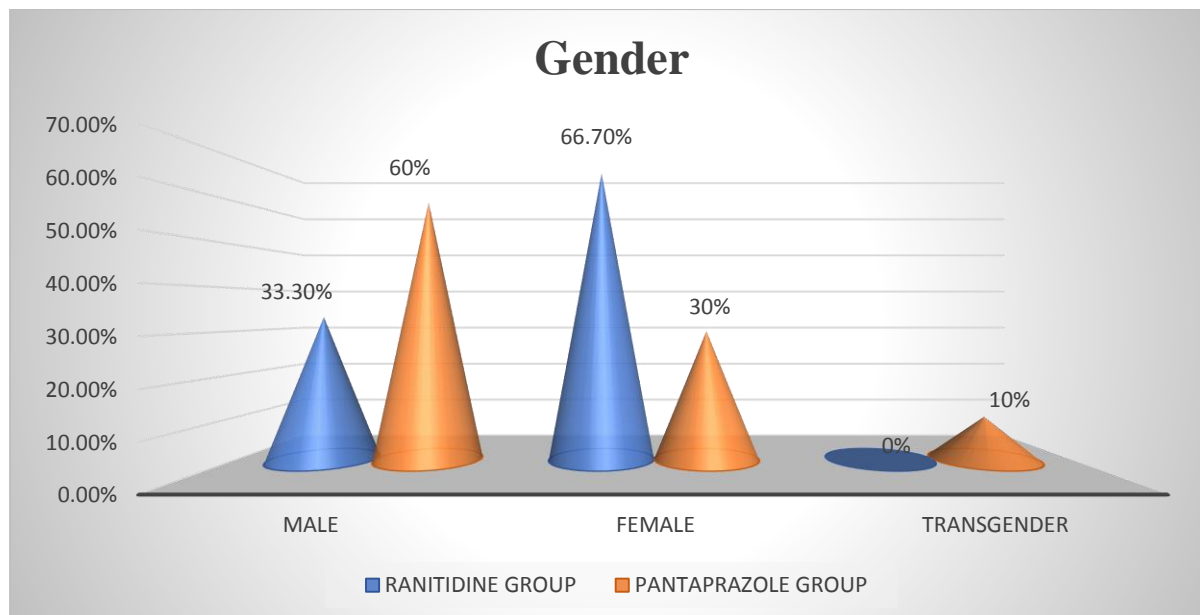- Patients who having diseases other than GERD and asthma.

IV.   RESULTS:

The findings of study revealed data collected from *60 (30+30) to assess the effectiveness of h2 receptor antagonist (Ranitidine) versus proton pump inhibitor (pantaprazole) among patient with gastro esophageal reflex disease in SMVMCH at Puducherry.* Shows that, the mean score of Comparison of effectiveness of level of knowledge regarding among patient with gastro esophageal reflex disease in **H2 receptor antagonist (ranitidine)** group was 16.57+3.39 and the mean score in the **Proton pump inhibitors (Pantaprazole) group** was 19.67+4.83. The calculated *independent 't' test* value of t = -2.87 shows *statistically highly significant difference* difference between level of knowledge regarding H2 receptor antagonist (ranitidine) versus Proton pump inhibitor.

Table :1 Frequency and percentage wise distribution of demographic variables among patient with gastro esophageal reflex disease in H2 receptor antagonist (ranitidine) versus Proton pump inhibitors (Pantaprazole)   (N=60 (30+30))

