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Effectiveness of Structured Teaching Program on Knowledge Regarding Gastro Intestinal Ulcer and its Management Among People Residing in Selected Rural Areas: A Quasi Experimental Study.

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ABSTRACT

Introduction: *Peptic ulcer disease (PUD) is caused by Helicobacter pylori infection or NSAID use, leading to mucosal lesions in the stomach, duodenum, or lower esophagus. Duodenal ulcers improve after eating, while gastric ulcers worsen. Symptoms include abdominal pain, belching, vomiting, weight loss, and reduced appetite, though elderly patients may be asymptomatic. Complications include bleeding (up to 15% of cases), perforation, obstruction, and bloating. Other risk factors include liver cirrhosis, Behçet's disease, Zollinger-Ellison syndrome, smoking, severe stress, and Crohn's disease, with NSAIDs posing a higher risk for older adults.*

Methodology: *The study conducted to assess the Knowledge Regarding Gastro Intestinal Ulcer and Its Management among People, using A Quasi Experimental one group pre test post test design at selected rural areas with 60 people, the study employed quantitative approach. The subjects are selected using non probability convenient sampling technique. The tool consists of semi-structured questionnaire on demographic variables and self-administered questionnaire.*

Results: *Pretest result on gastro intestinal ulcer and its management among people residing in selected rural areas revealed that majority 71.67% of the people had average level of knowledge score and 21.67% of them had poor level of knowledge score 6.67% of the people had good level of knowledge score and none of the participants had very good, and excellent level of knowledge. Mean knowledge score in pretest was 8.68±2.33 and mean percentage of knowledge score in pre test was 28.94±7.79. After the structure teaching program, Post test knowledge score shows that majority 55% of the people had very good level of knowledge score and 41.67% of them had excellent level of knowledge score, 3.33% of the people had good level of knowledge score and none of the participants were having poor and average level of knowledge. Mean knowledge score in posttest was 23.85±2.77 and mean percentage of knowledge score in post test was 79.50±9.24. Thus it is interpreted that post test mean knowledge score is higher than mean pretest knowledge score.* ***Conclusion:*** *The study concluded that the post test knowledge score was improved after implementation of structured teaching program. Structured teaching program plays important role in improving the knowledge.*

KeyWords: *Gastro Intestinal Ulcer, Peptic Ulcer, Duodenal Ulcer, Structured Teaching Program, Management.*

INTRODUCTION:

Peptikos, a Greek word meaning to digest, is the root of the English word peptic. A cavity surrounded by either acute or chronic inflammation is known as a peptic ulcer (PU), which are mucosal lesions that extend to the layer of the muscular is mucosa. Depending on the location of the ulcer, this alters are classified into two basic types: duodenal ulcers and stomach ulcers.[1]The stomach is a hollow muscular organ located on the left side of the abdominal cavity, just below the diaphragm. When empty, it has a volume of 50 ml. However, it has the ability to expand and accommodate between 1 and 1.5 liters of solids and liquids. In some cases, it can expand even further to hold several liters of food or liquid. Gastric mucosal erosions that are 0.5 cm or larger are commonly classified as peptic ulcers, which are a type of peptic illness. Knowledge regarding prevention of gastrointestinal ulcer is very necessary. Health education and prevention strategies on life style modification can be taught by the nurses in all setting and specially in community setting to prevent gastrointestinal ulcer. Structure teaching program is a effective teaching strategy to improve knowledge.[2]

Background of the study: The prevalence of peptic ulcer disease in the general population of Kashmir, India, was determined by endoscopy in a randomly selected sample population of 2763 adults aged 15 years and above who were interviewed using a questionnaire. Of 239 persons with ulcer symptoms, 193 (80.7%) had an oesophagogastroduodenoscopy. A randomly selected 177 individuals from among the remaining population without ulcer symptoms were also endoscoped. The point prevalence of peptic ulcer was 4.72% and the lifetime prevalence was 11-22%. The duodenal to gastric ulcer ratio was 17.1:1. Duodenal and gastric ulcer were common in men. The prevalence of peptic ulcer increased with age, with a peak prevalence of 28.8% in the 5th decade of life. Peptic ulcer was not related to socio-economic status. The prevalence of complications, such as bleeding, stenosis, or perforation were similar to those reported in the West.[3]

Need of the study:

