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Exploring The Relation Between Stress and Knowledge of Risk Factors Among the Peptic Ulcer Patient at Ims & Sum Hospital, Bhubaneswar, Odisha, India

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ABSTRACT

Peptic ulcer disease (PUD) is a common global health issue, often leading to serious complications like gastrointestinal bleeding and perforation, which are associated with high morbidity and mortality. This study aimed to assess stress levels and knowledge about PUD among patients, and to examine the association between stress and selected socio-demographic variables. A non-experimental survey was conducted using purposive sampling of 70 patients at IMS & SUM Hospital, BBSR, Odisha. Data were collected through interviews using the Sheldon Cohen Stress Scale and a structured questionnaire. Results showed that 78.51% of patients had moderate stress, 4.28% had high stress, and the mean stress score was 17.5. Regarding knowledge, 47.14% had poor knowledge, 38.57% average, and 14.28% good. While most socio-demographic variables showed no significant association with stress, education and religion were found to be significant. The study concluded that PUD patients generally experience moderate stress and have low levels of knowledge about the disease.

Key words: *Stress, knowledge, Peptic ulcer disease, Peptic ulcer Patient.*

1. INRODUCTION

Peptic ulcer disease (PUD) is a common gastrointestinal disorder that significantly affects the health and quality of life of millions of individuals globally. It is characterized by open sores or lesions that develop on the inner lining of the stomach or the upper part of the small intestine, commonly due to an imbalance between the aggressive factors like gastric acid

and pepsin, and the protective mechanisms of the gastrointestinal mucosa. (1,2) PUD primarily includes gastric ulcers and duodenal ulcers. Although treatable, if left unmanaged, it can lead to severe complications such as gastrointestinal bleeding, perforation, and in rare cases, gastric malignancy. (3,4)

The etiology of peptic ulcer is multifactorial. Major risk factors include infection with *Helicobacter pylori*, prolonged use of non-steroidal anti-inflammatory drugs (NSAIDs), smoking, alcohol consumption, spicy and irregular food habits, and psychological stress. (7-9) In recent years, increasing attention has been drawn to the role of stress in peptic ulcer development and progression. Stress impacts gastric motility and secretion, impairs mucosal defense, and alters health behaviors, indirectly contributing to the pathogenesis and worsening of ulcers. (11,13)

Despite advancements in medical treatment, the recurrence of peptic ulcers remains a significant challenge, especially among patients unaware of the causative factors or those who fail to make necessary lifestyle adjustments. (19) Knowledge and awareness about PUD risk factors are therefore crucial for effective prevention and long-term management. Patients with a better understanding of the condition are more likely to avoid harmful habits and adhere to treatment protocols. (20,21)

In India, particularly in semi-urban and rural areas, limited access to health education and awareness contributes to the persistence and complications of PUD. In Odisha, especially in healthcare settings like IMS & SUM Hospital, Bhubaneswar, a significant number of patients present with symptoms indicative of peptic ulcer disease. However, there is limited data on their psychological well-being and level of knowledge regarding ulcer risk factors.

Moreover, psychological stress among patients suffering from chronic conditions like PUD is often overlooked. (22,23)2Stress not only exacerbates the disease process but also affects patient compliance and recovery. It is therefore important to assess stress levels alongside disease awareness in order to implement a more holistic care approach. (24-27)

By evaluating these aspects, this study seeks to provide valuable insights for healthcare providers to design better patient education strategies, stress management interventions, and preventive programs. Ultimately, this could contribute to reducing the burden of peptic ulcer disease and improving the overall well-being of affected individuals. (28-31)

It is every people likes to remain healthy and happy and there are many health facilities given to live a healthy and productive life, preventing all that causes of disease and illness. (32-36) Despite preventing measures and awareness among the people regarding the health issue people are suffering with the peptic ulcer diseases. Hence this subject would identify the level of stress and knowledge regarding peptic ulcer, among, the peptic ulcer patient in IMS and SUM Hospital, Bhubaneswar.

2. MATERIAL & METHOD

In this study, a quantitative research approach was adopted to assess the level of stress and knowledge regarding the risk factors of peptic ulcer among patients. A survey research design was utilized, and the study was conducted at IMS & SUM Hospital, Bhubaneswar. The target population included all diagnosed peptic ulcer patients attending the inpatient and outpatient departments of the hospital. A total of 70 participants were used non-probability purposive sampling technique. The key research variables were the level of stress and knowledge regarding peptic ulcer disease, while the demographic variables included age, gender, marital status, educational status, religion, monthly income, type of family, occupation, personal habits, dietary pattern, exercise routine, and consumption of spicy food.

Data were collected through the interview method, using a structured tool that consisted of three sections: Section A for socio-demographic data, Section B using Sheldon Cohen's Stress Questionnaire Scale, and Section C comprising a structured questionnaire to assess the knowledge regarding peptic ulcer. The plan for data analysis involved both descriptive & inferential statistical methods to interpret the results effectively.