S.NO	DEMOGRAPHIC AND CLINICAL VARIABLES		RANITIDINE GROUP		PANTAPRAZOLEGROUP	
			N	%	N	%
1	**Age (in years)**					
	a.)	15 to 25 years	14	46.7	7	23.3
	b.)	26 to 35 years	3	10	12	40
	c.)	36 to 45 years	5	16.7	5	16.7
	d.)	Above 45 years	8	26.6	6	20
2	**Gender**					
	a.)	Male	10	33.3	18	60
	b.)	Female	20	66.7	9	30
	c.)	Transgender	0	0	3	10
3	**Religion**					
	a)	Hindu	28	93.3	7	23.3
	b)	Muslim	2	6.7	13	43.3
	c)	Christian	0	0	8	26.7
	d)	Others	0	0	2	6.7
4	**Educational status**					
	a.)	Illiterate	7	23.3	5	16.7
	b.)	Primary education	3	10	12	40
	c.)	Secondary education	3	10	11	36.7
	d.)	Degree and above	17	56.7	2	6.7
5	**Residency**					
	a.)	Urban	20	66.7	19	63.3
	b.)	Rural	10	33.3	11	36.7
6	**Marital status**					
	a.)	Married	9	30	20	66.7
	b.)	Unmarried	20	66.7	8	26.7
	c.)	Widow	1	3.3	2	6.7
	d.)	Separated	0	0	0	0
7	**Occupation**					
	a.)	Business	1	3.3	10	33.3

	b.)	Daily wages	4	13.4	3	10
	c.)	Unemployed	12	40	7	23.4
	d.)	Salaried	13	43.3	10	33.3
8	**Income**					
		a) Rs.<5000	17	56.7	8	26.7
		b) Rs.5001 to 10000	8	26.7	13	43.3
		c) Rs.10001 to 15000	4	13.3	1	3.3
		d) Rs.15001 and above	1	3.3	8	26.7
9	**Diet pattern**					
	a.)	Vegetarian	7	23.3	9	30
	b.)	Non vegetarian	23	76.7	21	70
10	**Is there any history of GERD in family?**					
	a.)	Yes	5	16.7	13	43.3
	b.)	No	25	83.3	17	56.7
11	**Previous knowledge about medications of Ranitidine and Pantaprazole used for GERD?**					
	a.)	Yes	14	46.7	18	60
	b.)	No	16	53.3	12	40
12	**Source of information regarding GERD**					
	a.)	Teachers	8	26.7	7	23.3
	b.)	Mass media	4	13.3	4	13.3
	c.)	Health care providers	17	56.7	15	50
	d.)	Others	1	3.3	4	13.4