According to the World Health Organization (WHO, 2021), gastrointestinal ulcers affect millions globally, with a higher prevalence in low- and middle-income countries where access to healthcare, diagnostic services, and awareness is limited. In rural India, the burden of Gl ulcers remains under-reported due to lack of awareness, limited access to health education, and traditional health beliefs.[4]A cross-sectional survey of 561 participants analyzed demographics, knowledge, symptoms, and healthcare-seeking behavior. Findings show a high PUD prevalence (82.53 %), with gastric ulcers being the most common. Lifestyle factors like spicy food consumption and stress were significant contributors. Most cases were managed with outpatient antibiotics, while a small percentage required hospitalization. The study highlights the need for targeted education, screening, and treatment strategies to improve public health outcomes and inform healthcare policies.[5]Peptic ulcer disease (PUD) remains a significant health issue in Africa, with a pooled prevalence of 15.2% based on a systematic review of 58 studies. Duodenal ulcers (10.2%) are more common than gastric ulcers (5.8%), with regional disparities West Africa shows the highest prevalence (19%), while Southern Africa has the lowest (8%). Ghana reports the highest national prevalence (27%). Helicobacter pylori infection is frequently associated with PUD, affecting 57.1% of cases, rising to 76.4% among diagnosed individuals. Despite stability over two decades, substantial heterogeneity in reported prevalence highlights the need for further research and targeted interventions.[6]This study examined the prevalence and five-year incidence of peptic ulcers in a Danish population sample of 3,608 individuals aged 30–60 years, using questionnaire data verified against medical records. The lifetime prevalence of ulcers was found to be 5.6%, with men having higher rates than women at a ratio of 2.2:1, and duodenal ulcers being more common than gastric ulcers at a ratio of 3.8:1. Over the observation period, 32 individuals without prior ulcers developed one, leading to a five-year incidence rate of 11.3 per 1,000 persons at risk, with no significant difference between sexes.[7]

Therefore awareness programs such as structured teaching program may play important roles in increasing knowledge and thus improving the performance in the treatment of gastric and duodenal ulcer. Hence the investigator felt the need to further explore the knowledge of gastric ulcer in people of selected rural area. And to provide the structured teaching program to make people aware about the gastrointestinal ulcer.

ETHICAL ASPECT

Permission was obtained by the concerned authorities before conducting the study. Consent letter was obtained by individual samples after explaining them the research process in their own language. Confidentiality regarding the samples information was maintained by using code numbers by the investigator. The title was approved by institutional ethical committee.

CONCEPTUAL FRAMEWORK

The conceptual framework selected for the study was based onmodifiedErsestine Wiedenbach's "Perspective Theory" (Helping art of clinical nursing).

REVIEW OF LITRATURE

In the present study the literature review is classified into the following sections.

I. Literature related to gastrointestinal ulcer and its management.

II. Literature related to knowledge regarding gastrointestinal ulcer and its management.

III. Literature related to the effectiveness of structured teaching program.

Reviews were taken from both Indian study and from worldwide. Reviews were from recent studies.

METHODOLOGY:

Objectives of the study

Primary objective:

To assess the effectiveness of structured teaching program on knowledge regarding Gastro Intestinal Ulcer and its management among people residing in selected rural areas.

Secondary objective:

To associate post test knowledge score regarding Gastrointestinal Ulcer and its management among people residing in selected rural areas with their selected demographic variables.

HYPOTHESIS

Will be tested at 0.05 level of significance.

H_0: There is no significant difference between pre test and post test Knowledge score regarding Gastro Intestinal Ulcer and its management among people.

H_1: There is significant difference between pre test and post test Knowledge score regarding Gastrointestinal Ulcer and its management among people.

OTHER HYPOTHESIS:

H_{01}: There is no significant difference between post test knowledge score regarding Gastro Intestinal Ulcer and its management among people with their selected demographic variables.

H_2: There is significant difference between post test knowledge score regarding Gastro Intestinal Ulcer and its management among people with their selected demographic variables.

RESEARCH APPROACH

In this study quantitative approach is used.

RESEARCH DESIGN

The research design selected for the present study was Quasi-experimental One group pre-test post-test design.

SETTING OF THE STUDY

The present study was conducted in two rural areas after obtaining permission from concerned authority one for pilot study and one for main study.

VARIABLES

Independent variables

The independent variable in this study was structured teaching program.

