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EVALUATE THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING RISK FACTORS AND PREVENTION OF PEPTIC ULCER AMONG THE MIDDLE AGE ADULTS

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ABSTRACT

Background: Peptic ulcer disease is a common gastrointestinal disorder characterized by ulceration of the mucosal lining of the stomach or duodenum. Its occurrence is influenced by several factors, including *Helicobacter pylori* infection, prolonged use of non-steroidal anti-inflammatory drugs (NSAIDs), unhealthy dietary habits, smoking, alcohol consumption, psychological stress, and irregular lifestyle practices. Middle-aged adults may be particularly vulnerable due to occupational stress, changing dietary patterns, sedentary lifestyle, and inadequate awareness regarding preventive measures. Lack of knowledge about modifiable risk factors and preventive practices may increase the risk of peptic ulcer disease and its complications. Structured health education can improve awareness and encourage individuals to adopt appropriate preventive behaviours. **Aim:** To assess the effectiveness of a structured teaching programme on knowledge regarding risk factors and prevention of peptic ulcer among middle-aged adults in a selected urban area of Bangalore. **Methodology:** A pre-experimental one-group pre-test and post-test research design was adopted for the study. The study was conducted in Konanakunte urban area, Bangalore. A total of 60 middle-aged individuals were selected using a purposive sampling technique. Data were collected using a structured knowledge questionnaire regarding the risk factors and prevention of peptic ulcer. The tool was validated by experts and demonstrated good reliability, with a reliability coefficient of r = 0.78**.** Ethical permission was obtained from the concerned authorities, and informed consent was obtained from all participants before data collection. The pre-test was conducted**,** followed by the structured teaching programme on the same day. The post-test was conducted after seven days. Descriptive statistics such as frequency, percentage, mean, and standard deviation, and inferential statistics such as paired *t* test and chi-square test were used for analysis. **Results:** The pre-test findings revealed that 47 (78%) participants had inadequate knowledge (<50%), 13 (22%) had moderately adequate knowledge (50–75%), and none of them had adequate knowledge (>75%). Following the structured teaching programme, the post-test findings showed that none of the participants had inadequate knowledge, 7 (12%) had moderately adequate knowledge, and 53 (88%) had adequate knowledge (>75%). The mean knowledge score increased from 11.8 in the pre-test to 25.5 in the post-test**,** with a mean difference of 13.7**.** The obtained paired *t* value was 33.45**,** which was statistically highly significant at $p < 0.001$. These findings indicate a significant improvement in knowledge following the structured teaching programme. There was a statistically significant improvement in knowledge scores following the structured teaching programme, confirming that the structured teaching programme was effective in improving knowledge regarding the risk factors and prevention of peptic ulcer among the middle-aged population. **Conclusion:** The study concluded that the structured teaching programme was effective in improving knowledge regarding the risk factors and prevention of peptic ulcer among middle-aged individuals. The substantial increase in post-test knowledge scores demonstrates the usefulness of structured health education in enhancing awareness regarding modifiable risk factors and preventive measures. Regular health education programmes conducted by nurses and other healthcare professionals may help middle-aged individuals recognize risk factors early and adopt appropriate preventive practices to reduce the occurrence of peptic ulcer disease.

KEYWORDS: Structured teaching programme, peptic ulcer, risk factors, prevention, knowledge, middle-aged adults, health education.

INTRODUCTION

Peptic ulcer disease (PUD) is a common gastrointestinal disorder characterized by ulceration of the gastric or duodenal mucosa resulting from an imbalance between mucosal protective mechanisms and damaging factors such as gastric acid and pepsin. The major etiological factors include Helicobacter pylori (H. pylori) infection and the use of non-steroidal anti-inflammatory drugs (NSAIDs). Other contributing factors include smoking, excessive alcohol consumption, unhealthy dietary practices, irregular meals, psychological stress, and inappropriate medication use.