Educational status

Previous knowledge about medications of Ranitidine and Pantaprazole used for GERD
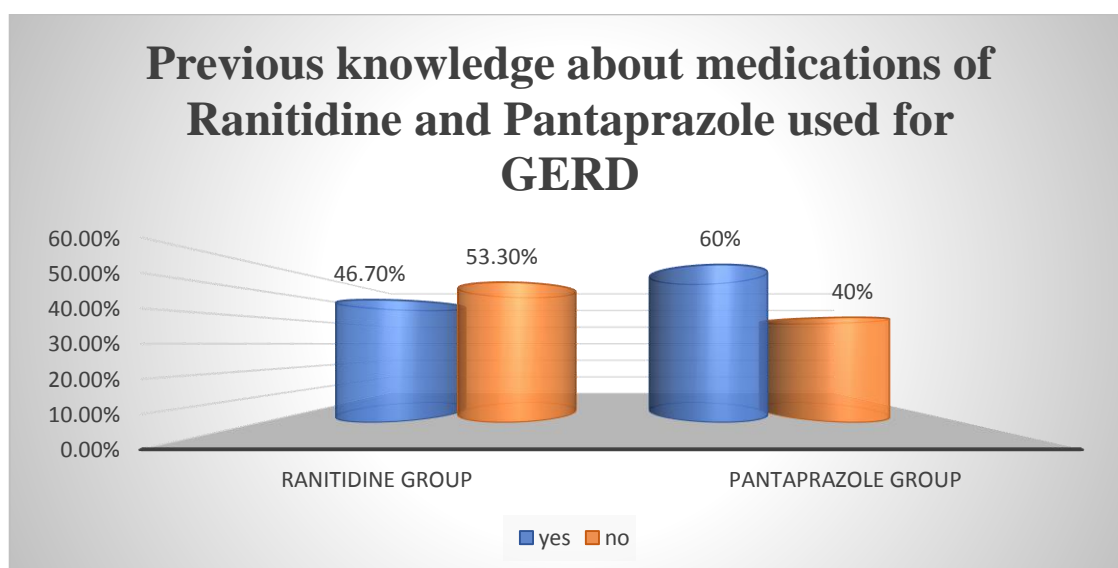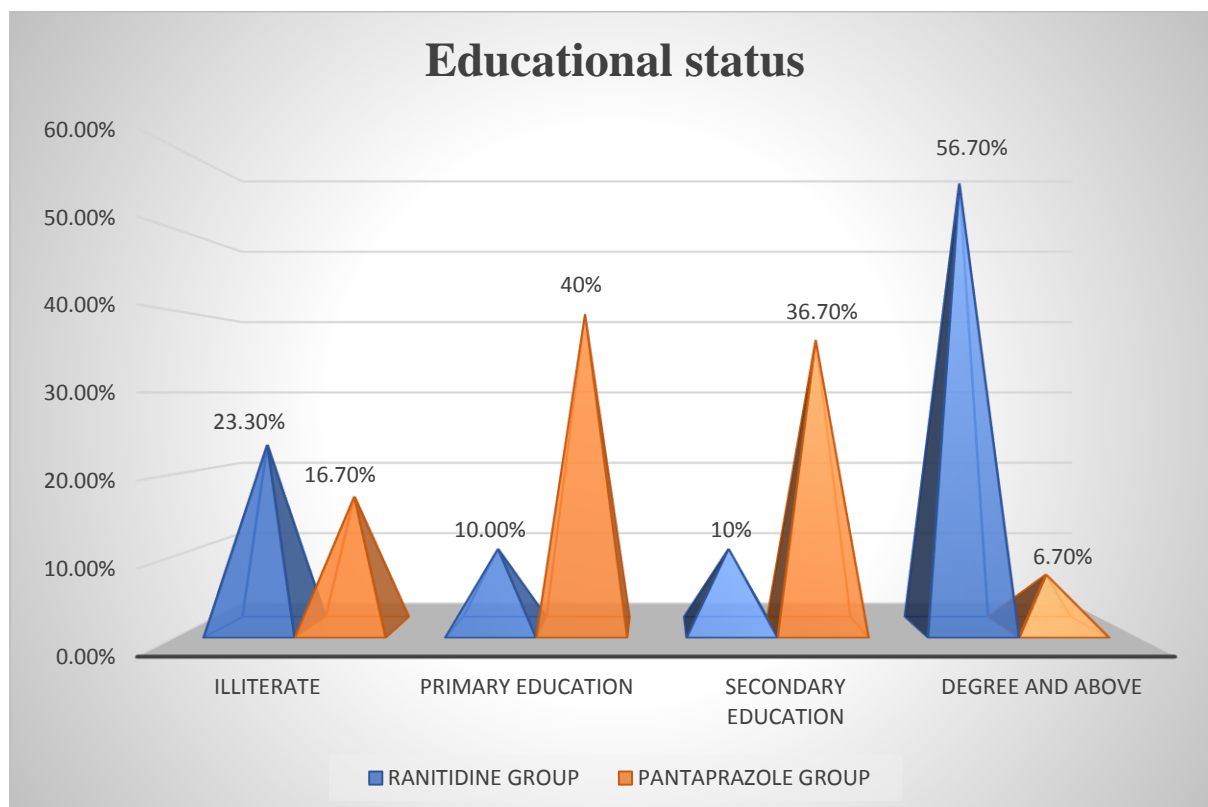

Table 2: Frequency and percentage wise distribution of level of knowledge regarding H2 receptor antagonist (ranitidine) among patient with gastro esophageal reflex disease.

