Factors Contributing to increased cases of Peptic Ulcer Disease among Patients aged 18-70 years attending Kisoro Hospital Kisoro District . A Descriptive Cross-sectional Study.

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Abstract

The purpose of the study was to determine factors contributing to increased cases of peptic ulcer disease among patients aged 18-70 years of attending Kisoro hospital Kisoro district.

Background:

The specific objectives of the study were to determine social-demographic, economic and medical factors contributing to increased cases of peptic ulcer disease among patients aged between 18-70 years in Kisoro hospital Kisoro district.

Methodology:

A descriptive cross-sectional study design was used as a study design; data was corrected on a sample of 60 respondents who were selected using a simple random sampling technique and questionnaires were used as data collection tools.

Results:

Regarding social-demographic factors contributing to increased cases of PUD, the majority (60%) of the respondents were older people aged between 41-70 years, most of the patients were males (60%) and most (50%) of the respondents were professionals. The study on economic factors contributing to increased cases PUD revealed that the majority of patients (75%) had a history of excessive alcohol consumption and the most (52%) of the respondents were low-income earners.

Conclusion:

From the study findings, social-demographic factors contributing to peptic ulcer disease were older people of age between 41 and 70 years.

Recommendation:

The researcher recommended the formulation and implementation of awareness programs and educative programs that would target peptic ulcer patients in hospitals and other people in the community especially men to increase awareness of the risk factors for PUD so that appropriate preventive measures are followed.

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1 Background of the study

A peptic ulcer is a break (like a sore) in the lining of the stomach or the upper part of the small intestine, with a diameter of at least 0.5 cm penetrating through the muscularis mucosa. Majorly represented by symptoms of epigastric pain typically relieved by food or alkali, often exhibit periodicity (Rajesh Dhojjoshi *et al.,* 2018).

Peptic ulcer disease brings about gastric cancer due to ulcerations, Worldwide gastric cancer has been reported to be the fifth most common cancer and the third leading cause of cancer-related death

(Rawla et al., 2019) Peptic ulcer is a break (like a sore) in the lining of the stomach or the upper part of the small intestine, with a diameter of at least 0.5 cm penetrating through the muscularis mucosa.

Majorly represented by symptoms of epigastric pain typically relieved by food or alkali, often exhibit periodicity (Rajesh Dhojjoshi *et al.,* 2018).

The infection is more prevalent in lower socioeconomic groups with poor living standards, and crowded living conditions, with those with lower levels of education and poor hygiene (Kadhim G, Omar H, Ismail A, 2015)

Peptic ulcer Diseases (PUDs) are generally categorized based on their anatomical origin as gastric or duodenal. Gastric ulcers are found along the lesser curvature of the stomach, and duodenal ulcers usually occur in the duodenal bulb, the area most exposed to gastric acid (Sang Pyo Lee *et al.,* (2017)

According to the report by Mukhtar (2014), Helicobacter pylori had been thought of as the main etiological factor for 90% duodenal and 80% of gastric ulcers. With the recent decline in the prevalence of H. pylori in western countries, PUDs, especially gastric ulcers are caused by

Nonsteroidal Anti-Inflammatory Drugs (NSAIDs) and Acetylsalicylic Acid (ASA).

Depending on research done by Ping-YiLin (2019) indicates that self-reported PUD prevalence among people aged 18 years and above in the United States was 10.3% in 1989 compared to a prevalence rate of 9.4% in asymptomatic subjects who were current smokers.

According to Kadhim G (2015), Psychological stress can contribute to the development of PUD and can exacerbate the symptoms of existing conditions by interacting with H. pylori and other risk factors increasing PUD. There is also positive interaction between perceived job stress and smoking on the development of PUD.