Despite advances in diagnosis and treatment, PUD continues to cause considerable morbidity and may lead to serious complications such as gastrointestinal bleeding, perforation, penetration, and gastric outlet obstruction. Symptoms including epigastric pain, nausea, vomiting, bloating, and loss of appetite may adversely affect daily activities, sleep, work performance, and quality of life. Several risk factors associated with PUD are modifiable, highlighting the importance of preventive health practices and timely medical care.

Middle-aged adults are an important population for health education because occupational and family responsibilities, irregular eating patterns, stress, sedentary lifestyles, and long-term exposure to smoking, alcohol, or NSAIDs may increase their vulnerability to gastrointestinal problems. Adequate knowledge regarding H. pylori, medication use, dietary practices, lifestyle modification, warning signs, complications, and preventive measures can promote appropriate health-related behaviours and reduce preventable risks.

Nurses play an important role in health promotion and disease prevention through community-based education. A structured teaching programme provides systematic and organized information according to identified learning needs and can be evaluated objectively by comparing knowledge before and after the intervention.

Therefore, the present study was undertaken to assess the effectiveness of a structured teaching programme on knowledge regarding the risk factors and prevention of peptic ulcer among middle-aged individuals in a selected urban area of Bangalore. The findings may help identify knowledge gaps and support the use of structured health education as a strategy to promote healthy lifestyle practices, appropriate medication use, early recognition of warning symptoms, and timely healthcare-seeking behaviour.

Need For the Study

Peptic ulcer disease (PUD) remains an important gastrointestinal health problem despite advances in diagnosis, treatment, Helicobacter pylori eradication, and preventive strategies. Globally, the number of people living with PUD increased from approximately 6.43 million in 1990 to 8.09 million in 2019, although age-standardized prevalence and mortality rates have declined. Recent Global Burden of Disease 2021 estimates also indicate an increase in the absolute number of PUD cases, highlighting its continuing public health importance.

The major risk factors for PUD include H. pylori infection and non-steroidal anti-inflammatory drug (NSAID) use. Smoking, excessive alcohol consumption, unhealthy dietary practices, stress, and inappropriate self-medication may further contribute to disease occurrence and complications. Untreated PUD can result in serious complications such as gastrointestinal bleeding, perforation, and gastric outlet obstruction. Many of these risk factors are identifiable and potentially modifiable through appropriate health education.

The Indian population continues to experience a significant burden of H. pylori-associated and other forms of PUD. In urban settings, middle-aged adults may be particularly exposed to occupational stress, irregular meals, sedentary lifestyles, smoking, alcohol consumption, and analgesic use. Despite experiencing common symptoms such as abdominal pain and acidity, individuals may have inadequate knowledge regarding risk factors, warning signs, prevention, and the need for timely medical consultation.

Health education is an important preventive role of nursing professionals. A structured teaching programme can provide systematic information regarding the causes and risk factors of PUD, safe use of NSAIDs, healthy dietary and lifestyle practices, symptom recognition, prevention, and appropriate healthcare-seeking behaviour. Improving knowledge may help individuals adopt healthier practices and reduce potentially preventable risks.

Therefore, the investigator considered it necessary to assess the effectiveness of a structured teaching programme on knowledge regarding the risk factors and prevention of peptic ulcer among middle-aged individuals in a selected urban area of Bangalore. The study may provide useful evidence for community-based nursing health education and contribute to strengthening preventive approaches to PUD.

Statement of The Problem: "A Study to Evaluate the Effectiveness of a Structured Teaching Programme on Knowledge Regarding Risk Factors and Prevention of Peptic Ulcer among the Middle-Aged Adults in a Selected Urban Areas at Bangalore."

OBJECTIVES OF THE STUDY

1. To assess the pre-test level of knowledge regarding the risk factors and prevention of peptic ulcer among the middle-aged Adults by using structured knowledge questionnaire.

2. To evaluate the effectiveness of a structured teaching programme on knowledge regarding the risk factors and prevention of peptic ulcer among the middle-aged Adults by comparing pretest and posttest knowledge scores.
3. To determine the association between the pre-test level of knowledge regarding the risk factors and prevention of peptic ulcer and selected socio-demographic variables of middle-aged Adults.