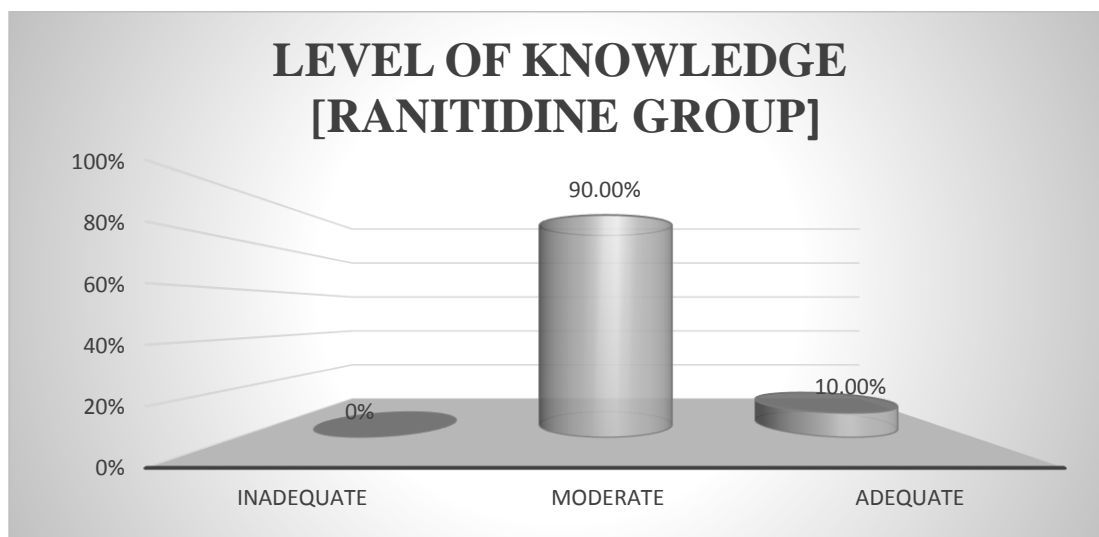| RANITIDINE GROUP LEVEL OF KNOWLEDGE	FREQUENCY (n)	PERCENTAGE (%)
Inadequate	0	0
Moderate	27	90
Adequate	3	10
Total	**30**	**100**
Mean+Standard deviation	16.57+3.39	

LEVEL OF KNOWLEDGE [RANITIDINE GROUP]

Table 3:- Frequency and percentage wise distribution of level of knowledge regarding Proton pump inhibitors (Pantaprazole) among patient with gastro esophageal reflex disease.

PANTAPRAZOLE GROUP LEVEL OF KNOWLEDGE	FREQUENCY (n)	PERCENTAGE (%)
Inadequate	0	0
Moderate	19	63.3
Adequate	11	36.7
Total	**30**	**100**
Mean+Standard deviation	19.67+4.83	

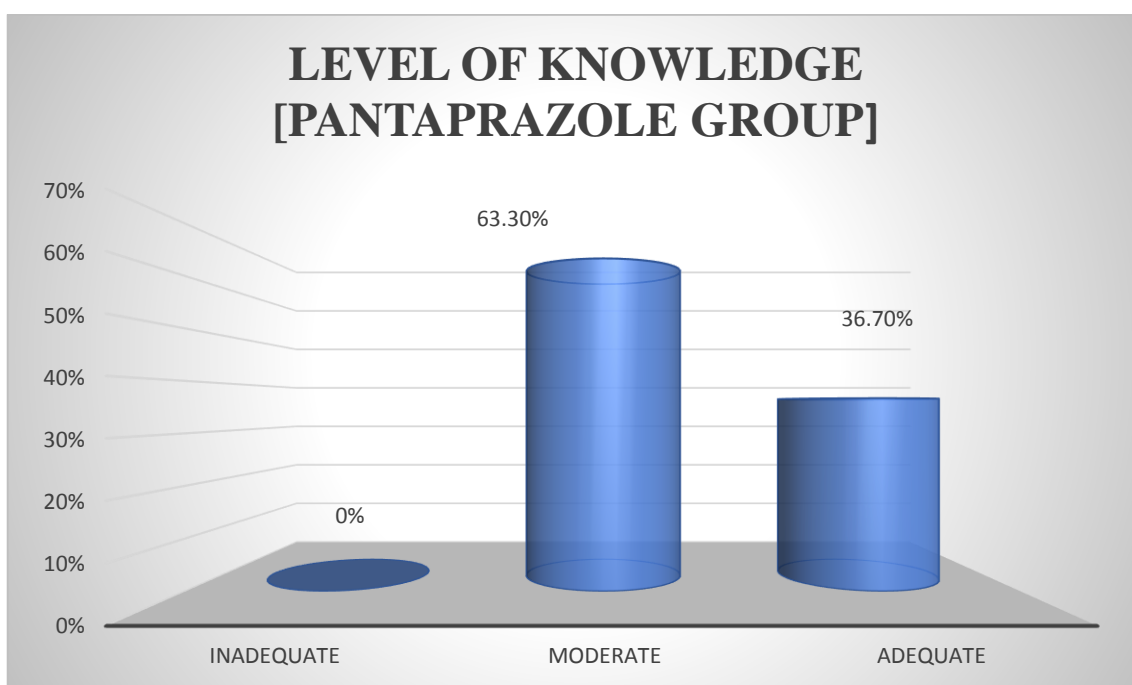## LEVEL OF KNOWLEDGE [PANTAPRAZOLE GROUP]

