

**Social factors contributing to peptic ulcer disease among student nurses at Kampala University School of Health Science. A cross-sectional study.**

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**Abstract**

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**Background:**

*H. pylori* prevalence is high among adults aged 18–40 years and is associated with cigarette smoking, alcohol consumption, and poor sanitation. The study aims to investigate social factors contributing to peptic ulcer disease among student nurses at Kampala University School of Health Science.

**Methodology:**

A descriptive cross-sectional study design employing quantitative methods of data collection, which involved the use of numerical values to assess the information. The target population was student nurses of Kampala University because they were the most affected by peptic ulcer disease due to the prevailing conditions faced by students. A sample size of 56 respondents was used.

**Results:**

At the time of the exercise, the certificate students were not readily available to participate in the interview; 46(82%) of the respondents had both parents alive, while 10(18%) had lost their parents. 41(73%) of the respondents fasted while 15(27%) did not fast. This is supported by the country's religious strength and the freedom to worship. Above, 8(14%) of the respondents were offered financial support by their parents, while 48(86%) did not receive any financial support from their parents. 13,24(43%) of the respondents had family members diagnosed with peptic ulcer disease, while 32(57%) of the respondents did not have any family member diagnosed with peptic ulcer disease. 29(52%) respondents had family members who smoked cigarettes or took alcohol, and 27(48%) who neither smoked cigarettes nor took alcohol.

**Conclusions:**

Social factors also contributed to PUD cases among students, where some students had a family history of PUD cases, religions like Christianity and the Muslim religion, who engage in fasting, and having friends or family members who take alcohol increased the risk of developing PUD among students.

**Recommendations:**

The students should be encouraged to always take their meals on time and avoid skipping meals.

**Keywords:** *Peptic Ulcer Disease, Social Factors, Student Nurses, Family History, Religious Fasting, Alcohol use, Tobacco use, Kampala University School of Health Science.*

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**Background**

Beyond *H. pylori* infection, a number of other factors, such as socioeconomic, environmental, and psychological traits, are linked to peptic ulcers. Social demographic factors linked to peptic ulcer disease (PUD) include age, low education, low socioeconomic status or low salary, household crowding, irregular meal intake, breakfast skipping, smoking, heavy alcohol intake, high BMI, NSAID use, musculoskeletal pain, headache, psychological and physical stress, and previous peptic ulcer. Women living alone are more likely to have PUD, tend to have higher systolic blood pressure, lower education levels, and be older than women in larger

households (Mi Hong et al., 2021). *H. pylori* prevalence is high among adults aged 18–40 years and is associated with cigarette smoking, alcohol consumption, and poor sanitation (Kakooza, 2021).

Individuals who consume alcohol face a greater risk of developing PUD than non-drinkers, and those with irregular meal timings are more at risk than those who eat at regular times. Having close friends is linked to higher alcohol consumption, and families without alcohol prohibition show increased ulcer risk compared to those with prohibition. Purchasing alcohol after 16:00 hours is associated with higher PUD risk than buying it between 08:00 and 16:00 hours (Phomphithak et al., 2020).

Military personnel exhibit higher smoking rates (24.0%) than the general population (21.2%), making smoking a major risk factor for peptic ulcers in this group (Wang et al., 2020).

Among university students diagnosed with PUD between 2014 and 2019, the majority are Christians (74.7%) and first-year students (30.4%). Females account for 55.6% of cases overall, though prevalence varies by year. The highest prevalence occurs in the 17–21 age group in some years and shifts to older groups (22–26 and 27–31) in others. Starvation and stress are the most common modifiable risk factors (present in 100% of cases), followed by NSAID use, alcohol consumption, and cigarette smoking (Zibima et al., 2020). The study aims to investigate social factors contributing to peptic ulcer disease among student nurses at Kampala University School of Health Science.

## METHODOLOGY

### Study design and rationale

The study used a descriptive cross-sectional study design employing quantitative methods of data collection, which involved the use of numerical values to assess the information. This design was used to enable the researcher to obtain data at one point in time.

### Study setting and rationale

The study was conducted at Kampala University School of Nursing and Health Science, Kampala District, located in the central region of Uganda.

