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Orginal article

Social-economic risk factors to peptic ulcer disease among student nurses of Kampala University, Mutundwe campus, Lubaga division, Kampala district. A cross-sectional study.

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Abstract

Background:

Peptic ulcer disease can also be defined as a mucosal break greater than 3-5mm in the stomach or duodenum with a visible depth. The aim of the study is to assess the socio-economic risk factors to peptic ulcer disease among student nurses of Kampala University, Mutundwe campus, Lubaga division, Kampala district.

Methodology:

A descriptive cross-sectional study design employing quantitative methods of data collection. A sample size of 56 respondents was used, determined using the Krejcie and Morgan table, achieved through convenient sampling of student nurses who were present for data collection. Data was manually analyzed and tallied; the results were processed using micro-Microsoft Word and Excel programs, which were processed and presented in the form of frequency tables, figures, pie charts, graphs, and narratives.

Results:

The majority, 46(82%) of the respondents were not married, while 10(18%) were married. 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. 41(73%) of the respondents fasted while 15(27%) did not fast. 29(52%) respondents had family members who smoked cigarettes or took alcohol, and 27(48%) who neither smoked cigarettes nor took alcohol. 43(77%) of the respondents bought food while 13(23%) did not buy. The majority of the students depend on food prepared in restaurants.

Conclusion:

Socioeconomic risk factors to PUD cases among students were religions like Christianity and the Muslim religion, who engage in fasting, and having friends or family members who take alcohol, lack of adequate income to facilitate the student.

Recommendations:

The students should be health educated about Peptic ulcer disease preventive measures.
The government should organize Peptic ulcer disease eradication campaigns targeting students and youths.

Keywords: *Peptic ulcer disease, Student nurses, Peptic ulcer disease eradication, Kampala University Mutundwe campus.*
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Background

Peptic ulcer disease can also be defined as a mucosal break greater than 3-5mm in the stomach or duodenum with a visible depth, and it may result from an imbalance between factors that protect the stomach and duodenum and factors that may cause damage to it [BMJ 367,2019]. The global prevalence of PUD is found to be higher in females than in males on both ends of the age spectrum. Prevalence peaked in 65- to 69-year-old females and 55 to 59-year-old males. In the age-standardized prevalence rates increased with age, peaking at 80 to 84 years in both males and females (Xin Xie et al.,2022). In Africa, it is estimated that 61-100% of the population is infected and at risk of developing peptic ulcer disease and the other associated diseases with H pylori as the more prevalent cases (Namwihiri et al., 2023). In countries like 93.1% in Congo Brazzaville and Nigeria, PUD prevalence was at 93.1% and36.3%-87.8%, respectively (Smith et al, 2021). In other parts of Africa, a 66.12% prevalence was reported in Egypt, while 63.8% in Morocco (Jaka et al.,2023).

In sub–Saharan Africa, Peptic ulcer disease in dyspeptic patients, 24.5%, was comparable to the prevalence of PUD among symptomatic individuals in developed countries (TN A Archampong, 2016). A total of 434 upper GI endoscopies were performed during the studies of 31 diagnoses of PUD made, where there was a low diagnostic rate of PUD (6.7%) with prepyloric antral gastric ulcers as the most common and multifactorial etiology (Ray-Offor et al., 2020). In Ethiopia to determine patient presentation, management, and post-operative complications of perforated peptic ulcer disease revealed that old age, being female, presence of comorbidity, hypertension, tachycardia and delayed presentation were significantly associated with postoperative morbidity, Old age, comorbid illness and tachycardia and development of post-operative complications were found to increase the risk of mortality (H Teshome et al, 2020). At Kiryandongo General Hospital in Uganda, the prevalence of H. Pylori infection is high among dyspeptic patients. H. pylori infection was found to be associated with anemia, age, water sources, and intestinal parasitic infection; the overall prevalence of helicobacter pylori infection was 42.4% (120/283) (Asiimwe et al., 2023).

In a rural population in Eastern Uganda, the seroprevalence of H. pylori was 27.3%, and 28.4% of the females were positive compared to 25.3% of males. Consumption of animal products (meat, milk, and eggs) was the only statistically significant factor associated with H. pylori seropositivity. Consumption of animal products was a positive predictor of infectivity and cause of the high H. pylori seroprevalence in eastern Uganda (Nekaka et al, 2021).