The criteria for sample selection included patients who were willing to participate, able to communicate in English or Odia, diagnosed with peptic ulcer and either admitted in IPD or visiting OPD at IMS & SUM Hospital, and available during the period of data collection. The exclusion criteria involved patients who were unable to cooperate or respond, those who were chronically ill, and individuals diagnosed with peptic ulcer along with other co-morbid diseases.

Data Collection Procedure

After obtaining formal permission from the concerned authority, the investigator selected the patients conveniently for the study. The entire data collection process was carried out within the hospital setting using the interview method. Informed consent was obtained from each participant prior to data collection. The investigator explained the purpose of the study and provided clear instructions on how to understand and respond to the questions included in the tool, ensuring clarity and comfort for the participants throughout the process.

Sample size:

Sample size calculation was done by using Yamane's formula

n=N/ (1+Ne^2)

Where, n= corrected sample size, N = population size, and e = Margin of error

Total 70 samples were selected for the study.

Statistical analysis:

In the analysis of the data, both inferential and descriptive statistical methods were employed. Data were analysed using IBM SPSS version 22 software. The collected data was analysed and presented in a tabulated form to make the findings simple and easy to understand. Descriptive statistics such as frequency & percentage distribution were used to analyse the demographic variables, and mean was calculated to evaluate the level of knowledge among peptic ulcer patients. Inferential statistics, specifically the Chi-square test, were applied to determine the association between selected demographic variables & the levels of stress and knowledge.

3. RESULT

Frequency & percentage distribution of subject according to socio-demographic variables of Peptic ulcer patient.

The study included a diverse demographic and lifestyle characteristics of peptic ulcer patients revealed the following findings: The majority (47.14%) of patients were aged between 41–60 years, followed by 37.14% in the 19–40 years age group, and 13.7% above 60 years. In terms of gender, 58.7% were male and 41.42% were female. Regarding religion, the majority (81.42%) were Hindu, followed by 15.71% Muslim, and 2.85% Christian. In terms of education, 62.85% of the patients had a primary level of education, 32.35% had secondary education, 4.28% were graduates, and none were postgraduates or illiterate. Occupationally, 35.71% were self-employed, 34.28% were employed, and 30% were unemployed. Concerning habits, 58.57% of patients did not consume any substances, while 18.57% used tobacco (chewing), 15.71% smoked, and 7.14% consumed alcohol. Most patients (55.71%) were from joint families, and the rest (44.28%) were from nuclear families. In terms of marital status, 80% were married. Regarding monthly income, 37.14% of patients earned between ₹15,000–₹20,000, 32.85% between ₹5,000–₹10,000, 28.14% between ₹10,000–₹15,000, and 1.42% earned above ₹20,000. Dietary habits showed that 31.42% of patients followed a mixed diet (both vegetarian and non-vegetarian), 15.28% were non-vegetarian, and 14.28% were purely vegetarian. Regarding physical activity, 55.7% did not engage in exercise, while 27.14% reported exercising regularly. In terms of spicy food consumption, 45.7% consumed spicy food occasionally, 34.28% regularly, and 20% irregularly.

Table 1 presents the frequency & percentage distribution of level of stress of peptic ulcer patients
N=70

Level of stress	Frequency (f)	Percentage %
Low stress (0-13)	12	17.14%
Moderate stress (14-26)	55	78.51%
High stress (27-40)	3	4.28%

Table 1 illustrates the distribution of stress levels among peptic ulcer patients. It was observed that 17.14% (12 patients) experienced a low level of stress, while the majority, 78.51% (55 patients), were found to be under moderate stress. Only a small proportion, 4.28% (3 patients), exhibited a high level of stress. This indicates that most peptic ulcer patients in the study were experiencing moderate levels of stress.

Table 2: Descriptive Statistics Showing Mean Scores for the Level of stress of peptic ulcer patient.
N=70

Level of stress	Maximum score	Minimum score
Low stress (0-13) **Moderate stress (14-26)** **High stress (27-40)**	28	13
Mean		17.5

Table 2 reveals that the minimum score for knowledge among peptic ulcer patients was 13, while the maximum score was 28. The mean value of the stress level among these patients was found to be 17.5, indicating an overall moderate level of stress in the study population.

Table 3: Descriptive Statistics on the Level of Knowledge Regarding Peptic Ulcer among Patients
N=70

Level of knowledge	Frequency(f)	Percentage (%)
Good (8-10)	10	14.28%
Average (5-7)	27	38.57%
Bad<5	33	47.14%

Table 3 depicts the level of knowledge regarding peptic ulcer disease among the patients. It was found that 14.28% of the patients had good knowledge about the condition, 38.57% demonstrated an average level of knowledge, while the majority, 47.14%, had poor knowledge. This indicates a significant gap in awareness and understanding of peptic ulcer disease among the patients studied.