This Campus was established in 2005 to close the country’s gap in training its citizens in the areas of Nursing, Midwifery, and Health Sciences. The campus also houses KU’s Graduate School and the Research Directorate. It is located in Kigagga Zone, Mutundwe parish, Lubaga division, Kampala District, about 4 km from the city center and ½ a km off Kabuus-Kitebi road at Muteesa II Memorial stadium (Wankulukuku) junction.

### Study population

The target population was student nurses of Kampala University because they were the most affected by peptic ulcer disease due to the prevailing conditions faced by students.

### Sample size determination

A sample size of 56 respondents was used; the sample size was determined using the Krejcie and Morgan (1970) table, as shown below, which is a true representative of the study population.

Table 1: Table for determining sample size from a given population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

**Note: N is for the population size, which is 65, and S is the sample size, which is 56.**

### Sampling procedure

This was achieved through convenient sampling of student nurses who were present for data collection.

### Inclusion criteria/exclusion criteria

The study specifically targeted the student nurses of Kampala University who were present during the days of data collection and were given informed consent.

The excluded were the student nurses who were not willing, or those who declined to participate in the study, and those who were absent.

### Independent variables

The independent variables were social factors.

### Dependent variable

The dependent variable was peptic ulcer disease.

### Research instruments

A pre-testing questionnaire with both open and closed-ended questions was designed and administered to the selected respondents who consented to participate in the study. Face-to-face interviews were conducted with the selected respondents who filled in responses by themselves since all students were literate. This method was also opted for because it enabled easy acquisition of information within a short period.

### Data collection procedure

An introductory letter from Kampala University School of Nursing and Health Sciences was presented, which introduced the interviewer to the respondents. An introduction was made to the respondents, along with a brief explanation of the study. The respondents who accepted signed the informed consent form and were interviewed using the questionnaires. Four respondents were sampled per day over about 11 days.

### Data management

The filled questionnaires were cross-checked, coded, and edited before leaving the study area to minimize errors during data analysis. The filled questionnaires were put in an envelope and kept in safe custody under lock and key, accessible only to the interviewer. Analyzed data on the computer was protected from access by using a password known only to the interviewer. Data analysis and presentation

The collected data were manually analyzed and tallied; the results were processed using Microsoft Word and Excel programs, which were processed and presented in the form of frequency tables, figures, pie charts, graphs, and narratives.

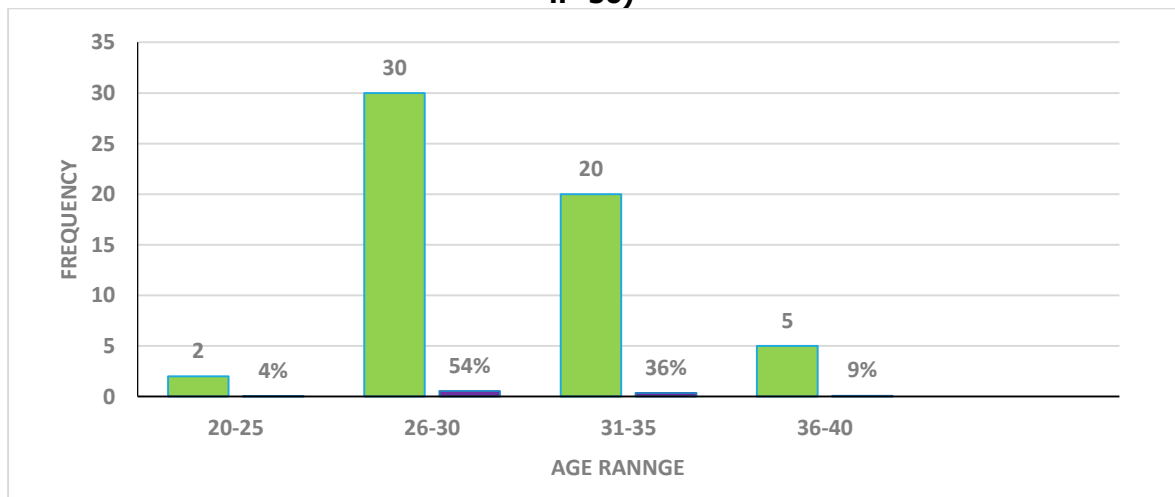
### Ethical considerations

Approval was obtained from the research supervisor; permission was sought and granted from the principal of Kampala University School of Nursing and Health Sciences by obtaining an introductory letter. The study only commenced with the topic and objectives being introduced and explained to the respondents, who had to understand and voluntarily consent to participate in the study. Respondents were also informed that participation was voluntary, with an informed consent form being signed, and it was affirmed to them that the information given was strictly confidential and that serial numbers would be used instead of the respondent's name.