Table – 4 Comparison of effectiveness of level of knowledge regarding H2 receptor antagonist (ranitidine) versus Proton pump inhibitors (Pantaprazole) among patient with gastro esophageal reflex disease.

	GROUP	MEAN	STANDARD DEVIATON	MEAN DIFFERENCE	't' VALUE Independent -t test	df	'p' VALUE
LEVEL OF KNOWLEDGE	**RANITIDINE GROUP**	16.57	3.39	-3.100	-2.87	58	**0.006*** HS

**p<0.001HS- highly significant, NS-Non Significant.

Comparison of risk assessment regarding H2 receptor antagonist (ranitidine) versus Proton pump inhibitors (Pantaprazole) among patient with gastro esophageal reflex disease.
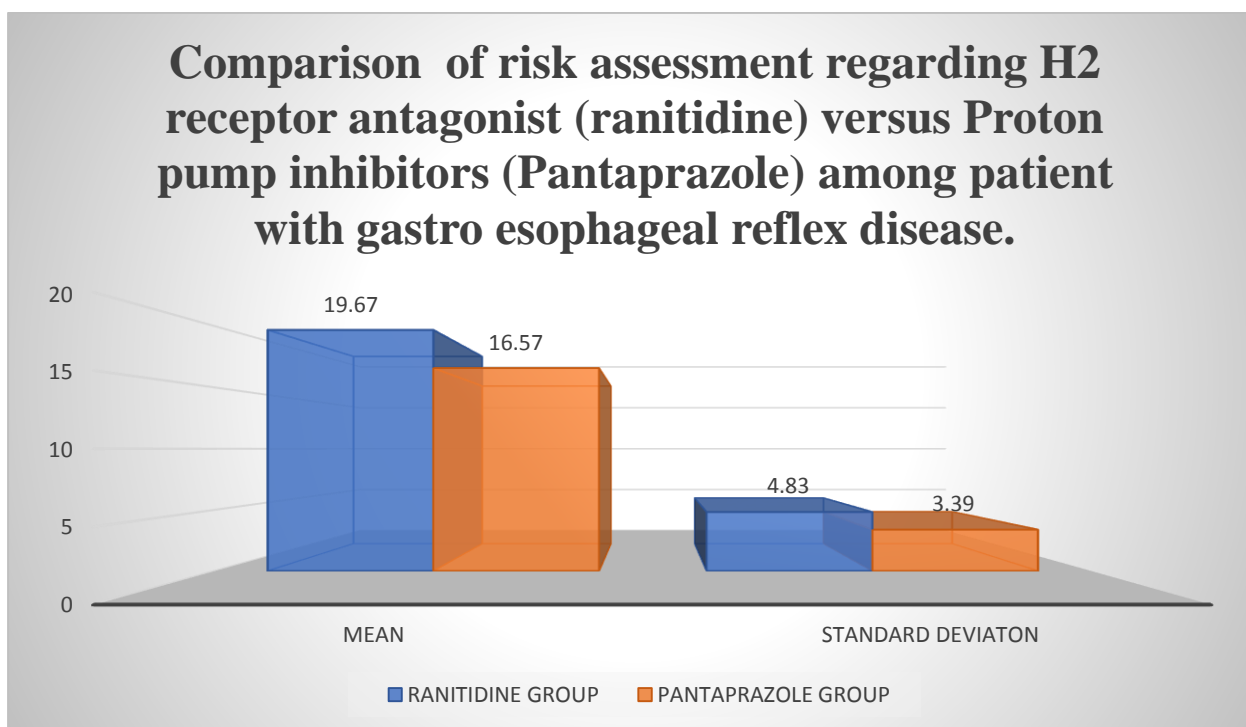
Table 5:-Association between the level of knowledge among patient with gastro esophageal reflex disease with their selected demographic variables in H2 receptor antagonist (ranitidine) group.

