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Investigating The Prevalence and Associated Factors of Gastritis Among Nursing Students at A Selected Nursing Training School in Sri Lanka

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INVESTIGATING THE PREVALENCE AND ASSOCIATED FACTORS OF GASTRITIS AMONG NURSING STUDENTS AT A SELECTED NURSING TRAINING SCHOOL IN SRI LANKA

Gastritis is an inflammation of the stomach lining commonly associated with dietary habits, lifestyle factors, and infections such as *Helicobacter pylori*. Nursing students are at increased risk due to irregular meal patterns, academic stress, and demanding clinical schedules that may lead to poor eating behaviors. This study aimed to assess the prevalence of gastritis and its associated factors among nursing students at the Nursing Training School in Ratnapura, Sri Lanka. A descriptive cross-sectional study was conducted among 342 nursing students selected through convenience sampling. Data were collected via a pre-tested, self-administered online questionnaire comprising demographic data, stress, learning environment, dietary pattern, and physical activity assessments. Data were analyzed using SPSS version 29, applying descriptive statistics and chi-square tests, with $p < .05$ considered significant. Ethical approval was granted by the KIU Ethics Review Committee (KIU/ERC/24/032). The prevalence of gastritis was 57.3% (n = 196). A significant association was observed between gastritis and both poor dietary patterns ($p = .003$) and high perceived stress levels ($p = .025$). No significant associations were found with learning environment ($p = .589$) or physical activity ($p = .111$). The mean PSS-10 score was 22.6 (SD = 5.4), indicating moderate perceived stress, while 77.8% of participants demonstrated poor dietary habits, including frequent spicy food consumption and meal skipping. Gastritis prevalence among nursing students was notably high, primarily influenced by stress and dietary behaviors. Targeted interventions promoting healthy eating, time management, and stress reduction should be integrated into nursing curricula to enhance student well-being and reduce gastritis risk.

Keywords: gastritis, dietary habits, nursing students, Sri Lanka, Nursing Training School Ratnapura

Introduction

Gastritis is an inflammation of the gastric mucosa caused by factors such as infection, diet, medications, and stress (Borah, Biswas, Saha, & Pegu, 2023). It remains a major global health issue, affecting nearly half of the world's population during their lifetime (WHO, 2021). While *H. pylori* infection and prolonged Non-Steroidal Anti-Inflammatory Drug (NSAID) use are established causes, recent evidence emphasizes behavioral and lifestyle factors as major contributors, especially among young adults (Chen, Kao, & Wang, 2024).

Nursing students, including nursing undergraduates and the diploma students, are particularly vulnerable due to irregular meals, high academic stress, and reliance on fast food and caffeinated beverages (Li, Zhao, & Hu, 2020; Nehlig, 2022). Stress-induced increases in gastric acid secretion can exacerbate mucosal inflammation, particularly when combined with poor eating habits (StatPearls, 2023).

In South Asia, gastritis is widespread, yet Sri Lanka reports lower *H. pylori* prevalence compared with neighboring countries, suggesting that non-infectious determinants, such as dietary and psychosocial stressors, play a dominant role (Kharel, Singh, & Perera, 2020). However, research on gastritis among Sri Lankan nursing students remains scarce. These students face demanding academic and clinical

schedules that may compromise self-care, increasing susceptibility to gastritis (Feyisa & Woldeamanuel, 2021).

Addressing gastritis in this population is crucial, as the condition can impair concentration, performance, and attendance (Li *et al.*, 2020). Promoting nutrition awareness and stress-management strategies within nursing curricula may improve both student well-being and their capacity to promote healthy lifestyles in professional practice.

Research Questions

1. What is the prevalence of gastritis among nursing students in Rathnapura Nursing Training School?
2. What are the associated factors for gastritis among nursing students in Rathnapura Nursing Training School?

Research objectives

General Objective

- To determine the prevalence of gastritis and identify the associated factors among nursing students enrolled in Rathnapura Nursing Training School in Sri Lanka

Specific Objectives

- To identify the prevalence of gastritis among nursing students in Rathnapura Nursing Training School
- To determine the associated factors for gastritis among nursing students in Rathnapura Nursing Training School.

Methods

A descriptive cross-sectional study was conducted among 342 nursing students at the Nursing Training School, Ratnapura, Sri Lanka, to determine the prevalence of gastritis and associated factors. Participants from the 2019 and 2020 academic batches were selected through convenience sampling, with an 85.3% response rate.