Research Hypotheses

H_1: There will be significant difference between the mean pre-test and post-test knowledge scores regarding the risk factors and prevention of peptic ulcer among the middle-aged Adults after the implementation of structured teaching programme.

H_2: There will be significant association between the pre-test level of knowledge regarding the risk factors and prevention of peptic ulcer and selected socio-demographic variables of the middle-aged Adults.

METHODOLOGY

Research Design: A pre-experimental one-group pre-test and post-test research design was adopted to evaluate the effectiveness of a structured teaching programme on knowledge regarding the risk factors and prevention of peptic ulcer among the middle-aged Adults.

Study Variables

Independent Variable: Structured teaching programme on risk factors and prevention of peptic ulcer.

Dependent Variable: Knowledge regarding the risk factors and prevention of peptic ulcer among the middle-aged Adults.

Socio-Demographic Variables: The selected socio-demographic variables included age, sex, marital status, religion, educational qualification, dietary habits, occupation, personal habits, and family history of peptic ulcer.

Setting of the Study: The study was conducted in Konanakunte urban area, Bangalore**.** The selected urban area is located approximately 10 km from Brite College of Nursing, Bangalore**.** The area has an approximate population of 12,000**,** including approximately 4,800 women**.** The setting was selected based on the feasibility of conducting the study, accessibility of the area, availability of eligible participants, and permission obtained from the concerned authorities**.**

Population: The target population comprised middle-aged individuals residing in Konanakunte urban area, Bangalore**.** The accessible population consisted of middle-aged individuals who fulfilled the predetermined inclusion criteria and were available during the period of data collection.

Sample Size: The sample consisted of 60 middle-aged individuals residing in the selected urban area of Bangalore.

Sampling Technique: A non-probability purposive sampling technique was used to select 60 middle-aged Adults who fulfilled the inclusion criteria and were willing to participate in the study.

Inclusion Criteria: The study included individuals who were:

- Willing to participate in the study.
- Able to communicate in English or Kannada**.**
- Both men and women were eligible to participate**.**
- Available during the period of data collection.
- Residents of the selected urban area.
- Fulfilled the age criteria specified for the middle-aged adults.

Exclusion Criteria: The study excluded individuals who were:

- Unwilling to participate in the study.
- Not available for the post-test assessment.
- Had participated in a similar structured educational programme on peptic ulcer immediately prior to the study.
- Unable to understand English or Kannada.

Tool for Data Collection: A structured data collection tool was used to assess the socio-demographic characteristics and knowledge of the participants regarding the risk factors and prevention of peptic ulcer. The tool consisted of two sections:

Section A: Socio-Demographic Variables: This section consisted of items related to the selected socio-demographic characteristics of the participants, including: Age, Gender, Marital status, Religion, Educational qualification, Dietary habits, Occupation, Personal habits, History/incidence of peptic ulcer.

Section B: Structured Knowledge Questionnaire: This section consisted of 30 multiple-choice questions designed to assess knowledge regarding the risk factors and prevention of peptic ulcer. The questionnaire covered relevant areas such as: Meaning and definition of peptic ulcer, Types of peptic ulcer, Causes and risk factors, Helicobacter pylori infection, Use of non-steroidal anti-inflammatory drugs (NSAIDs), Smoking and alcohol consumption, Dietary and lifestyle factors, Signs and symptoms, Complications, Preventive measures, Appropriate health-seeking behavior. The questionnaire was developed by the investigator in consultation with experts in nursing and related fields. The tool was validated by experts for content validity and was found to have a reliability coefficient of r = 0.78, indicating acceptable reliability.

Scoring Procedure: The knowledge questionnaire consisted of 30 multiple-choice questions**.** Each correct response was awarded **one mark**, while an incorrect or unanswered response was awarded **zero marks**. The maximum possible knowledge score was **30**. The level of knowledge was categorized as follows:

Knowledge Level	Score Range	Percentage
Inadequate knowledge	0–14	<50%
Moderately adequate knowledge	15–22	50–75%
Adequate knowledge	23–30	>75%

Data Collection Procedure

Prior to data collection, permission was obtained from the concerned authorities, and written permission was obtained from the Community Health Officer. The participants were informed about the purpose and nature of the study, and informed consent was obtained before their participation.