## RESULTS

### Demographic Data

**Figure 1: A graph showing the distribution of respondents by age (n=56)**



**Source: Primary data, 2024.**

In Figure 1, most of the respondents were in the age range of between 26 to 30 years 30 (54%), 20(36%) were in the range of 31 to 35 years, 5(9%) were between 36 to 40 years, and 2(4%) were in the age range of 20 to 25 years.

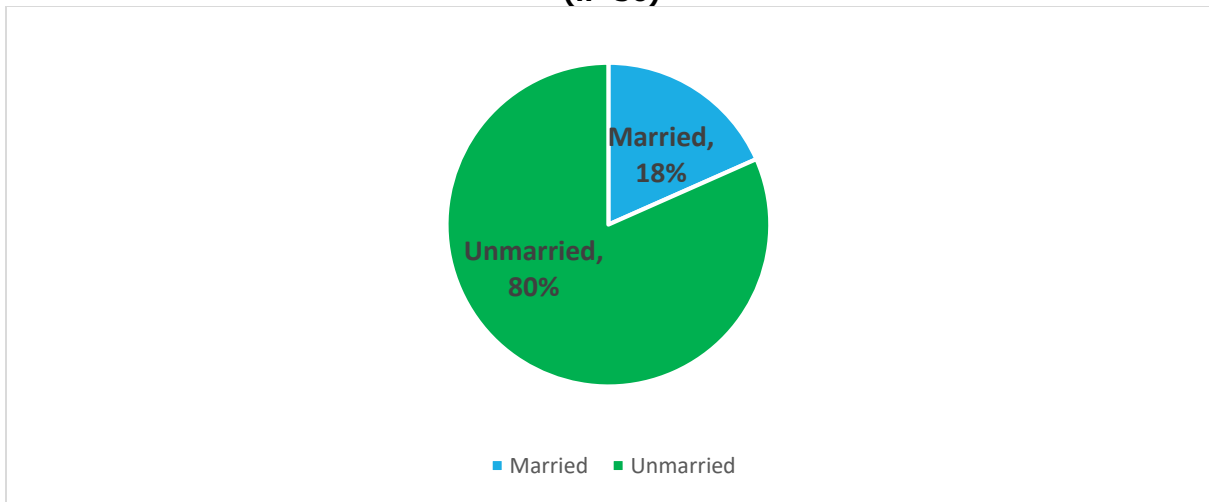
**Table 1: Shows the distribution of respondents by sex  
(n=56)**

Gender	Frequency (f)	Percentage (%)
Male	11	20
Female	45	80
<b>Total</b>	<b>56</b>	<b>100</b>

*Source: Primary data, 2024.*

In Table 2, majority 45(80%) of the respondents were female while 11(20%) were male.

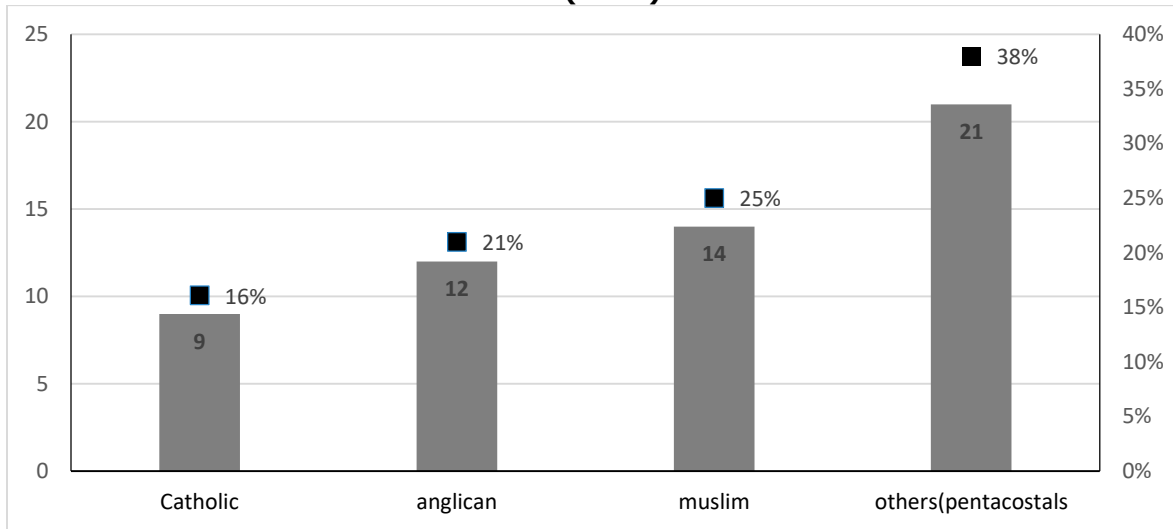
**Figure 2: A pie chart showing the distribution of respondents by marital status  
(n=56)**