Data were collected using a pre-tested, self-administered online questionnaire comprising demographic, stress, learning environment, dietary, and physical activity sections. Stress was assessed using the Perceived Stress Scale (PSS-10) (Cohen *et al*., 1983), consisting of 10 items scored 0–4, with total scores categorized as low (0–13), moderate (14–26), and high (27–40). The learning environment was evaluated using selected items from the Dundee Ready Education Environment Measure (DREEM). Dietary patterns and physical activity were measured using six-item Likert

scales; mean dietary scores ≤1.5 indicated good and >1.5 poor patterns, while physical activity scores ≥15 indicated good and <15 poor activity levels.

Content validity (CVI = 0.89) and internal reliability (Cronbach's α = 0.82) were established. Data were analyzed using SPSS version 29, applying descriptive and inferential statistics with $p < .05$ as significant. Ethical approval was obtained from the KIU Ethics Review Committee (KIU/ERC/24/032), and informed consent was secured from all participants.

Results

A total of 342 nursing students from the Government Nursing Training School in Ratnapura participated in the study.

Socio-demographic Characteristics

Most participants were female (96.2%), and all identified as Buddhist. Students ranged in age from 23 to 29 years (M = 25.1, SD = 1.2), with most (35.1%) aged 25 years. Over half of the participants were in their first academic year (59.6%), while 40.4% were in their third year. Most students resided in boarding houses (52.3%) or at home (32.7%), and nearly half (47.1%) chose nursing as a career based on personal interest. These characteristics are detailed in Table 1.

Table 1: Sociodemographic characteristics of nursing students (N = 342)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	23	22	6.4
	24	83	24.3
	25	120	35.1
	26	71	20.8
	27	40	11.7
	28	5	1.5
	29	1	0.3
Gender	Male	13	3.8
	Female	329	96.2
Religion	Buddhist	342	100.0
Academic Year	Year 1	138	40.4
	Year 3	204	59.6

Present Residence	Home	112	32.7
	Boarding house	179	52.3
	Hostel	43	12.6
	Other	8	2.3
Reason for Selecting Nursing	Personal interest	161	47.1
	Influence from parents	41	12.0
	No other job opportunity	19	5.6
	Based on G.C.E. A/L results	76	22.2
	Other	44	12.9
	Specific reason (specified)	1	0.3
Distance to Nursing College	None (nearby)	180	52.6
	5–10 km	73	21.3
	10–20 km	50	14.6
	20–50 km	39	11.4
Frequency of Visiting Home	Daily	112	32.7
	Weekly	208	60.8
	Monthly	20	5.8
	More than monthly	2	0.6

Prevalence of Gastritis

Of the 342 respondents, 196 (57.3%) reported being medically diagnosed with gastritis, while 146 (42.7%) reported no diagnosis. This indicates a high prevalence of gastritis among nursing students in this setting. The distribution of gastritis prevalence is illustrated in Table 2 and Figure 1

Table 2: Prevalence of gastritis among nursing students

Gastritis Diagnosis	Frequency (n)	Percentage (%)
Yes	196	57.3

No	146	42.7
Total	342	100.0

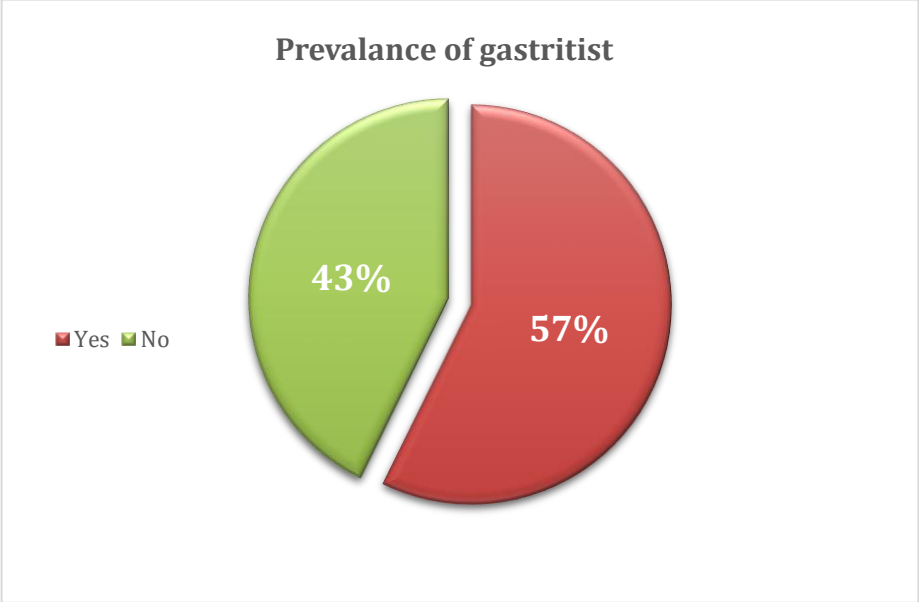

Figure 1: Prevalence of gastritis among nursing students

Distribution of Stress, Learning Environment, Dietary Pattern, and Physical Activity Assessment of Stress Level