Phase I – Pre-Test: On day one**,** the investigator established rapport with the participants and explained the purpose of the study. After obtaining informed consent, the participants were administered the structured knowledge questionnaire to assess their baseline knowledge regarding the risk factors and prevention of peptic ulcer.

Phase II – Structured Teaching Programme: Immediately following the pre-test on the same day, a structured teaching programme was administered to the participants. The teaching programme was conducted using a PowerPoint presentation and lasted approximately 45–60 minutes. The content included information regarding the meaning and types of peptic ulcer, causes and risk factors, H. pylori infection, NSAID use, smoking, alcohol consumption, dietary and lifestyle factors, signs and symptoms, complications, and preventive measures.

Phase III – Post-Test: The post-test was conducted after seven days after the intervention. The same structured knowledge questionnaire was administered to the participants to assess the change in knowledge following the structured teaching programme. The pre-test and post-test scores were subsequently compared to determine the effectiveness of the intervention. **Data Analysis:** The collected data were coded, organized, tabulated, and analyzed using descriptive and inferential statistics**. Descriptive Statistics:** Frequency and percentage were used to describe the socio-demographic characteristics and categorical levels of knowledge. Mean and standard deviation were used to describe the pre-test and post-test knowledge scores. **Inferential Statistics:** A paired *t*-test was used to determine the significance of the difference between the mean pre-test and post-test knowledge scores. The Chi-square test was used to determine the association between the pre-test level of knowledge and selected socio-demographic variables. The level of statistical significance was set at $p < 0.05$

RESULTS

Socio-demographic characteristics

The demographic analysis of the 60 middle-aged participants revealed that the majority, 21 (35%), belonged to the age group of 46–55 years, followed by 18 (30%) in the age group of 36–45 years, indicating that most respondents were in the later phase of middle adulthood. With regard to gender distribution, females constituted a higher proportion of the sample, accounting for 36 (60%) participants, while males comprised 24 (40%). In terms of marital status, a substantial majority, 44 (73.33%), were married, suggesting stable family structures among most participants. Religious affiliation showed that the majority of respondents were Hindus 42 (70%), followed by Christians and Muslims.

Dietary patterns revealed that most participants, 45 (75%), followed a mixed diet, while a smaller proportion were vegetarians, reflecting common dietary practices in the urban setting of the study area.Regarding occupational status and educational background, 38 (63.33%) of the participants were employed, whereas the remaining were homemakers or unemployed, indicating varied occupational exposure and lifestyle patterns. Educational status showed that 24 (40%) participants belonged to the “other” category of education, followed by those with formal schooling, highlighting diverse educational attainment among the study population. More than half of the respondents, 32 (53.33%), reported having no harmful habits such as smoking, alcohol consumption, or tobacco use, which is a positive health indicator.

A family history of peptic ulcer was reported predominantly among siblings by 31 (51.66%) participants, suggesting a possible familial or lifestyle influence. Notably, the majority of participants, 46 (76.66%), had no prior information regarding peptic ulcer, underscoring the need for structured teaching programmes to improve awareness and knowledge about risk factors and preventive measures.

Table 1: Distribution of Pre Test Level of Knowledge Regarding Risk Factors and Prevention of Peptic Ulcer among Middle Age Population. N=60

Sl.no.	Level of knowledge	PRE TEST	
		Frequency(f)	Percentage (%)
1	Inadequate (<50%)	47	78
2	Moderately adequate (50-75%)	13	22
3	Adequate (>75%)	00	00

Table 1 shows the distribution of participants according to their pre-test level of knowledge regarding the risk factors and prevention of peptic ulcer among the middle-aged population. Out of 60 participants, the majority, 47 (78%), had inadequate knowledge (<50%). About 13 (22%) participants had moderately adequate knowledge (50–75%). None of the participants 0 (0%) had adequate knowledge (>75%). These findings indicate that the majority of the participants had inadequate knowledge regarding the risk factors and prevention of peptic ulcer before the intervention, highlighting the need for an educational intervention to improve their knowledge and awareness.