*Source: Primary data, 2024.*

In Figure 2, the majority, 46(82%) of the respondents were not married, while 10(18%) were married.

**Figure 3: A graph showing the distribution of respondents by religion (n=56)**



*Source: Primary data, 2024.*

In Figure 3, 21 (38%) of the respondents were for other religions (Pentecostals), followed by 14(25%) who were Muslims, 12 (21%) who were Anglicans, and 9(16%) who were Catholics.

**Table 2: Shows the distribution of respondents by profession (n=56)**

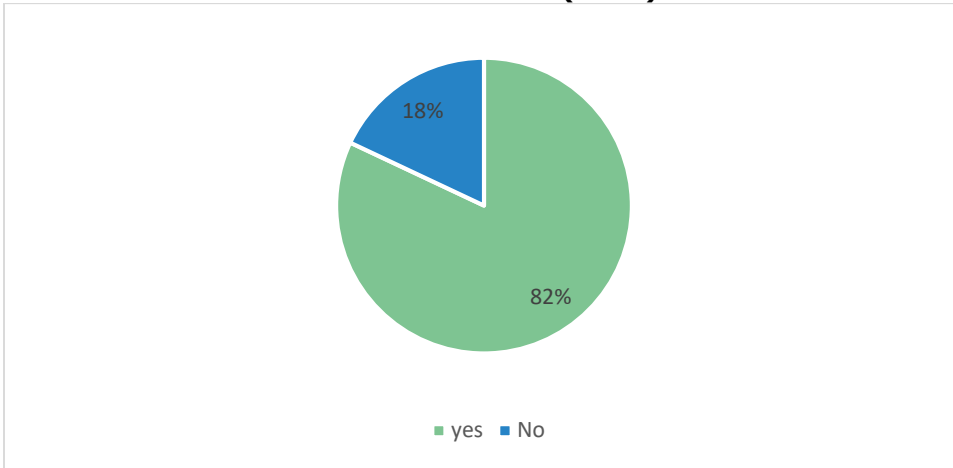
Course	Frequency (f)	Percentage (%)
Diploma in midwifery	12	21.0
Diploma in Nursing	44	79.0
<b>Total</b>	<b>56</b>	<b>100</b>

*Source: Primary data, 2024.*

In Table 3, the majority of the respondents, 44(79%), were diploma in nursing students while 21(21%) were diploma in midwifery students. At the time of the exercise, the certificate students were not readily available to participate in the interview.

**Social factors contributing to PUD**

**Figure 4: A pie chart showing whether both parents of the respondent were alive or not (n=56)**



**Source: Primary data, 2024.**

In Figure 4, 46(82%) of the respondents had both parents alive, while 10(18%) had lost their parents.