According to a report by TY-Jour (2019), the annual incidence rates of PUD were 0.10-0.19% for physician-diagnosed PUD and 0.03-0.17% when based on hospitalization data. The 1-year prevalence based on physician diagnosis was 0.12-1.50% and that based on hospitalization data was 0.10-0.19%. The majority of studies reported a decrease in the incidence or prevalence of PUD over time. Although reported incidence and prevalence are decreasing. This decrease may be due to a decrease in H. pylori-associated PUD.

According to the research done by O Ijarotimi (2017) indicate that the prevalence of PUD in Nigeria Africa is as follows Duodenal ulcers were found to be 15.8% and Gastric ulcers were

13.2% while gastric erosions were 8.8%. The frequency of occurrence of duodenal ulcers in 2000 - 2004 was 22.9% compared with 9.2% in 2005 – 2010.

Overall 18% (17.8) of patients developed postoperative complications in this study with 95% CI (10.5,25.2). It is in line with studies done in Turk in different states 20.3% and 23% respectively but lower than that in studies in Tanzania (10.7%)Irrua and Nigeria 17.3% (Tesbir ET al 2020)

The research done by T.R Okello (2016), indicated the prevalence of PUD in Uganda in 2015 compared with that of 2005. PUD was found to be 9.6% in 2005 and in comparison, it had fallen to 2.9% by 2015. When statically tested, the prevalence of PUD significantly reduces within ten years in our community. The specific objectives of the study were to determine social-demographic, economic and medical factors contributing to increased cases of peptic ulcer disease among patients aged between 18-70 years in Kisoro hospital Kisoro district.

2 Methodology

Study design.

The study adopted a cross-sectional descriptive study design that gathers information in the shortest time possible and the reason why the design was preferred is that the researcher was able to gather information in the shortest time of time

Study setting

The study was conducted at Kisoro Hospital located in Kisoro hospital. It's found in South Western Uganda along the Kisoro-Bunagana road. It's about 550km by road, southwest of Kampala Uganda's capital city.

It has a bed capacity of 150+ beds and serves a population of over 500000 people in its district. It serves people from nearby countries for example people from Rwanda and Congo come and seek medical services there. The facility has several departments such as the Eye department, maternity department, HIV department, and Outpatient departments.

Study population

The study targeted a population consisting of all adult patients aged 18-70 years. The sampling

frame consisted of adult patients diagnosed with peptic ulcer disease.

Sample size determination

The Sample Size for the cross-sectional study was determined using the formula below:

QR/T (Button, 1965)

Where,

Q= Total number of days spent in the data collection

R=Maximum of respondents per day

T=maximum time taken by the interviewer.

Therefore,

Q = 10 days

R = 6 respondents

T = $\frac{1}{2}$ hours

QR/T = 10X6/1/2

60/1/2 = 120 respondents

But because of limited time and finance, the researcher used 60 respondents.

Sampling technique

Purposive sampling was done to obtain the sample. It involved choosing respondents based on the purpose of the study. It entailed recruiting adult patients for the study as they were diagnosed with PUD in the hospital. This method was used because it saved time and the method was quick

Selection

Inclusion criteria

Adults both male and female aged between 18-70 years were diagnosed with peptic ulcers present during the period of data collection and ready to consent.

Elusion criteria

PUD Patients who were too sick to respond to questions.

Study variables

Independent variables

Independent variables were social-demographic, economic, and medical factors

Dependent variables

Dependent variables were increased cases of peptic ulcer disease.

Data collection method

The study focused on primary data because wanted primary information from the respondents. Data was collected using a semi-structured questionnaire since not all patients were able to interpret questions. The questionnaire was divided into two sections that is patient's demographic data and questions that gather information about the medical history and social demographic and economic status patient. The questionnaires were administered to patients upon being informed about the study. The reason for using questionnaires is they were easy to use and saves time during data collection.

Pretesting the questionnaire

The researcher pre-tested the questionnaire at a different facility that is Nyarusiza sub-county health center III in Kisoro to determine whether it suits the research and is acceptable. After the researcher proceeded with the data collection at Kisoro Hospital.