Perforated PUD was found to be more prevalent amongst male peasants of rural residence, with the majority of the participants being of blood group O. Gastric perforations were more common than the duodenal and were found anteriorly in most of the cases. Being a casual laborer was independently associated with lower odds of having a gastric perforation compared to being a peasant farmer (Edyedu, 2024). The aim of the study is to assess the socio-economic risk factors to peptic ulcer disease among student nurses of Kampala University, Mutundwe campus, Lubaga division, Kampala district.

Methodology

Study design

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

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 Kabuusu-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
Independent variables
The independent variables were social and economic 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. The researcher conducted face-to-face interviews with the selected respondents who filled in responses by themselves since all students were literate. The researcher also opted for this method because it enabled easy acquisition of information within a short period.

Data collection procedure
The researcher presented an introductory letter from Kampala University School of Nursing and Health Sciences, which introduced her to the respondents. The researcher introduced herself to the respondents and gave a brief explanation of the study. The respondents who accepted signed the informed consent form, and the researcher interviewed them using the questionnaires. The researcher sampled four respondents per day in about 11 days.

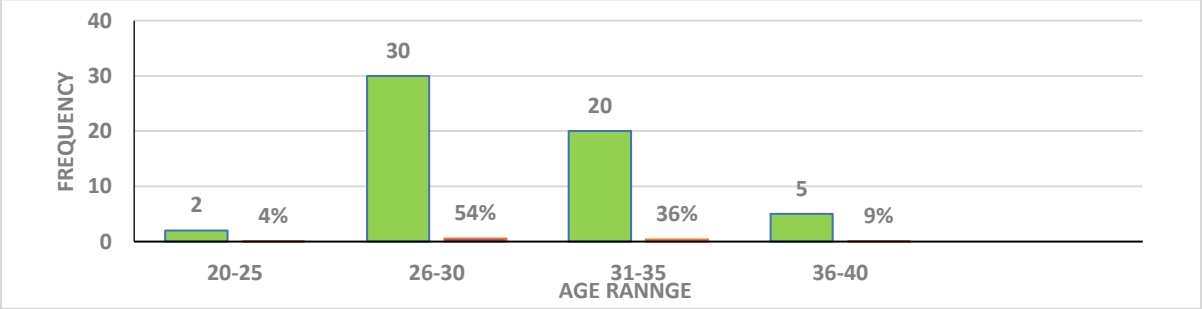
Data management
The researcher cross-checked, coded, and edited the filled questionnaires before leaving the study area to minimize errors during data analysis. The filled questionnaires were put in an envelope and kept in safe custody under lock and key, only accessible to the researcher. Analyzed data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

Data analysis and presentation
The collected data were manually analyzed and tallied; the results were processed using micro MicrosoftWord 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 researcher introducing and explaining the topic and objectives to the respondents, and they had to understand and voluntarily consent to participate in the study. The researcher also informed them that participation is voluntary, with an informed consent form being signed, and also affirmed to them that the information given was strictly confidential and serial numbers were going to 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.

Figure 1: Most of the respondents were in the age range of between 26 and 30 years
30 (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.

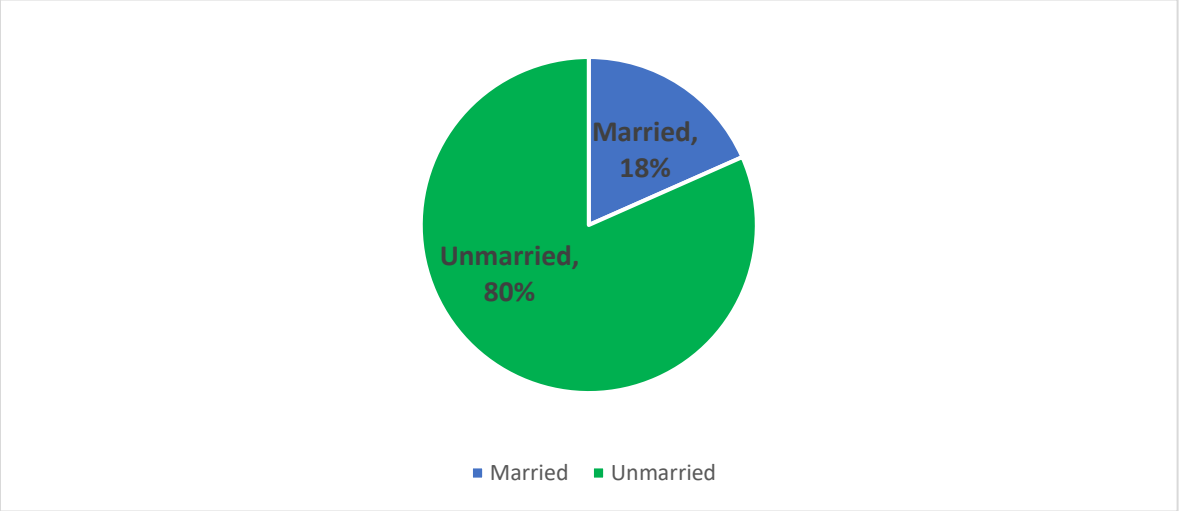
Table 2: Shows the distribution of respondents by sex (n=56)