**Table 4 shows whether the respondents fasted or not (n=56)**

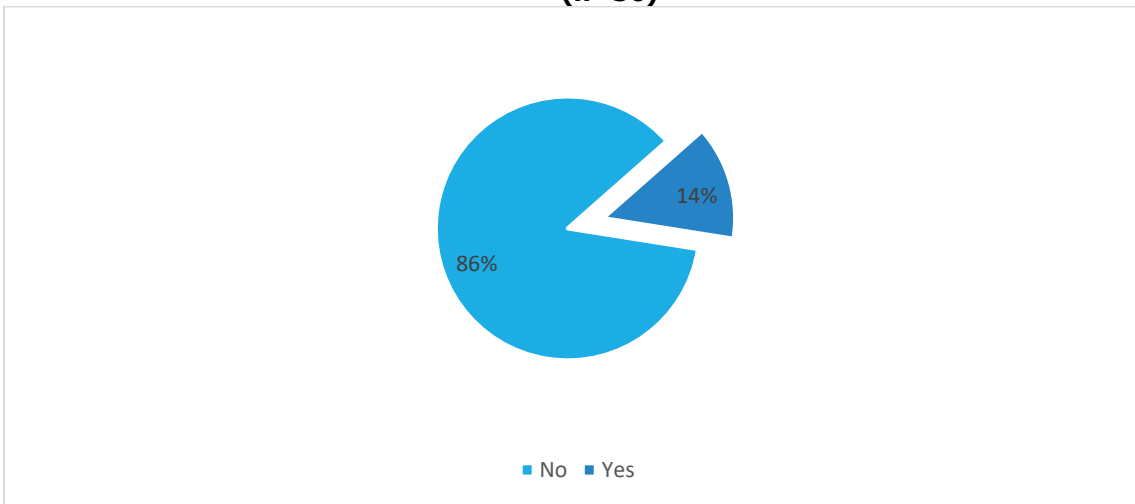
Response	Frequency(f)	percentage
Yes	41	73%
No	15	27%
<b>Total</b>	<b>56</b>	<b>100</b>

**Source: Primary data, 2024**

In Table 4, 41(73%) of the respondents fasted while 15(27%) did not fast. This is supported by the country’s religious strength and the freedom to worship.

**Figure 5 shows whether the respondents were offered financial support by their parents or not.**

**(n=56)**



**Source: Primary data, 2024**

In the pie chart (Figure 5), 8(14%) of the respondents were offered financial support by their parents, while 48(86%) did not receive any financial support from their parents.

**Table 5: Respondents with a family member diagnosed with a peptic ulcer (n=56)**

Response	Frequency(f)	percentage
Yes	24	43%
No	32	57%
<b>Total</b>	<b>56</b>	<b>100</b>

*Source: Primary data, 2024*

According to Table 5, 24(43%) of the respondents had family members diagnosed with peptic ulcer disease, while 32(57%) of the respondents did not have any family member diagnosed with peptic ulcer disease.

**Table 6: Respondents with family members who smoked cigarettes or took alcohol (n=56)**

Response	Frequency(f)	percentage
Yes	29	52%
No	27	48%
<b>Total</b>	<b>56</b>	<b>100</b>

*Source: Primary data, 2024*

Table 6 represents 29(52%) respondents who had family members who smoked cigarettes or took alcohol, and 27(48%) who neither smoked cigarettes nor took alcohol.

## DISCUSSION

### Demographic information

Most of the respondents were in the age range of 26 and 30 years. (30 or 54%), 20(36%) were in the range of 31 to 35 years, 5(9%) were between 36 and 40 years, and 2(4%) were in the age range of 20 to 25 years, which were the right target because they were mature enough to give good responses, which facilitated the research process Kakooza., (2021) from the Students' Journal of Health Africa found *H. pylori* to be high among adults between the age of 18-40 and associated it with smoking cigarettes, drinking alcohol, and poor sanitation.

The majority, 45(80%) of the respondents were female, while 11(20%) were male, as seen in Table 2. This was expected because in Uganda, a high number of females pursue nursing courses compared to their male counterparts.

In Figure 2, the majority, 46(82%) of the respondents were not married, while 10(18%) were married. It was expected because most people prefer to get married after their studies, while a few continue with their studies after getting married.

In Figure 3, 21 (38%) of the respondents were for other religions (Pentecostals), followed by 14(25%) who were Muslims, 12 (21%) who were Anglicans, and 9(16%) who were Catholics. The greatest number of students at Kampala University were mostly Pentecostal, followed by Muslims, then Anglican, while a few were Catholics.

In Table 3, the majority of the respondents, 44(79%), were diploma in nursing students, while 12(21%) were diploma in midwifery students; certificate students were not

available at the time of the data collection exercise due to the University schedule. The majority of students at Kampala University School of Health Science were nursing students compared to the midwives, who were few. Since all students were literate, they were able to understand the questions and answer with ease.