The level of perceived stress among nursing students, measured using the PSS-10, is summarized in Table 3. The mean total stress score was 22.6 (SD = 5.4), indicating moderate perceived stress across the cohort. Overall, 61.1 % of participants experienced moderate stress, 19.6 % reported low stress, and 19.3 % experienced high stress levels. The highest means were recorded for feelings of nervousness (M = 2.95) and inability to control important life matters (M = 2.73).

Table 3: Distribution of Perceived Stress Scale (PSS-10) Scores Among Nursing Students (N = 342)

Statement	**Mean (SD)**	**Low (%) *(0–13)***	**Moderate (%) *(14–26)***	**High (%) *(27–40)***
In the last month, how often have you been upset because of something that happened unexpectedly?	2.61 (0.83)	18.1	62.3	19.6

In the last month, how often have you felt unable to control important things in your life?	2.73 (0.79)	16.7	60.8	22.5
In the last month, how often have you felt nervous and "stressed"?	2.95 (0.85)	13.5	58.8	27.7
In the last month, how often have you felt confident about handling personal problems? (R)	2.12 (0.81)	25.4	54.1	20.5
In the last month, how often have you felt that things were going your way? (R)	2.08 (0.77)	26.3	53.5	20.2
In the last month, how often have you found that you could not cope with all the things you had to do?	2.68 (0.91)	17.0	59.4	23.6
In the last month, how often have you been able to control irritations in your life? (R)	2.26 (0.84)	24.6	52.6	22.8
In the last month, how often have you felt that you were on top of things? (R)	2.10 (0.72)	27.8	51.5	20.7
In the last month, how often have you been angered because of things outside your control?	2.84 (0.80)	14.0	59.9	26.1
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	2.76 (0.88)	16.1	58.5	25.4

Total PSS-10 score (Range = 0–40)	**Mean (SD)**	**n (%) Low Stress**	**n (%) Moderate Stress**	**n (%) High Stress**
	22.6 (5.4)	67 (19.6%)	209 (61.1%)	66 (19.3%)

Assessment of Learning Environment

Table 4 presents students' perceptions of learning environment factors potentially influencing gastric health. While most participants agreed that tutorial support and the physical environment were satisfactory, fewer reported that clinical hours and workload allowed adequate time for meals and rest, suggesting that these aspects may contribute to gastritis among nursing students.

Table 4: Distribution of Learning Environment among study participants (N=342)

Item	**Strongly Agree (%)**	**Agree (%)**	**Disagree (%)**	**Strongly Disagree (%)**
Classroom schedules are well organized and allow adequate time for meals and rest.	63 (18.4)	141 (41.2)	116 (33.9)	22 (6.5)
Academic workload and assignment deadlines are manageable and do not cause physical discomfort or stress.	43 (12.6)	166 (48.5)	107 (31.3)	26 (7.6)
Clinical training hours are structured to permit regular mealtimes.	37 (10.8)	124 (36.2)	143 (41.8)	38 (11.2)
Assessment and evaluation methods are fair and do not create undue anxiety or stress.	49 (14.3)	153 (44.7)	116 (33.9)	24 (7.0)
Tutorial and supervisory support help to reduce academic pressure and tension.	67 (19.6)	188 (55.0)	71 (20.8)	16 (4.6)
The curriculum effectively balances theoretical and clinical demands without excessive strain.	45 (13.2)	144 (42.1)	124 (36.3)	29 (8.4)
Clinical supervision is supportive and does not contribute to excessive stress or fatigue.	34 (9.9)	138 (40.4)	140 (40.9)	30 (8.8)
Break times during lectures and clinical sessions are sufficient for rest and refreshments.	53 (15.5)	136 (39.8)	125 (36.6)	28 (8.1)
The physical learning environment (classrooms, labs, clinical settings) promotes comfort and well-being.	73 (21.3)	173 (50.6)	79 (23.1)	17 (5.0)

The overall learning environment supports a healthy balance between academic work and personal well-being.	62 (18.1)	168 (49.1)	90 (26.3)	22 (6.5)

Assessment of Dietary Patterns

Table 5 summarizes students' perceptions of learning environment factors that may influence gastric health. Overall, participants reported moderately positive perceptions, particularly regarding tutorial support and the physical learning environment. However, a considerable proportion indicated that clinical schedules, academic workload, and limited meal or rest breaks contributed to heightened stress and irregular eating patterns. These findings suggest that while the institutional environment supports learning in some areas, structural and scheduling factors within the program may indirectly increase students' susceptibility to gastritis.