Dependent variables

The dependent variable in this study was knowledge regarding gastro intestinal ulcer and its management.

POPULATION

Target Population:

In this study the target population includes People residing in selected rural areas.

Accessible Population:

In this study, the accessible population include People residing in selected rural areas and are available during data collections who were fulfilling the inclusion criteria.

SAMPLING TECHNIQUE

In the present study Non probability convenient sampling technique was used.

SAMPLE SIZE

60 People residing in selected rural areas

VALIDITY AND RELIABILITY

The correlation coefficient 'r' of the tool was 0.985, and reliability was 0.9924, which is more than 0.8 and hence the tool was found to be reliable.

DESCRIPTION OF TOOL

Section A - Semi structured questionnaire on demographic Variable.

It includes total 11 demographic variables like age, gender, religion, education, occupation, monthly family income (Rs), marital status, type of family, type of diet, information about gastrointestinal ulcer and if yes than, specify the source of information, about gastrointestinal ulcer and its management, among people residing in selected rural areas.

Section B - Self-administered Structured Questionnaires.

The self-administered questionnaire consisted of 30 questions on knowledge about gastrointestinal ulcer and its management. Total score was 30. Each correct answer carries 1 mark and a zero for the wrong answer.

PILOT STUDY

Permission was taken from concerned authority. A sample of 10% people was selected from the rural area. The pilot study was feasible in terms of man money and resources.

RESULT

Table No. 1: Table showing Percentage wise distribution of People according to their demographic variables.

n=60

Sr. No.	Demographic Variables		Frequency (f)	Percentage (%)
1	Age (in year)	18-30 yrs	17	28.30
		31-40 yrs	26	43.30
		41-50 yrs	8	13.30
		≥51 yrs	9	15.1
2	Gender	Male	35	58.30
		Female	25	41.70
3	Religion	Hindu	44	73.30
		Muslim	7	11.70
		Christian	1	1.70
		Buddhist	7	11.70
		Other	1	1.70
4	Educational Qualification	Primary	11	18.30
		Secondary	13	21.70
		Higher Secondary	10	16.70
		Graduate	20	33.30
		Postgraduate	6	10
		Other	0	0
5	Occupation	Government Service	4	6.70
		Private Service	28	46.70
		Self Employed	13	21.70
		House maker	15	25
		Other	0	0
6	Monthly Family Income (in Rs)	Below 10000 Rs	19	31.70
		10001-15000 Rs	17	28.30
		15001-20000 Rs	14	23.30
		>20000 Rs	10	16.70
7	Marital Status	Married	49	81.70
		Unmarried	8	13.30
		Widow/Widower	1	1.70
		Separated	0	0
		Divorce	2	3.30

8	Type of family	Nuclear	26	43.30
		Joint	34	56.70
		Extended	0	0
9	Type of diet	Vegetarian	15	25
		Non Vegetarian	19	31.70
		Mixed	26	43.30
10	Information about Gastrointestinal Ulcer	Yes	6	10.0
		No	54	90.0
				n = 6
11	If yes than, specify the source of information	Family Members	3	50
		Relatives	1	16.70
		Friends	2	33.30
		Health Care Provider	0	0
		Mass Media	0	0
		Other	0	0

Table No. 2: Table showing comparison of pre test and post test knowledge score among people residing in selected rural areas.

Level of knowledge score	**Score Range**	**Pre test score**		**Post test score**	
		Frequency (f)	**Percentage (%)**	**Frequency(f)**	**Percentage (%)**
Poor	0-20%(0-6)	13	21.67	0	0
Average	21-40%(7-12)	43	71.67	0	0
Good	41-60%(13-18)	4	6.67	2	3.33
Very Good	61-80%(19-24)	0	0	33	55
Excellent	81-100%(25-30)	0	0	25	41.67
Minimum score		4		18	
Maximum score		15		28	
Mean knowledge score		8.68±2.33		23.85±2.77	
Mean % Knowledge Score		28.94±7.79		79.50±9.24	

Table No. 3 : Table showing effectiveness of structured teaching program on knowledge regarding gastro intestinal ulcer and it's management among people (Significance of difference).

n=60

Test	**Mean**	**SD**	**Mean Difference**	**Calculated t-value**	**Df**	**Table value**	**p-value**	**Level of Significance**
Pre Test	8.68	2.33	15.16±2.98	39.40	59	2.00	0.0001	S,p<0.05
Post Test	23.85	2.77						