Data collection procedure

An introductory letter to the research ethics committee of the school was obtained from Kampala School of Health Sciences upon clearance, the research ethics committee, the researcher introduced himself to the ward in charge who later identified patients with PUD and was involved in the study. The researchers converted the patients to participate in the study.

Data management

During data collection, there was close monitoring, and questionnaires were inspected to check for errors of omission and commission. Data was stored in a double-locked cupboard and the key was only accessed by the researcher.

Data analysis and interpretation

Descriptive analysis was the data that was collected. Information was obtained from the questionnaires checked and verified manually. Data was is accomplished by the use of a suitable statistical package i.e. the analytical software statistical package of social sciences (SPSS). The SPSS software was utilized to generate different descriptive statistics depending on the variable under consideration and the specific study objectives.

Ethical considerations

A recommendation letter was obtained from the Kampala School of Health Science to be able to obtain permission from the KisoroHospital to be able to carry on the research. During data collection, consent was sought from the respondents, and there was confidentiality of the information to be collected by storing data in the double-locked cupboard and key only accessed by the researcher.

2.1 Study Findings

Gender	Frequency(f)	Percentage (%)
Male	36	60
Female	24	40
Total	60	100
Age (years)		
18-25	2	3.3
26-35	8	13.3
36-40	14	23.3
41-70	36	60
Total	60	100
marital status		
Divorced	5	8.3
Married	36	60
Widow	15	25
Single	4	6.7
Total	60	100
Occupation		
Professional	30	50
Business	16	26.7
Public servant	8	13.3
Peasant	6	10
Total	60	100
Education level		
Finished primary	14	23.3
Finished secondary	16	26.7
Finished tertiary	24	40
Never went to school	6	10
Total	60	100
Stress related conditions		
People with stress related conditions	54	90
People without stress related conditions	6	10
Total	60	100

Figure 1. shows distribution of demographic data

Symptoms felt by patients by patients during and after meals		
Pain	8	13.3
Heart burn	45	75
Vomiting	4	6.7
Nothing	3	5
Total	60	100
Smoking		
People who smoke	45	75
People who don't smoke	15	25
Total	60	100
Number of smoke cigarette sticks smoked by patients each day		
1-2	45	75
3-4	10	16.7
5-10	5	8.3
Total	60	100
Patients appetite pattern after meals		
Reduced	8	13.3
Increased	40	66.7
Normal	12	20
Total	60	100

Figure 2. shows distribution of demographic data

2.2 Social-demographic factors contributing to PUD

From the table above, the majority of the respondents were males (60%) and the minority were ladies with 40%.

In reference above, most (60%) of the respondents were between the age of 41-70 years while the least (3.3%) of the respondents were between the age of 18-25 years

The study found, that most (50%) of the respondents were professionals in their careers while the minority below (10%) were peasants.

In addition, most (40%) of the respondents had finished tertiary and the least (10%) never went to school.

The study further revealed that the majority (90%) of the respondents had suffered from stress in their lives while the minority (10%) had never suffered from stress before.

From the figure above, half (75%) of the respondents reported feeling heartburn after meals while the least number (5%) never felt anything during and after eating.

About the above, majority (75%) of the respondents were smokers and the minority (25%) were smokers.

From the figure above, most (75%) of the respondents smoked 1-2 pieces of cigarettes and the least (8.33%) smoked 5-10 pieces of cigarettes each day.

About the table above, most (66.7%) of the respondents experienced increased appetite while the least (13.3%) had reduced appetite levels.

2.3 Economic factors contributing to increased cases of pud.

From the figure above, most of the respondents (48.3%) earned 500,000/= and above while the least (10%) earned a range of 50,000-100,000/= per month.

From the figure above (60%) of the respondents never used to eat meals at a regular interval while the minority (40%) of the respondents used to eat meals regulary.