(N=30)

SL.NO	DEMOGRAPHIC VARIABLES	LEVEL OF KNOWLEDGE RANITIDINE GROUP				Chi-square X^2 and P-Value
		MODERATE		ADEQUATE		
		N	%	N	%	
1	**Age (in years)**					X^2=1.23 Df=3 p =0.746 NS
	15 to 25 years	12	44.4	2	66.7	
	26 to 35 years	3	11.1	0	0	
	36 to 45 years	5	18.5	0	0	
	Above 45 years	7	25.9	1	33.3	
2	**Gender**					X^2=0.000 Df=1 p =1.0 NS
	Male	9	33.3	1	33.3	
	Female	18	66.7	2	66.7	
	Transgender	0	0	0	0	
3	**Religion**					X^2=0.238 Df=1 p =0.626
	Hindu	25	92.6	3	100	
	Muslim	2	7.4	0	0	

	Christian	0	0	0	0	NS
	Others	0	0	0	0	
4	**Educational status**					X^2=0.868 Df=3 p =0.833 NS
	Illiterate	6	22.2	1	33.3	
	Primary education	3	11.1	0	0	
	Secondary education	3	11.1	0	0	
	Degree and above	15	55.6	2	66.7	
5	**Residency**					X^2=1.667 Df=1 p =0.197 NS
	Urban	17	63	3	100	
	Rural	10	37	0	0	
6	**Marital status**					X^2=0.123 Df=2 p =0.940 NS
	Married	8	29.6	1	33.3	
	Unmarried	18	66.7	2	66.7	
	Widow	1	3.7	0	0	
	Separated	0	0	0	0	
7	**Occupation**					X^2=1.22 Df=3 p =0.747 NS
	Business	1	3.7	0	0	
	Daily wages	4	14.8	0	0	
	Unemployed	10	37	2	66.7	
	Salaried	12	44.4	1	33.3	
8	**Income**					X^2=2.54 Df=3 p =0.466 NS
	Rs.<5000	14	51.9	3	100	
	Rs.5001 to 10000	8	29.6	0	0	
	Rs.10001 to 15000	4	14.8	0	0	
	Rs.15001 and above	1	3.7	0	0	
9	**Diet pattern**					X^2=1.01 Df=1 p =0.314 NS
	Vegetarian	7	25.9	0	0	
	Non vegetarian	20	74.1	3	100	
10	**Is there any history of GERD in family?**					X^2=0.667 Df=1 p =0.414 NS
	Yes	4	14.8	1	33.3	
	No	23	85.2	2	66.7	
11	**Previous knowledge about medications of Ranitidine and Pantaprazole used for GERD?**					**X^2=9.31 Df=2 p =0.010 *S**
	Yes	13	48.1	1	33.3	
	No	14	51.9	2	66.7	
12	**Source of information regarding GERD**					X^2=2.87 Df=3 p =0.411 NS
	Teachers	6	22.2	2	66.7	
	Mass media	4	14.8	0	0	
	Health care providers	16	59.3	1	33.3	
	Others	1	3.7	0	0	

*-p < 0.05 significant,**-p < 0.001 Highlysignificant, NS-Non significant

Table 6:-Association between the level of knowledge among patient with gastro esophageal reflex disease with their selected demographic variables in Proton pump inhibitors (Pantaprazole) group.