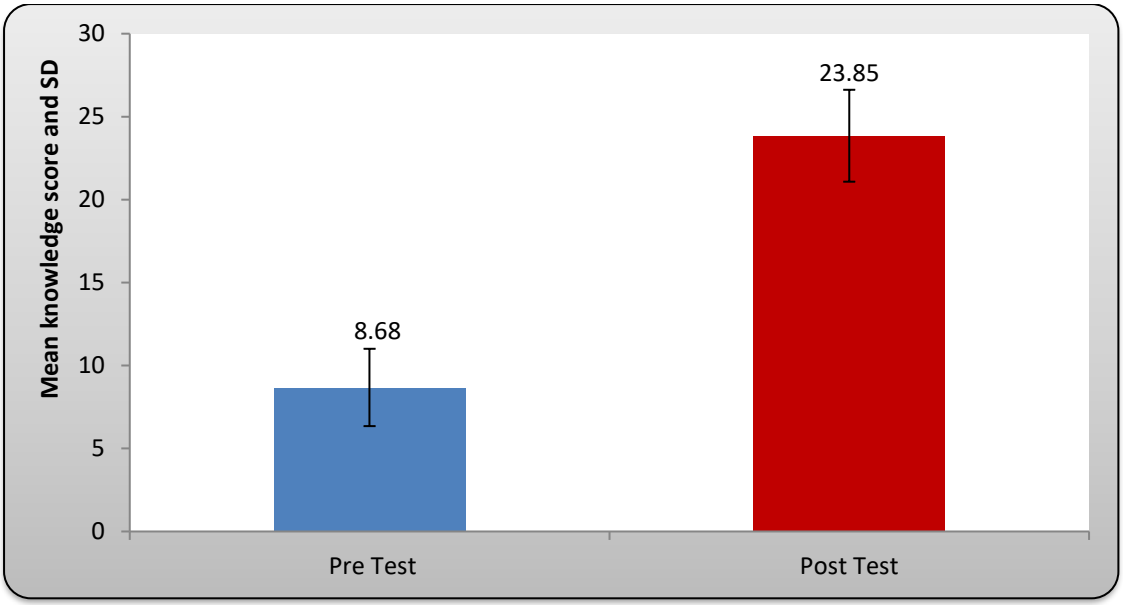

Figure No. 1: Bar diagram representing Significance of difference between knowledge score in pre test and post test of People.

Table No. 4: Table showing Association of Post Test Knowledge Score regarding gastrointestinal ulcer and it's management among people in relation to Demographic Variables.
n=60

Demographic Variable	Calculated t Value	Calculated F- Value	Df	Table Value	p-value	Significance
Age in years	-	9.10	3,56	2.76	0.0001	S,p<0.05
Gender	1.89	-	58	2.00	0.069	NS,p>0.05
Religion	-	0.49	4,55	2.52	0.73	NS,p>0.05
Educational Status	-	8.38	4,55	2.52	0.0001	S,p<0.05
Occupation	-	0.60	3,56	2.76	0.61	NS,p>0.05
Monthly Family Income	-	0.60	3,56	2.76	0.61	NS,p>0.05
Marital Status	-	0.44	3,56	2.76	0.72	NS,p>0.05
Type of family	2.03	-	58	2.00	0.049	S,p<0.05
Type of diet	-	0.17	2,57	3.15	0.84	NS,p>0.05
Information about gastrointestinal ulcer	0.47	-	58	2.00	0.064	NS,p>0.05
If yes than, specify the source of information	0.47	-	58	2.00	0.064	NS,p>0.05

S - Significance **NS - Not Significant**

DISCUSSION

A study was conducted on effectiveness of structured teaching programme to evaluate middle-aged people's awareness of peptic ulcer risk factors and prevention. The age group of 45–50, male gender, Hindu religion, married status (89%), joint family type (59%), primary education status (44%), other occupation (39%), monthly income (10001–15000) (37%), and sample having any bed habits (67%), comprise the largest percentage of the demographic data in this study overall. Yes, about bed habits, 43% of samples smoke, and 40% have diabetes as a chronic ailment.[8]

In above study majority of participant were male, from hindu religion, majority were married and were from joint family. In present study also majority 58.30% (35) of people were male, majority 73.30% (44) people were hindus, majority 81.70% (49) were married.