From the table above, majority (50%) of the respondents experienced heart burn after meals, while the minority (16.7%) vomited after meals.

The figure above indicates that majority (75%) of the respondents consumed alcohol while the minority (25%) never consumed alcohol at all.

The table above showed that most (33.3%) of the respondents consumed 3-5 bottles of alcohol while the least number (6.7%) of respondents consumed 11 and above bottles of alcohol.

The table above showed that more than half (58.3%) of the respondents used to work for 11 and above while the least number (3.3%) of the respondents worked for 3-4 hours.

The figure above indicated that more than half (75%) of the respondents slept in semi-permanent houses while the least (25%) slept in permanent houses.

Medical factors contributing to increased cases of pud

From the figure above, most (80%) of the respondents had a habit of taking NSAIDs while the least (20%) never took NSAIDs**.**

From the figure above, more than a half (53.3%) of the respondents who had a habit of taking NSAIDs, took them before meals while the least (46.7%) took NSAIDs after a meal.

From the figure above, most (50%) of the respondents had blood group O while the least (10%) of the respondents never knew their blood group types.

3 Discussion, conclusion and recommendations

Discussion of findings

Social-demographic factors contributing to increased cases of peptic ulcer disease among patients aged 18-70 years:

The study findings indicated that the majority 60% were old aged between 41-70 years. This corresponds to the study results by MusyokaKatunge (2013) which showed that the majority of the PUD patients were aged between 44-45 years.

The study also revealed that most of the patients who had peptic ulcers were males (60%) this shows that males were more affected by the disease as compared to females (40%). This is in agreement with Sang Pyo Lee (2017) who stated that the male sex was a risk factor for asymptomatic. PUD and female sex being a common predisposing factors for symptoms of functional GI disorders

In this research study, it was also found that the majority of the respondents (90%) were stressed and this corresponds to the study by Asali et al (2018) revealed that Stress was an acute hazard/risk

Table 1. Range of amount of money n=60

Range of amount earned	Frequency	Percentage(%)
50000-100000	06	10
100000-200000	10	16.7
200000-500000	15	25
500000 and above	29	48.3
Total	**60**	**100**

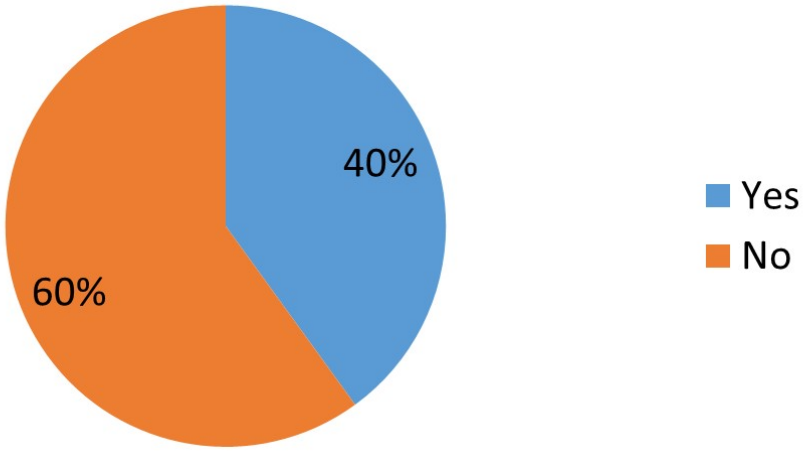

Figure 3. shows distribution of respondents according to regularity of meals n=60

Table 2. Shows symptoms that prevented patients from having regular meals n=60

Symptoms that prevented patients from having heavy meals	Frequency	Percentage(%)
Feels abdominal pain	20	33.3
Vomits	10	16.7
Gets heart burn	30	50
Total	**60**	**100**

Table 3. shows amount of alcohol consumed by the patients per day n=60

Number of Bottles	Frequency (F)	Percentage (%)
0	12	20
1-2	14	23.3
3-5	20	33.3
6-10	10‘	16.7
11 and above	4‘	6.7
Total	**6 0**	**100**