Table 2: Distribution Of Post Test Level of Knowledge Regarding Risk Factors & Prevention of Peptic Ulcer among Middle Age population. N=60.

Sl.no.	Level of knowledge	Post test	
		Frequency(f)	Percentage (%)
1	Inadequate (<50%)	00	00
2	Moderately adequate (50-75%)	07	12
3	Adequate (>75%)	53	88

Table 2 shows the distribution of participants according to their post-test level of knowledge regarding the risk factors and prevention of peptic ulcer among the middle-aged population. Out of 60 participants, none, 0 (0%), had inadequate knowledge (<50%) in the post-test. About 7 (12%) participants had moderately adequate knowledge (50–75%), whereas the majority, 53 (88%), had adequate knowledge (>75%). These findings indicate a marked improvement in the level of knowledge among the participants following the intervention, as the majority of participants (88%) achieved an adequate level of knowledge in the post-test, and none remained in the inadequate knowledge category. This suggests that the structured teaching programme was effective in improving participants' knowledge regarding the risk factors and prevention of peptic ulcer.

Table 3: Comparison of Mean Pre Test and Mean Post Test Knowledge Score Regarding Risk Factors and Prevention of Peptic Ulcer among Middle Age Population. N=60.

S.no.	Observation	Mean	Mean difference	SD	Paired" t " value	P-value
1	Pre Test	11.8	13.7	1.91	33.458	p<0.001
2	Post Test	25.5				

Table 3 shows that the mean pre-test knowledge score of 11.8 increased to 25.5 in the post-test, with a mean difference of 13.7 and a standard deviation of 1.91. The calculated paired 't' value was 33.458, which was statistically significant at the 0.05 level of significance. These findings indicate that there was a statistically significant improvement in the knowledge scores following the intervention. Therefore, the findings suggest that the structured teaching programme was effective in improving knowledge regarding the risk factors and prevention of peptic ulcer among the middle-aged population.

Table 4: Association Between Pre-test Knowledge Level and Selected Socio-demographic Variables Among Middle-aged Adults. (N=60)

Sl. No.	Variables	Frequency	Percentage	Level of Knowledge		Chi Square
				Above Mean	Below Mean	
1	**Age in Year**					
	Age 25–35	10	16.66	7	9	$X^2 = 10.79$ df=3, p≥0.05
	Age 36–45	18	30	8	6	S*
	Age 46–55	21	35	11	7	
	Age 56–65	11	18.33	4	6	
2	**Sex**					

	Female	36	60	20	16	$X^2 = 0.49$ df=3, p≥0.05
	Male	24	40	17	7	NS
3	**Marital Status**					
	Married	44	73.33	22	12	$X^2 = 0.015$ df=3, p≥0.05
	Unmarried	16	26.66	14	12	NS
4	**Religion**					
	Hindu	42	70	11	10	
	Muslim	8	13.33	14	12	$X^2 = 2.11$ df=3, p≥0.05
	Christian	10	16.66	9	4	NS
5	**Dietary Pattern**					
	Vegetarian	15	25	16	20	$X^2 = 16.51$ df=3, p≥0.05
	Mixed	45	75	11	16	S^*
6	**Occupation**					
	Homemaker	22	36.66			$X^2 = 1.032$ df=3, p≥0.05
	Working	38	63.33			NS
7	**Qualification**					
	Higher Secondary	7	11.66	7	9	$X^2 = 0.872$ df=3, p≥0.05
	Bachelor	15	25	8	6	NS
	Others	24	40	11	7	
	Illiterate	14	23.33	4	6	
8	**Habit**					
	No Habits	32	53.33	12	19	
	Chewing Tobacco	12	20	15	6	$X^2 = 7.21$ df=3, p≥0.05
	Taking Alcohol	10	16.66	4	4	SS
9	**Incidence of Peptic ulcer in family**					
	Parents	18	30	8	4	$X^2 = 1.825$ df=3, p≥0.05
	Siblings	21	35	5	9	NS
	Neighbours	11	18.33	8	7	
	None of them	36	60	15	4	
10	**Previous Information about Peptic ulcer**					
	Yes	24	40	11	10	$X^2 = 1.765$ df=3, p≥0.05
	No	44	73.33	24	18	NS