Table 5: Distribution of Dietary Patterns Among Nursing Students (N = 342)

Item	**Strongly Agree (%)**	**Agree (%)**	**Disagree (%)**	**Strongly Disagree (%)**
I usually have a well-balanced diet for each meal and do not experience features of gastritis.	13 (3.8)	113 (33.0)	178 (52.0)	38 (11.1)
I skip main meals (especially breakfast) more than twice a week and take antacids for gastritis symptoms.	13 (3.8)	136 (39.8)	155 (45.3)	38 (11.1)
I usually have three main meals with dessert and do not experience gastritis symptoms.	5 (1.5)	85 (24.9)	219 (64.0)	33 (9.6)
I frequently consume spicy foods with every meal and experience feature of gastritis.	17 (5.0)	157 (45.9)	160 (46.8)	8 (2.3)
I usually consume carbonated beverages (e.g., Coca-Cola, Pepsi) with meals and experience features of gastritis.	13 (3.8)	76 (22.2)	195 (57.0)	58 (17.0)
I normally eat three meals on time with a balanced diet but have experienced gastritis at least once.	9 (2.6)	135 (39.5)	176 (51.5)	22 (6.4)

Figure 2: Distribution of dietary patterns

Assessment of physical activity

Table 6 shows students' physical activity habits related to gastric health. Most participants reported moderate rest and relaxation routines but limited engagement in regular physical exercise, suggesting that sedentary behavior may contribute to gastritis risk.

Table 6: Distribution of Physical Activity Patterns Among Nursing Students (N = 342)

Item	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)
I usually get up early in the morning, engage in physical exercise, and do not experience gastritis.	10 (2.9)	111 (32.5)	204 (59.6)	17 (5.0)
After nursing college hours, I spend at least one hour doing activities I enjoy refreshing my mind and avoid gastritis.	18 (5.3)	182 (53.2)	115 (33.6)	27 (7.9)

At the end of the day, I usually sleep more than six hours to rest adequately and prevent gastritis.	21 (6.1)	173 (50.6)	135 (39.5)	13 (3.8)
During weekends, I spend time with family and friends to relax and maintain well-being.	56 (16.4)	215 (62.9)	68 (19.9)	3 (0.9)
During weekends, I plan the upcoming week to ensure relaxation and minimize stress.	24 (7.0)	183 (53.5)	130 (38.0)	5 (1.5)
To maintain my BMI and physical fitness, I attend the gym twice a week and have not experienced gastritis.	5 (1.5)	67 (19.6)	229 (67.0)	41 (12.0)

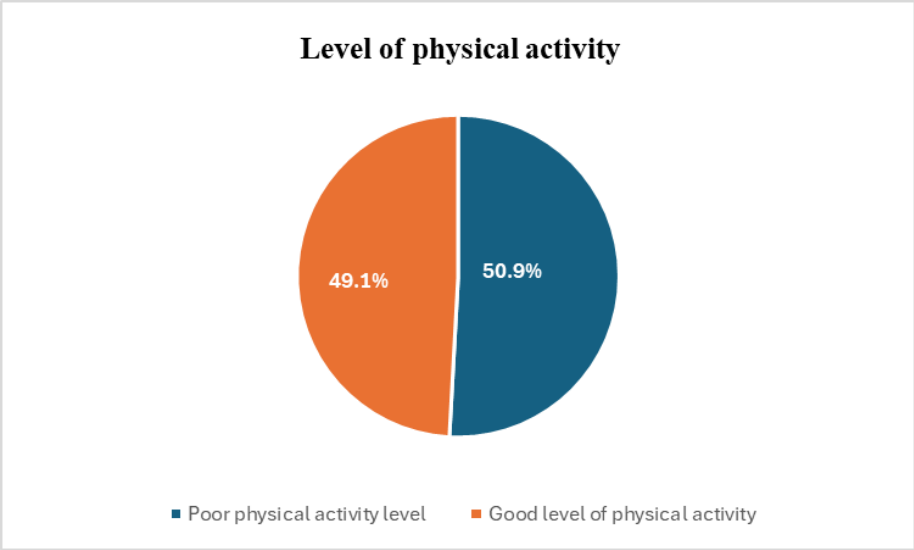

Figure 5: Distribution of the Level of physical activity among study participants

Associations Between Gastritis and Selected Factors

Table 7 summarizes associations between gastritis prevalence and key academic and lifestyle variables. A statistically significant relationship was observed between gastritis and both stress level ($p = .025$) and dietary pattern ($p = .003$). Students reporting high perceived stress or poor dietary habits were more likely to experience gastritis. Learning environment and physical activity level showed no significant associations with gastritis prevalence.