DEMOGRAPHIC VARIABLES	LEVEL OF KNOWLEDGE				Chi-square X^2 and P-Value
	PANTAPRAZOLE GROUP				
	MODERATE		ADEQUATE		
	N	%	N	%	
Age (in years)					X^2=2.66 Df=3 p =0.446 NS
15 to 25 years	4	21.1	3	27.3	
26 to 35 years	6	31.6	6	54.4	
36 to 45 years	4	21.1	1	9.1	
Above 45 years	5	26.3	1	9.1	
Gender					X^2=2.01 Df=2 p =0.366 NS
Male	11	57.9	7	63.6	
Female	5	26.3	4	36.4	
Transgender	3	15.8	0	0	
Religion					X^2=4.60 Df=3 p =0.203 NS
Hindu	4	21.1	3	27.3	
Muslim	10	52.6	3	27.3	
Christian	3	15.8	5	45.5	
Others	2	10.5	0	0	
Educational status					**X^2=8.67 Df=3 p =0.004 *S**
Illiterate	4	21.1	1	9.1	
Primary education	6	31.6	6	54.5	
Secondary education	7	36.8	4	54.5	
Degree and above	2	10.5	0	0	
Residency					X^2=1.98 Df=2 p =0.370 NS
Urban	13	68.4	6	54.5	
Rural	6	31.6	11	45.5	
Marital status					X^2=1.14 Df=2 p =0.563 NS
Married	14	73.7	6	54.5	
Unmarried	4	21.1	4	36.4	
Widow	1	5.3	1	9.1	
Separated	0	0	0	0	
Occupation					X^2=2.74 Df=3 p =0.432 NS
Business	5	26.3	5	45.5	
Daily wages	3	15.8	0	0	
Unemployed	5	26.3	2	18.2	
Salaried	6	31.6	4	36.4	
Income					X^2=0.602 Df=3 p =0.896 NS
Rs.<5000	5	26.3	3	27.3	
Rs.5001 to 10000	8	42.1	5	45.5	
Rs.10001 to 15000	1	5.3	0	0	
Rs.15001 and above	5	26.3	3	27.3	
Diet pattern					X^2=1.97 Df=1 p =0.160 NS

*-p < 0.05 significant,**-p < 0.001 Highlysignificant, NS-Non significant*

V. CONCLUSION AND RECOMMENDATIONS:

The findings of study revealed data collected from *60 (30+30) to assess the effectiveness of h2 receptor antagonist (Ranitidine) versus proton pump inhibitor (pantaprazole) among patient with gastro esophageal reflex disease in SMVMCH at Puducherry.* Shows that, the mean score of Comparison of effectiveness of level of knowledge regarding among patient with gastro esophageal reflex disease in **H2 receptor antagonist (ranitidine)** group was 16.57+3.39 and the mean score in the **Proton pump inhibitors (Pantaprazole) group** was 19.67+4.83. The calculated *independent 't' test* value of t = -2.87 shows *statistically highly significant difference* difference between level of knowledge regarding H2 receptor antagonist (ranitidine) versus Proton pump inhibitors.

NURSING IMPLICATIONS:
The study had implications for nursing practice, nursing education, nursing administration and nursing research.

NURSING PRACTICE:
The staff nurses must have some knowledge about gastroesohageal reflux disease and take a care about high risk populations.

NURSING EDUCATION:
The nurse educated the clients about the gastroesohageal reflux disease in the hospital settings and handling of high risk clients. Provide a necessary health education, provide a activity therapy or routine works etc.,

NURSING RESEARCH:
Numbers of studies are being conducted to compare the effectiveness of h2 receptor antagonist (Ranitidine) versus proton pump inhibitors (pantaprazole) among patient with GERD in SMVMCH at puducherry. Patients are mostly adequate in knowledge. Different studies have to be conducted to assess the effectiveness of Ranitidine versus pantaprazole.

NURSING ADMINISTRATION:
Nurse's administrators can make necessary steps to spread awareness about gastroesohageal reflux disease. Nurse's administration can organize awareness program or some participation events about effective drug of choice for GERD at SMVMCH.

RECOMMENDATIONS:
- A similar study can be conducted by large number of sample in future.
- The study was conducted to particular group of people at particular age.
- A prospective study can also be conducted

CHAPTER - VI

BIBLIOGRAPHY

BOOK REFERENCE:

1. Basavanthappa BT .Nursing Research, New Delhi; Jaypee Brothers Medical Publishers(p)Ltd.

2. Brunner and Suddarth ,"Textbook of Medical Surgical ",12th edition wolters kluwers pvt ltd , New Delhi.

3. Lewis, Colier, Hettkemper, Dirksen. Medical Surgical Nursing .6th ed. Mosby Publication.

4. Joyce M Black Esther Mataserin Jacob. Medical Surgical Nursing .Clinical Management for Continuity of care. 5thed. New Delhi: Harcourt Brace and company.