### Social factors contributing to peptic ulcer disease

In Figure 4, 46(82%) of the respondents had both parents alive, while 10(18%) had lost their parents. Being without a parent as a student can lead to stress and lack of financial support hence increasing the risk of developing PUD which is related to the study done by Honcharuk L.M et al., (2023) who described the mechanisms of damage to the mucous barrier of the gastroduodenal zone due to a violation of vegetative regulation, depolymerization of mucoproteins of the mucous barrier of the stomach, activation of oxidative stress against the background of damage to the microcirculatory channel are described which prove the essential role of stress as a factor in ulcerogenesis

In Table 4, 41(73%) of the respondents fasted while 15(27%) did not fast. This is common among religions like the Christian religion and Muslims, which corresponds with the study done by Zibima et. al. (2020), where Christians (74.7%) had the highest number of PUD cases. Prevalence was highest among students aged 17-21 years in 2014

In Figure 5, 8(14%) of the respondents were offered financial support by their parents, while 48(86%) did not

receive any financial support from their parents. Lack of financial support from parents as a student can lead to stress and starvation, hence increasing the risk of developing PUD.

According to Table 5, 24(43%) of the respondents had family members diagnosed with peptic ulcer disease, while 32(57%) of the respondents did not have any family member diagnosed with peptic ulcer disease. This has a connection with a study done by (Yang et al., 2023), which recognized genetic factors to contribute to PUD because some of the respondents who had PUD had family members with PUD.

Table 6 represents 29(52%) respondents who had family members who smoked cigarettes or took alcohol, and 27(48%) who neither smoked cigarettes nor took alcohol. Chansy Phomphithak et. al. (2020) found alcohol-drinking groups to be more at risk of developing PUD than non-alcoholics; families without alcohol prohibition were at greater risk of developing ulcers than families who prohibited alcohol drinking.

### Limitations of the Study

- Time constraint: The time given to complete research was not adequate to acquire enough representative samples, meaningful, and sufficient data for the study, since there were other commitments, such as doing clinical practice and state final exams. However, drawing a timetable helped to overcome this challenge.

- Making appointments with selected respondents was a challenge due to their busy schedules, which did not allow them to participate freely in the study. However, flexibility was shown with the respondents' schedules for the day by utilizing their free periods.

- Inadequate finances were a limitation, given the high operating costs of transport, photocopying, typing, and other research costs. However, this limitation was overcome by drawing up a budget that was strictly followed through, utilizing the available resources.

### Conclusions

Social factors also contributed to PUD cases among students, where some students had a family history of PUD cases, religions like Christianity and the Muslim religion, who engage in fasting, and having friends or family members who take alcohol increased the risk of developing PUD among students.

### Recommendations

The students should be encouraged to always take their meals on time and avoid skipping meals.

The university administration should ensure that all meals are served at the right time without delay.

Students should be encouraged to seek proper medical care in case they develop signs and symptoms of PUD.

The students should be health educated about PUD preventive measures.

The university should provide a counseling section for students to avoid psychological stress, hence reducing the risk of PUD.

The government should organize PUD eradication campaigns targeting students.

### Implications for Nursing Practice

Peptic ulcer disease is a gastrointestinal condition affecting a large portion of the population worldwide, with life-threatening complications that, if left untreated, can lead to death. This calls for putting in measures like prevention and early management to avoid further complications.

### ACKNOWLEDGEMENT

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Lastly, thanks go to the student nurses at Kampala University for accepting to participate with maximum cooperation and a positive attitude during data collection.

### List of Abbreviations

BMI: Body Mass Index

H. pylori: Helicobacter pylori

NSAID: Non-Steroidal Anti-Inflammatory Drug

PUD: Peptic Ulcer Disease

### Source of funding

The study was not funded.

### Conflict of interest

The author did not declare any conflict of interest.

### Author contributions

Babra Chekwemol was the principal investigator.

Mrs. Nalwoga Elizabeth supervised the research.

### Data availability

The data is available upon request.

### Author Biography

Babra Chekwemol is a student at Kampala University School of Nursing and Health Sciences.

Mrs. Nalwoga Elizabeth is a tutor at Kampala University School of Nursing and Health Sciences.

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