Table 4 presents the association between the pre-test level of knowledge scores among the middle aged population (N=60) and selected demographic variables using the Chi-Square test. The analysis revealed that age had a statistically significant association with the pre-test knowledge scores ($\chi^2 = 10.79$, $p \leq 0.05$), indicating that knowledge level varied significantly across different age groups.

There was no significant association between pre-test knowledge scores and sex ($\chi^2 = 0.49$, $p \geq 0.05$), marital status ($\chi^2 = 0.015$, $p \geq 0.05$), and religion ($\chi^2 = 2.11$, $p \geq$

0.05), suggesting that these variables did not influence the knowledge level of respondents. A statistically significant association was found between dietary pattern and knowledge scores ($\chi^2 = 16.51$, $p \leq 0.05$), indicating that dietary habits were related to the level of knowledge.

There was no significant association between knowledge scores and occupation ($\chi^2 = 1.032$, $p \geq 0.05$) as well as educational qualification ($\chi^2 = 0.872$, $p \geq 0.05$). The variable habit showed a statistically significant association with pre-test knowledge scores ($\chi^2 = 7.21$, $p \leq 0.05$), indicating that personal habits were related to knowledge level. Further, incidence of peptic ulcer in family ($\chi^2 = 1.824$, $p \geq 0.05$) and previous information about peptic ulcer ($\chi^2 = 1.765$, $p \geq 0.05$) did not show any significant association with the pre-test knowledge scores. Overall, only age, dietary pattern, and habit demonstrated a significant association with the level of knowledge among the respondents.

DISCUSSION

The present study assessed the effectiveness of a structured teaching programme on knowledge regarding the risk factors and prevention of peptic ulcer among 60 middle-aged adults in a selected urban area of Bangalore using a pre-experimental one-group pre-test and post-test design. The demographic findings indicated that most participants were aged 46–55 years, female, married, Hindu, and followed a mixed diet. Most were employed, and more than three-fourths had no previous information regarding peptic ulcer, indicating a substantial need for health education.

The pre-test findings showed inadequate knowledge regarding peptic ulcer risk factors and prevention among a considerable proportion of participants. This finding highlights the importance of community-based education addressing modifiable factors such as inappropriate NSAID use, smoking, alcohol consumption, unhealthy dietary practices, stress, and delayed healthcare seeking. A marked improvement in knowledge was observed following the structured teaching programme. The mean knowledge score increased from 11.8 in the pre-test to 25.5 in the post-test, with a mean difference of 13.7. The obtained paired t value of 33.458 was statistically significant ($p < 0.001$), demonstrating that the structured teaching programme was effective in improving knowledge regarding peptic ulcer risk factors and prevention. The substantial increase in scores suggests that systematically organized and clearly presented health information can effectively address knowledge gaps among middle-aged adults.

The improvement may be attributed to the structured presentation of information covering the causes, risk factors, signs and symptoms, complications, dietary practices, lifestyle modification, medication precautions, and preventive measures related to peptic ulcer. Such organized health education may facilitate better understanding of modifiable risk factors and appropriate preventive behaviours. The study also identified significant associations between pre-test knowledge and selected socio-demographic variables, including age, dietary pattern, and personal habits. These findings suggest that individual demographic and lifestyle characteristics may influence health awareness and should be considered when planning community-based educational interventions.

Overall, the findings support the use of structured teaching programmes as a practical nursing intervention for improving knowledge regarding peptic ulcer prevention among middle-aged adults. Community health nurses can contribute significantly through regular health education on medication safety, healthy dietary practices, avoidance of tobacco and excessive alcohol, stress management, recognition of warning symptoms, and timely healthcare consultation. However, the findings should be interpreted considering the one-group pre-test and post-test design and the limited sample from a single urban setting. Future studies using larger samples, control groups, multiple settings, and longer follow-up are recommended to determine whether improvements in knowledge are sustained and translated into preventive health practices.