Gender	Frequency (f)	Percentage (%)
Male	11	20
Female	45	80
Total	**56**	**100**

Source: Primary data, 2024.

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

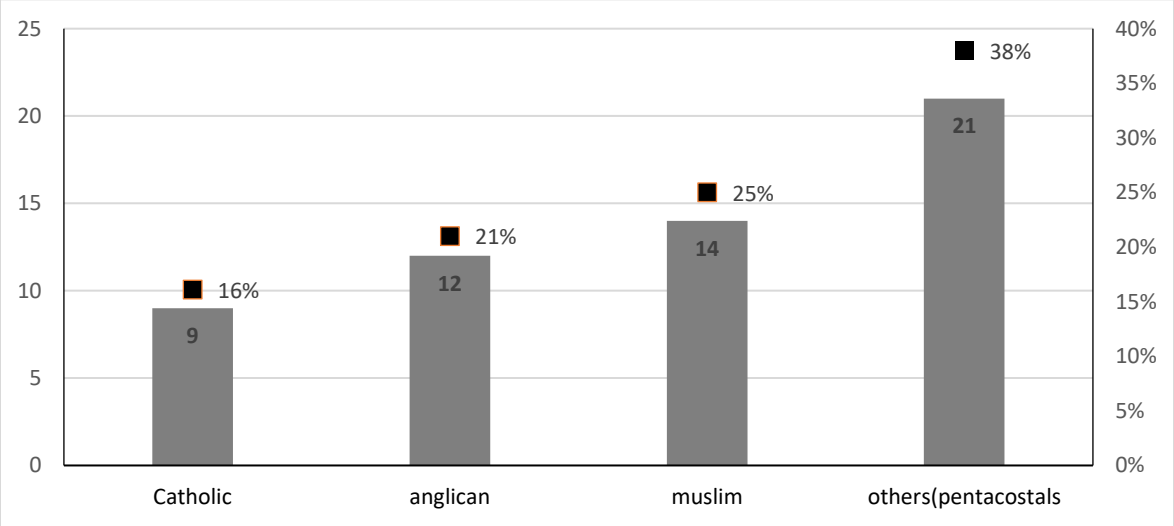
Figure 2: A pie chart showing the distribution of respondents by marital status (n=56)



Source: Primary data, 2024.

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.

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 3: Shows the distribution of respondents by profession (n=56)