This study aimed to assess the knowledge of adults regarding risk factors and prevention of peptic ulcer disease among selected rural areas of Udaipur. The study involved 50 adults with in a selected rural area at Udaipur. Data collection included pre-test and post-test assessments of knowledge, demographic

surveys, and statistical analysis to evaluate knowledge changes and associations. The effectiveness was measured by comparing pre-test and post-test scores, and associations were analyzed using chi-square tests. The data revels that 60% of adult had inadequate knowledge, 24% had moderately adequate knowledge and only 16% had adequate knowledge in pre-test and that 68% had adequate knowledge 14% had moderately adequate knowledge and only 18% had inadequate knowledge in post-test. After the intervention, majority (34%) of adults had good knowledge level whereas during pre-test only (8%) of adults had good knowledge Before intervention the mean knowledge score was 20.22. After intervention, the mean knowledge score was increased to 22.37. Statistically there was a significant difference in the mean knowledge score before and after the intervention ($t = 10.95^*$, $df = 19$, $P<0.05$). Hence the hypothesis, there will be a significant difference in the pre and post-test mean knowledge score after the intervention was accepted. The study revealed that the self-instructional module was effective in improving the knowledge regarding the prevention of peptic ulcers.[9]

In above study significant difference was found between pre and post test knowledge score. In present study pretest knowledge shows majority 71.67% of the people had average level of knowledge score. However post test knowledge shows that majority 55% of the people had very good level of knowledge score and 41.67% of them had excellent level of knowledge score, 3.33% of the people had good level of knowledge score and none of the participants were having poor and average, level of knowledge. Analysis reveals that pre test mean was 8.68, standard deviation was 2.33 and post test mean was 23.85, standard deviation was 2.77. Pre test and post test mean difference was 15.16±2.98, df was 59. The tabulated value was 2.00. The calculated 't' value is 39.40 which is much higher than the tabulated value. P value is 0.0001 which is highly significant at 5% level of significance. Hence it is statistically interpreted that the Structured Teaching Program on knowledge regarding Gastro Intestinal Ulcer and it's management among people residing in selected rural areas was effective. Thus the H_1 is accepted and H_0 is rejected.

A cross-sectional study included a total of 505 adults from different regions in Saudi Arabia during the time period of April to June 2021. It was found that 26.5% participants had good knowledge about PUD as evident by correctly answering 75% or more of the questions. Around 76.6% participants had heard about PUD, 74.1% participants knew that epigastric pain is the initial symptom for PUD, 37% knew that prolonged use of non-steroidal anti-inflammatory drugs and Helicobacter pylori infection both are the important causes of PUD, 41% knew that regurgitation is most commonly observed symptom, and only 7.5% participants knew that endoscopy is recommended for patients who are aged 55 years or older. An association between the awareness of PUD and age, educational level, marital status, income, and occupation was found. This study indicated that nearly quarter of the participants had good awareness about PUD.[10]

In above study shows that there is association between awareness of PUD with age educational level , marital status, income and occupation. Similarly in present study a significant association was found between post test knowledge score with age in year, educational status and type of family.

CONCLUSION

The analysis reveals that the majority 43.30% (26) of people were in the age group of 31-40 years, Majority 58.30% (35) of people were male, Majority 73.30% (44) people were Hindus, Majority 33.30% (20) people were educated upto Graduate, Majority 46.70% (28) people were doing private service, Majority 31.70% (19) of people were having monthly family income, Majority 81.70% (49) of people were married, Majority 56.70% (34) of the people were from joint family Majority 43.30% (26) of the people were consuming mixed diet, Majority 90% (54) of people were not having information about gastrointestinal ulcer. The study also reveals that mean pre test knowledge score was 8.68 and the mean post test knowledge score was 23.85. The calculated t value was 39.40 which is greater than tabulated value 2.00 and P value is 0.0001 at 0.05 level of significance. Hence it is statistically interpreted that structure teaching program on knowledge regarding gastrointestinal ulcer and its management was highly effective. Thus the H_1 is accepted and H_0 is rejected. Similarly analysis also reveals that, there is a significant association was found between post test knowledge with age in year, educational status, type of family. While there is no association of knowledge found with gender, religion, occupation, monthly family income, marital status, type of diet, information about gastrointestinal ulcer and If yes than, specify the source of information.