Table 4: Chi-Square Analysis of the Association between Socio-Demographic Variables and Levels of Stress and Knowledge among Peptic Ulcer Patients

N=70

Sl no	Demographic variables	Chi- square Value Test	Df	P- Values	Inference
1	Age	4.760	4	0.312	NS
2	Gender	1.462	2	0.481	NS
3	Marital status	4.487	2	0.106	NS
4	Education	1.116	4	0.891	NS
5	Religion	1.695	4	0.791	NS
6	Monthly income	6.416	6	0.378	NS
7	Types of family	.063	2	0.968	NS
8	Occupation	2.563	4	0.633	NS
9	Habit	4.765	6	0.574	NS
10	Dietary pattern	.768	4	0.942	NS
11	Exercise pattern	2.971	4	0.562	NS
12	Spicy food	2.088	4	0.719	NS

$p \geq 0.05$= significant

Table 4 shows that there was no statistically significant association between the level of stress among peptic ulcer patients and their selected socio-demographic variables. Specifically, the p-values for age (0.312), gender (0.481), marital status (0.106), education (0.891), religion (0.791), monthly income (0.378), type of family (0.968), occupation (0.633), habit (0.574), dietary pattern (0.942), exercise pattern (0.562), and spicy food consumption (0.719) were all greater than the 0.05 level of significance. This indicates that none of the socio-demographic variables examined had a significant association with the stress levels of peptic ulcer patients in this study.

4. DISCUSSION

This study aimed to evaluate stress levels and knowledge of peptic ulcer risk factors among patients at selected hospitals in Odisha, India. The findings reveal a substantial gap in knowledge regarding key etiological factors such as *Helicobacter pylori* infection, NSAID usage, and psychological stress. Additionally, a considerable proportion of participants exhibited moderate to high stress levels, which may contribute to ulcer formation.

Recent literature increasingly supports the multifactorial pathogenesis of peptic ulcer disease (PUD), with psychosocial stress emerging as a critical component [5]. Zhang and Hou (2019) emphasized that chronic stress impairs mucosal defenses and facilitates acid-mediated damage, especially in vulnerable populations [5]. In an Indian context, Reddy and Somasundaram (2021) observed that nearly half of dyspeptic patients lacked awareness of stress as a risk factor, mirroring the knowledge deficits found in our study [6]. NSAID-induced mucosal injury remains a critical but preventable cause of PUD. In our cohort, while NSAID usage was reported, understanding of its long-term consequences was limited. Patel and Shah (2020) reported a high recurrence of ulcers among chronic NSAID users, despite medical advice [12]. These findings underscore the need for targeted education regarding safe medication practices.

Emerging evidence also highlights the complex interaction between psychological health and gastrointestinal pathology. A study by Rao and Gupta (2021) linked depressive symptoms with a significantly higher risk of ulceration, suggesting that mental health screening may be integral to gastrointestinal care [14]. Additionally, cortisol-mediated responses in stressed individuals have been shown to compromise gastric mucosal integrity, increasing susceptibility to ulceration [10, 15].

Despite numerous national initiatives addressing non-communicable diseases, gastrointestinal health, particularly stress-related conditions, remains underrepresented in public health strategies. Nayak and Das (2022) highlighted this gap in Odisha's NCD screening programs, suggesting that gastrointestinal education should be integrated into routine health promotion [16].

Technology-driven solutions such as mobile health interventions have shown promise. Thomas and Kurian (2021) demonstrated that mobile-based education significantly improved patient understanding of gastritis and ulcer prevention [17]. Moreover, the role of primary care physicians in patient counseling must be strengthened. Iyer and Sundaram (2022) noted that time constraints and lack of training hinder adequate lifestyle counseling in gastrointestinal complaints [18].

5. LIMITATION

The study faced several limitations that could influence the generalizability and depth of its findings. It was based on a small sample size from a single hospital, which restricts the applicability of the results to a wider population. Additionally, the study considered only selected socio-demographic variables, excluding factors like disease severity, duration, or psychological support. Language and literacy barriers may also have influenced the accuracy of responses. These limitations suggest the need for future research with larger, more diverse samples and a longitudinal approach.

6. CONCLUSION

According to the study's findings revealed that the majority of patients experienced a moderate level of stress, while a significant portion demonstrated poor knowledge regarding the risk factors of peptic ulcer disease. Additionally, the study found no statistically significant association between the level of stress or knowledge and selected socio-demographic variables such as age, gender, education, occupation, and dietary habits. These results indicate a need for targeted educational interventions and stress management programs to improve the overall well-being and health outcomes of peptic ulcer patients. Empowering patients with knowledge and support can play a vital role in the prevention and effective management of the disease.

Ethical Considerations

The research proposal was first approved by the Research Committee of SUM Nursing College to ensure that all ethical standards were met. Prior permission was obtained from the Medical Superintendent of IMS & SUM Hospital before initiating the study. Informed consent was taken from each participant after explaining the purpose, procedure, and voluntary nature of the study. Participants were assured that their responses would be kept strictly confidential and used only for research purposes. Furthermore, they were given the full freedom to withdraw from the study at any point without any obligation or consequence, thereby upholding their autonomy and rights throughout the research process.

Conflict of Interest: Nil

Source of funding: None

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