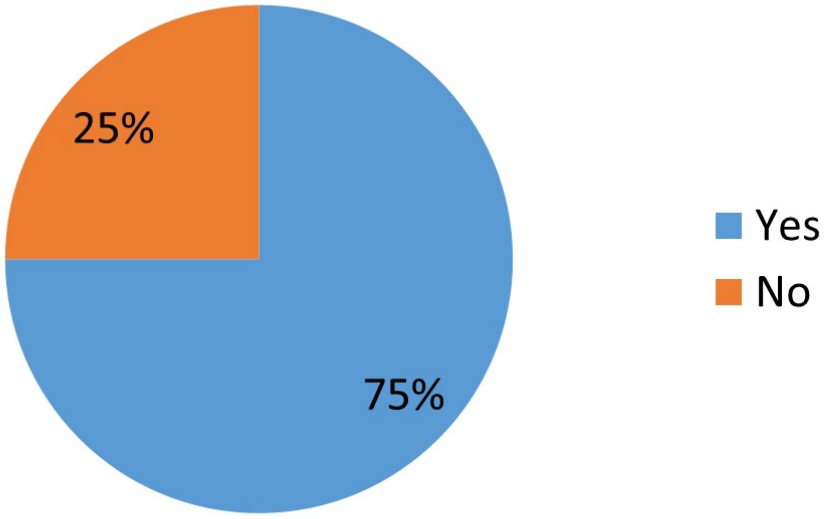

Figure 4. Shows the Percentage of alcohol consumption by the patient.

Table 4. Shows number of hours worked by patients in a day. n=60

Number of Hours	Frequency (F)	Percentage (%)
3-4	2	3.3
5-6	8	13.3
7-10	15	25
11 And Above	35	58.3
Total	**6 0**	**100**

to homeostasis that excites an allostatic or adaptive response. Stress affects the function of the gastrointestinal tract either in short or long-term impacts. Thus, contributing to the formation of PUD.

From the research study, 75% of the respondents were cigarette smokers and this was in agreement with the research findings by Sang Pyo Lee (2017), which indicated cigarette smoking to be a risk factor for PUD regardless of the presence of symptoms. This could have been because cigarettes contain a component called tar that causes vessel constriction which limits blood circulation thus delaying wound healing.

Economic factors contributing to increased cases of pud among patients aged 18-70 years

The study findings revealed that most of the respondents were professionals (50%). This could have been because they were busy and could not get enough time for meals. This was in line with a research report by Ping-Yi Lin (2019) which showed a positive correlation between burnout and workload with the prevalence of PUD and participants with high burnout and high workload had the highest prevalence of PUD.

The study represents that most (10%) respondents were low-income earners. This is in agreement with research findings by Mechu Narayanan et al., (2018), which indicated that risk factors for acquiring Peptic ulcer disease included a lower socioeconomic status, unsanitary conditions, and crowding. The prevalence of H. pylori is higher in developing countries and more common in certain ethnicities

The findings of the study reported that Peptic ulcer disease was linked to excessive consumption

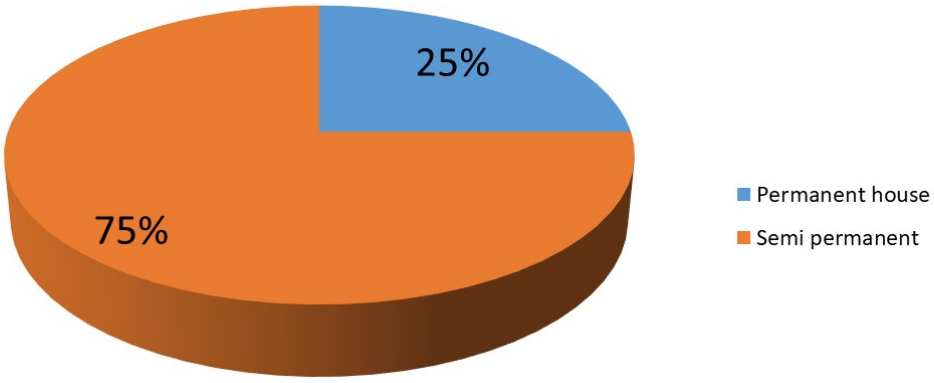

Figure 5. shows distribution according to the type of house.