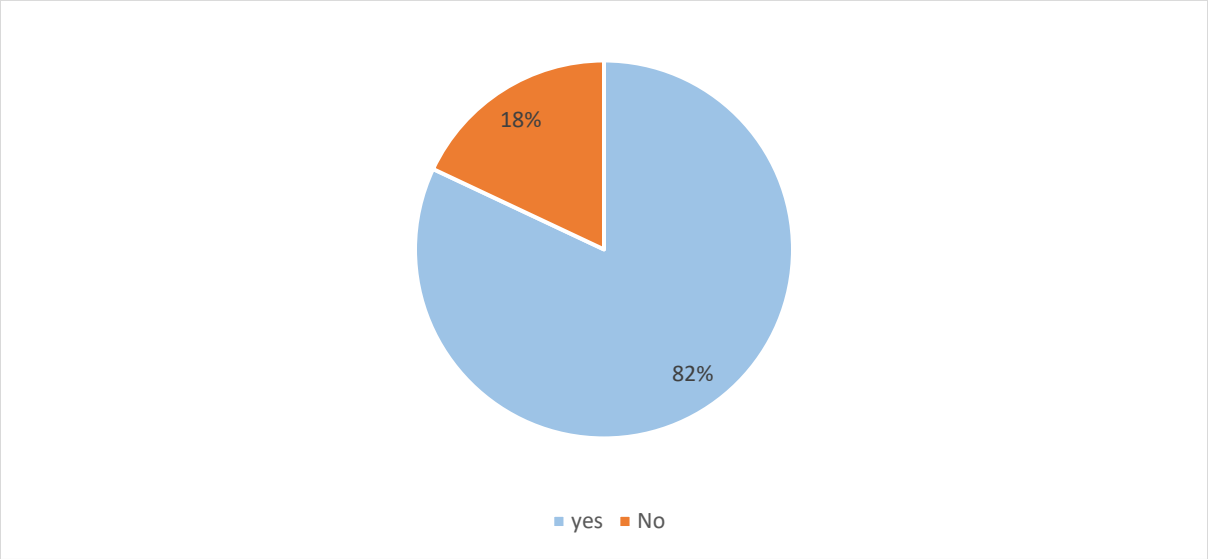
Course	Frequency (f)	Percentage (%)
Diploma in midwifery	12	21.0
Diploma in Nursing	44	79.0
Total	**56**	**100**

Source: Primary data, 2024.

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.

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

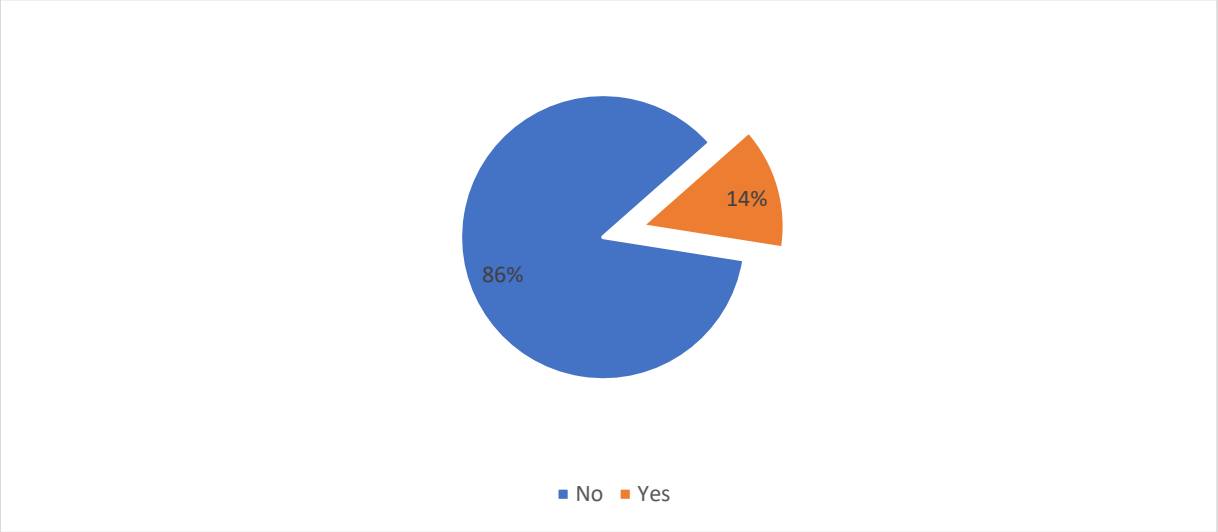
Table 4 shows whether the respondents fasted or not (n=56)

Response	Frequency(f)	percentage
Yes	41	73%
No	15	27%
Total	**56**	**100**

Source: Primary data, 2024

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

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 (n=56)

Response	Frequency(f)	percentage
Yes	24	43%
No	32	57%
Total	**56**	**100**

Source: Primary data, 2024

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%
Total	**56**	**100**

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.