Implications of the study: The findings demonstrated that the structured teaching programme was effective in improving knowledge regarding the risk factors and prevention of peptic ulcer among middle-aged adults. The findings highlight the importance of systematic health education as a nursing intervention for promoting preventive practices and reducing modifiable risk factors.

1. Implications for Nursing Practice: Nurses can provide structured individual and group health education regarding peptic ulcer risk factors, warning signs, safe medication use, dietary practices, lifestyle modification, stress management, and timely healthcare seeking in hospital and community settings.

2. Implications for Nursing Education: Peptic ulcer prevention and risk-factor modification can be incorporated into nursing education through classroom teaching, clinical postings, community health activities, and student-led health awareness programmes.

3. Implications for Nursing Administration: Nursing administrators can facilitate regular health education programmes and provide appropriate educational materials, audiovisual aids, and continuing education opportunities to enhance nurses' competency in preventive health education.

4. Implications for Community Health Nursing: Community health nurses can identify individuals with inadequate knowledge and conduct targeted awareness programmes focusing on healthy dietary practices, avoidance of tobacco and excessive alcohol, appropriate

NSAID use, stress management, and early medical consultation.

5. Implications for Research: The study provides a basis for further research using larger samples, randomized or experimental designs, multiple settings, and longer follow-up periods. Future studies may also compare different educational approaches and assess whether improved knowledge results in sustained changes in preventive health practices.

RECOMMENDATIONS: Based on the findings of the present study, the following recommendations are made:

- Similar studies may be conducted with larger sample sizes and in different geographical and community settings to improve the generalizability of findings.
- Randomized controlled trials or true experimental studies may be undertaken to provide stronger evidence regarding the effectiveness of structured teaching programmes.
- Comparative studies may evaluate different educational methods, including audiovisual, digital, booklet-based, and blended teaching approaches.
- Long-term follow-up studies may be conducted to assess retention of knowledge and sustainability of preventive practices.
- Future research may assess changes in preventive health practices and lifestyle behaviours in addition to knowledge.
- Community-based studies may be conducted among high-risk groups, including older adults and individuals with prolonged NSAID use or unhealthy lifestyle practices.
- Nurses and other healthcare professionals may organize regular community health education programmes focusing on modifiable risk factors, medication safety, lifestyle modification, and early recognition of peptic ulcer symptoms.
- Standardized and validated educational materials and digital health resources may be developed for use in community and primary healthcare settings.

CONCLUSION

The conclusion represents the final and integrative component of a research study, bringing together the major findings in relation to the stated objectives without introducing new information. The present study was conducted to assess the effectiveness of a structured teaching programme on knowledge regarding the risk factors and prevention of peptic ulcer among middle-aged adults in a selected urban area of Bangalore. The findings demonstrated a marked and statistically significant improvement in knowledge following the structured teaching programme, with the mean knowledge score increasing from 11.8 in the pre-test to 25.5 in the post-test. The obtained paired t value of 33.458 was statistically significant at the 0.05 level ($p < 0.001$), confirming the effectiveness of the structured teaching programme in improving knowledge regarding peptic ulcer risk factors and prevention.

The study findings indicate that a planned and systematic structured teaching programme can effectively enhance awareness among middle-aged adults regarding modifiable risk factors and preventive measures for peptic ulcer. The findings also emphasize the important role of nurses and other healthcare professionals in providing health education and promoting preventive health practices at the community level. In conclusion, the structured teaching programme was found to be an effective educational intervention for improving knowledge regarding the risk factors and prevention of peptic ulcer among middle-aged adults. The study supports the incorporation of systematic health education into nursing and community-based preventive healthcare activities to strengthen awareness and promote appropriate preventive practices.

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Conflict of Interest: There is no conflict of interest in this study.

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