Table 8: Summary of Associations Between Gastritis Prevalence and Selected Factors Among Nursing Students (N = 342)

Variable	Category	Diagnosed with Gastritis (n/%)	Not Diagnosed with Gastritis (n/%)	Total (n)	χ^2 (df)	p-value	Significance
Learning Environment	Poor learning environment	112 (56.3)	87 (43.7)	199	0.29 (1)	0.589	Not significant
	Good learning environment	84 (58.7)	59 (41.3)	143			
Stress Level (PSS-10)	Low stress	29 (43.3)	38 (56.7)	67	7.41 (2)	0.025*	**Significant**
	Moderate stress	123 (58.9)	86 (41.1)	209			
	High stress	44 (66.7)	22 (33.3)	66			
Dietary Pattern	Poor dietary pattern	141 (53.0)	125 (47.0)	266	8.93 (1)	0.003*	**Significant**
	Good dietary pattern	55 (72.4)	21 (27.6)	76			
Physical Activity Level	Poor physical activity level	107 (61.5)	67 (38.5)	174	2.55 (1)	0.111	Not significant
	Good physical activity level	89 (53.0)	79 (47.0)	168			

Discussion

This study revealed a high prevalence of gastritis (57.3 %) among nursing students at the Nursing Training School in Ratnapura, indicating that more than half of the participants were affected. The analysis demonstrated statistically significant associations between gastritis and both dietary patterns

(p=.003) and stress levels (p = .025), while no significant relationships were observed for learning environment (p = .589) or physical activity (p = .111). These findings emphasize that individual lifestyle and psychological factors exert a stronger influence on gastric health than structural academic conditions alone.

The significant relationship between dietary pattern and gastritis aligns with previous evidence linking irregular meal timing, skipping breakfast, and high consumption of spicy foods to gastric inflammation among young adults (Li, Zhao, & Hu, 2020; Rahma *et al.*, 2023). In the present study, 77.8 % of participants demonstrated poor dietary practices, including frequent spicy-food intake (45.9 %) and meal skipping (45.3 %), behaviors known to disrupt gastric mucosal integrity and increase acid secretion (Usman & Azizah, 2017).

Similarly, the association between elevated perceived stress and gastritis supports the psychosomatic model in which stress triggers sympathetic activation, enhances gastric acid production, and reduces mucosal protection (StatPearls, 2023). The mean PSS-10 score in this study was 22.6 (SD = 5.4), with 19.3 % of students categorized as highly stressed. Comparable findings were reported by Hura *et al*. (2024), who noted a positive correlation between academic stress and gastrointestinal symptoms among healthcare students.

Conversely, the nonsignificant association between gastritis and physical activity suggests that moderate exercise alone may not offset dietary or psychological risks. Likewise, learning-environment conditions, although potentially contributing to perceived stress, did not independently predict gastritis.

Conclusion and Recommendations

The present study identified a high prevalence of gastritis (57.3 %) among nursing students at the Nursing Training School, Ratnapura, Sri Lanka. The findings revealed significant associations between gastritis and both poor dietary patterns (p = .003) and high perceived stress levels (p = .025), while learning environment (p = .589) and physical activity (p = .111) showed no significant relationships. These results suggest that individual behavioral and psychological factors play a more substantial role in the development of gastritis than institutional or environmental factors alone.

Most participants exhibited poor dietary habits, including irregular meal timing, skipping breakfast, and frequent consumption of spicy foods, alongside moderate to high stress levels as indicated by a mean PSS-10 score of 22.6 (SD = 5.4). These lifestyle behaviors contribute to increased gastric acid secretion and mucosal irritation, heightening the risk of gastritis.

Given these findings, nursing education programs should integrate structured health-promotion strategies aimed at fostering healthy eating and stress management practices. Regular nutrition counseling, designated meal breaks during clinical training, and educational modules on gastrointestinal health are strongly recommended. Furthermore, incorporating stress-reduction

interventions—such as mindfulness-based relaxation, peer support systems, and time management workshops—may improve both mental and physical well-being.

Future longitudinal and interventional studies are recommended to explore the causal relationships among stress, diet, and gastritis and to evaluate the effectiveness of targeted health-promotion interventions among nursing students.

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