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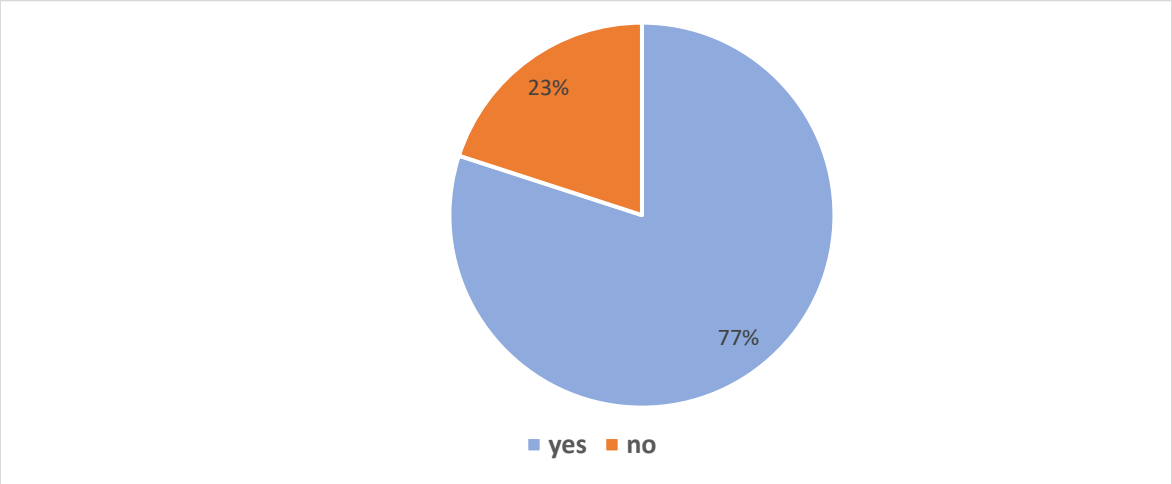
Economic factors contributing to peptic ulcer disease

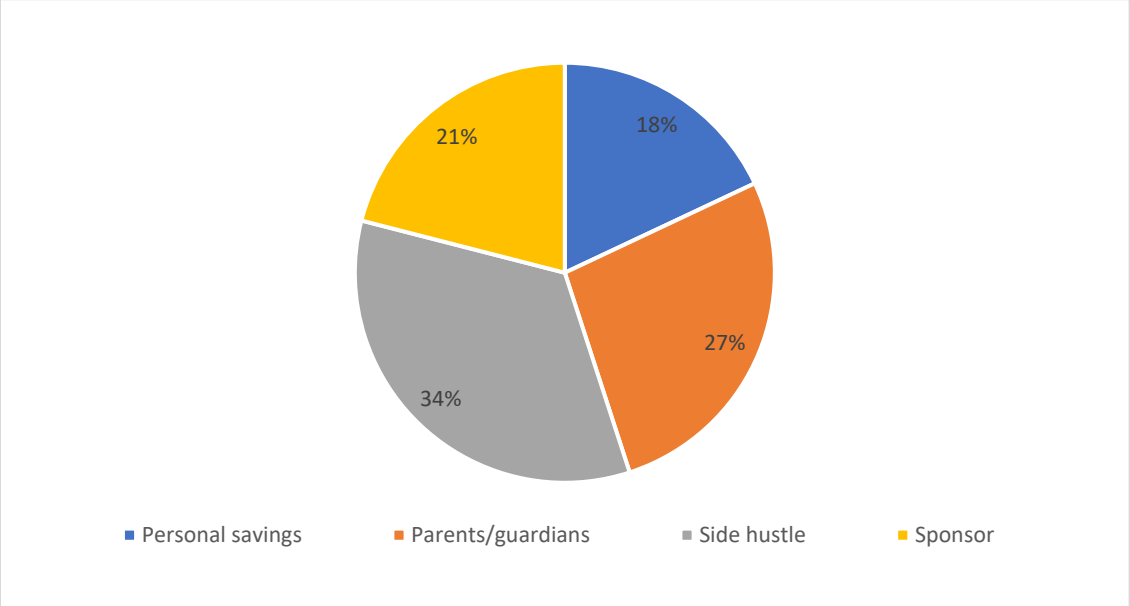
Figure 6 is a pie chart showing whether the respondents sometimes bought meals or not (n=56)



Source: Primary data, 2024.

Figure 6, 43(77%) of the respondents bought food while 13(23%) did not buy. The majority of the students depend on food prepared in restaurants.