5. Suresh K Sharma ,Nursing Research and Statistics, Published by Elsevier, A Division Of Reed Elsevier India Private Limited.

6. Abdellah,G.Faye, Eugene Levene, Better Patient Care Through Nursing Research London: The Mac Million Publishing Company.

7. American Holistic Nurses Association. Position on the role of Nurses in the Practice of Complementary and Alternative Therapies.

8. Kothari CR ,Research methodology-methods and techniques.2nd edition New.

9. Burns Nancy, Grove k Susane The Practice of Nursing Research-Conduct, Critique and Utilization,2nded.Philadelphia (us);WB Saunders Company.

10. Luckmann and Sorensons. Medical Surgical Nursing.4thed. Philadelphia: W.B Sounders Company; 1997.

11. Black JM, Hawks JH. Medical-Surgical Nursing : Clinical Management for Positive Outcomes. Vol 2: 8th ed. Philadelphia: Elsevier Publications; 2009.

12. Polit FD, Beck CT. Nursing Research: Generating and Assessing Evidence for Nursing Practice. 8th ed. Philadelphia: Lippincott, Williams and Wilkins Publications; 2004.

13. Lippon Cott (1998) Manual of Nursing Practices 8th edition, Ed.Lippincott, Williams & Wilkins, publications, US.

14. Marlow , Textbook of paediatric nursing, 6th edition 2006, saurabh printed pvt.Ltd, Nodia

15. Wong's, Essentials of paediatric nursing, 8th edition,2009, Elsevier, first floor ,Nodia.

16. Parul dutta, A textbook of paediatric nursing, 2nd edition 2009, jaypee brothers medical Publications, Pvt.Ltd, New Delhi.

JOURNAL REFERENCE

1. Simpson WG. Gastroesophageal reflux disease and asthma. Diagnosis and management. Arch Intern Med 1995; 155:798.

2. Chipps BE, Haselkorn T, Paknis B, et al. More than a decade follow-up in patients with severe or difficult-to-treat asthma: The Epidemiology and Natural History of Asthma: Outcomes and Treatment Regimens (TENOR) II. J Allergy Clin Immunol 2018; 141:1590.

3. Naik RD, Vaezi MF. Extra-esophageal gastroesophageal reflux disease and asthma: understanding this interplay. Expert Rev Gastroenterol Hepatol 2015; 9:969.

4. Nordenstedt H, Nilsson M, Johansson S, et al. The relation between gastroesophageal reflux and respiratory symptoms in a population-based study: the Nord-Trøndelag health survey. Chest 2006; 129:1051.

5. Hassall E. Outcomes of fundoplication: causes for concern, newer options. Arch Dis Child. 2005;90:1047–1052. [Crossref], [PubMed], [Web of Science ®], [Google Scholar

6. Parekh PJ, Johnson DA (2015) Medical treatment versus surgery for treatment of gastroesophageal reflux disease. Tech Gastrointest Endosc 17:53–61. doi:10.1016/j.tgie.2015.02.003

7. Paoletti G, Melone G, Ferri S, et al. Gastroesophageal reflux and asthma: when, how, and why. Curr Opin Allergy Clin Immunol 2021; 21:52.

8. Katz PO, Gerson LB, Vela MF. Guidelines for the diagnosis and management of gastroesophageal reflux disease. Am J Gastroenterol 2013; 108:308.

9. Kiljander TO, Laitinen JO. The prevalence of gastroesophageal reflux disease in adult asthmatics. Chest 2004; 126:1490.

10. Field SK, Underwood M, Brant R, Cowie RL. Prevalence of gastroesophageal reflux symptoms in asthma. Chest 1996; 109:316.

NET REFFERENCE

1. www. Wikipedia. com
2. www. medscape.com
3. www. ncbi.nim.gov/pubmed.com
4. www. surgicalcriticalcare.net
5. www.emro.who.com