RECOMMENDATATION

1) A similar study can be replicated on a larger population for a generalization of findings.

2) A similar study can be done using different research methodology like true experimental design.
3) A similar study can be conducted to identify the long term effect of gastrointestinal ulcer.
4) A comparative study can also be conducted between rural and urban people with gastrointestinal ulcer.
5) A retrospective study can be conducted on assessment of risk factors associated with peptic ulcer.

BIBLIOGRAPHY

1. Beiranv and Mohammad; A review of the most common in vivo models of stomach ulcers and natural and synthetic anti-ulcer compounds: A comparative systematic study. Phytomedicine Plus 2, 2022; 100264
2. Rajaselvi, A Study to Assess the Effectiveness of Structured Teaching Program on Knowledge about Peptic Ulcer among First-year D.T.Ed. Students at Ragavendra Teacher Training Institute at Keezhamoongiladi. Pon J Nurs 2023;16(2):44–47.Pondicherry Journal of NursingVolume 16 | Issue 2 | Year 2023
3. Khuroo, M S et al. "Prevalence of peptic ulcer in India: an endoscopic and epidemiological study in urban Kashmir." Gut vol. 30,7 (1989): 930-4. doi:10.1136/gut.30.7.930
4. Kumar, R., Singh, A., & Gupta, S. (2019). Prevalence and Risk Factors of Peptic Ulcer in Rural North India. Indian Journal of Gastroenterology, 38(3), 210-215.)
5. Muazzam Sheriff Maqbul, Reem Saleh Alzaki, Reema Sami Meeralam, Norah Abdulmajeed Alqutami, Bayan Mohammed Alturki, Lina Sultan Alhazmi, Reem Mamdouh Alaseeri, Lama Saad Alghamdi, Reem Khalid bin Brik, Shaima Tariq Mansoor Beig, Muath Saeed Alamri, Wjood Abdullah A. Alshehri, Turki Ayed Almutairi, Maha Abdullah Alqurashi, Ahmed Jamal Nasef, Prevalence of peptic ulcer disease and its associated factors in Jeddah Saudi Arabia, Gastroenterology & Endoscopy, Volume 3, Issue 1, 2025 Pages 13-21, ISSN 2949-7523, Available on https://doi.org/10.1016/j.gande.2024.09.001.
6. Abdu, S.M., Assefa, E.M. & Abdu, H. Prevalence and patterns of peptic ulcer disease in Africa: a systematic review and meta-analysis. BMC Gastroenterol 25, 298 (2025). https://doi.org/10.1186/s12876-025-03906-yRosenstock, S. J., and T. Jørgensen. "Prevalence and incidence of peptic ulcer disease in a Danish County--a prospective cohort study." Gut 36.6 (1995): 819-824.
7. Seo JH, Hong SJ, Kim JH, et al. Long-Term Recurrence Rates of Peptic Ulcers without Helicobacter pylori. Gut and Liver. 2016 Sep;10(5):719-725. DOI: 10.5009/gnl15262. PMID: 27114412; PMCID: PMC5003194.
8. Kaushal patidar, nikhilpatel, A Study To Assess The Effectiveness Of Structured Teaching Programme (Stp) On Knowledge Regarding Risk Factors And Prevention Of Peptic Ulcer Among The Middle Age Population In Selected Urban Area At Mehsana City. Asian J. nursing education and research. 2019; 9(3):370-372. doi:10. 5958/2349-2996.2019.00079.available from: https://ajner.com/ abstractview. aspx ?pid=2019-9-3-1.
9. Haneen Mohammed Alsadoun , Sadeem Mohammed Alqallaf , Abdulkarim Mohammad A. Aldekhail , Rahaf Meshal Alanazi , Haneen Obaid Alanazi, Eman Ahmed Alrashed , Manar Hassan Alraddadi, Awareness of general population in Saudi Arabia about peptic ulcer disease, International Journal of Medicine in Developing Countries, 2021;5(8):1514–1522. Available from:https://doi.org/10.24911/IJMDC.51-162724502.
10. Pillai VK, A Study to Evaluate the Effectiveness of Self-instructional Module on Knowledge Regarding Risk factors and prevention of Peptic Ulcer Disease Among Adults in a Selected Rural Areas of Udaipur, Journal of Drug Delivery and Therapeutics. 2024; 14(6):170-173 DOI: http://dx.doi.org/10.22270/jddt.v1416.6768