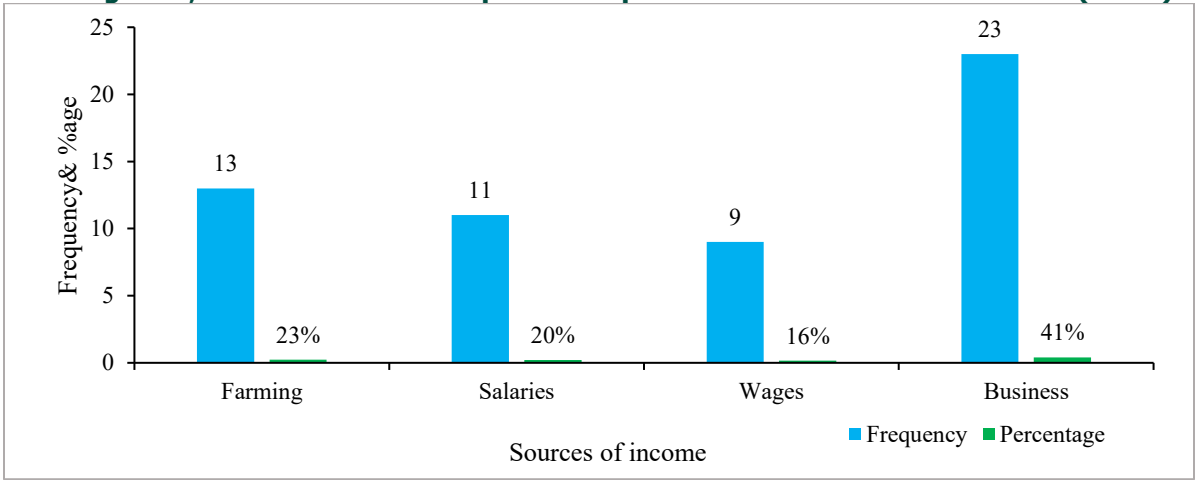
Figure 7 is a pie chart representing the source of respondents' income. (n=56)



Source: Primary data, 2024.

Figure 7, 15(27%) of the respondents got financial support from their parents,19(34%) got it from their side hustle, 12(21%) got it from their sponsors, and 10(18%) of the respondents got it from their savings.

Figure 8, the source of the respondents' parents' income (n=56)



Source: Primary data, 2024.

In Figure 8, 23(41%) of the respondents' parents got their income from business, while 13(23%) got from farming, 11(20%) got from salaries, and 9(16%) from wages.

Discussion

Social factors contributing to peptic ulcer disease

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

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

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.

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. 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.

Economic Factors Contributing to PUD

15(27%) of the respondents got financial support from their parents,19(34%) got from their side hustle, 12(21%) got from their sponsors, and 10(18%) of the respondents got from their savings. Lack of adequate income to facilitate a student increases the risk of PUD since it leads to starvation and stress, which is in line with a study done by Zibima et. al. (2020) who found that Starvation and stress were most common (100%) among students.

23(41%) of the respondents' parents got their income from business, while 13(23%) got from farming, 11(20%) got from salaries, and 9(16%) from wages. This is in line with Rebecca Nekaka et. al. (2021) in a community cross-sectional study in a rural population in Eastern Uganda, who found consumption of animal products (meat, milk, and eggs) was the only statistically significant factor associated with H. pylori seropositivity. Consumption of animal products was a positive predictor of infectivity and a cause of the high H. pylori seroprevalence in eastern Uganda.

Conclusion

Socioeconomic risk factors to PUD cases among students were religious groups like Christianity and the Muslim religion, who engage in fasting, and having friends or family members who take alcohol, lack of adequate income to facilitate the student.

Recommendations

The students should be health educated about PUD preventive measures.

The government should organize PUD eradication campaigns targeting students and youths.

Acknowledgement

I glorify God for granting me knowledge to accomplish this work, and on a special note, extend my gratitude to my supervisor, Mrs. Nalwoga Elizabeth, for the continuous guidance she provided throughout the whole process of report writing.

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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

PUD: peptic ulcer disease

H. PYLORI: Helicobacter pylori

Source of funding

The study was not funded.

Conflict of interest

The author did not declare any conflict of interest.

Author Biography

Babra Chekwemoi is a student of a diploma in Nursing extension at Kampala University School of Nursing and Health Sciences.

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

Grace Denise Akwang is the Principal of Kampala University School of Nursing and Health Sciences.

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