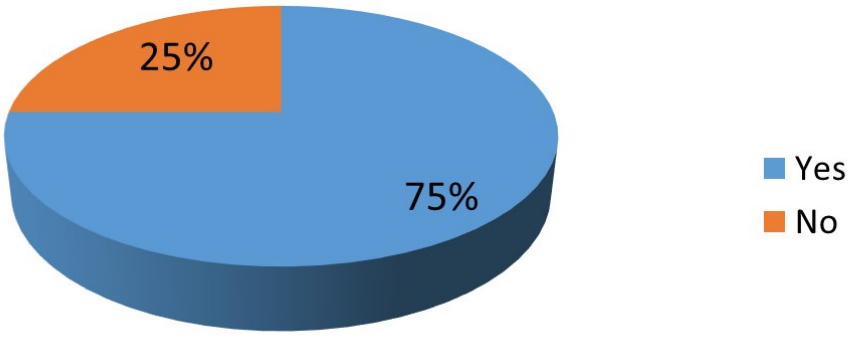

Figure 6. Shows relationship between previous other illness with PUD

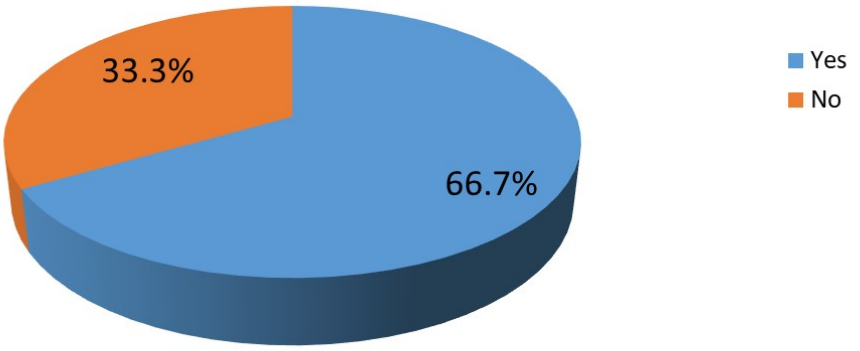

Figure 7. Shows respondents with a family history of peptic ulcer disease.

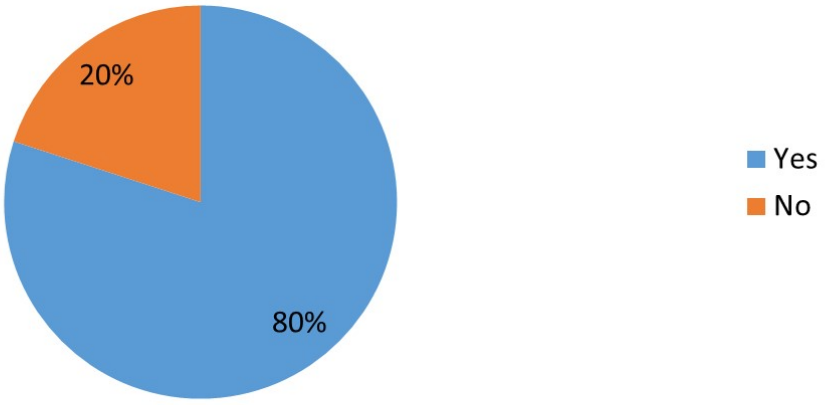

Figure 8. Shows number of patients with habits of taking NSAIDs versus those with no habit oftaking NSAIDs n=60

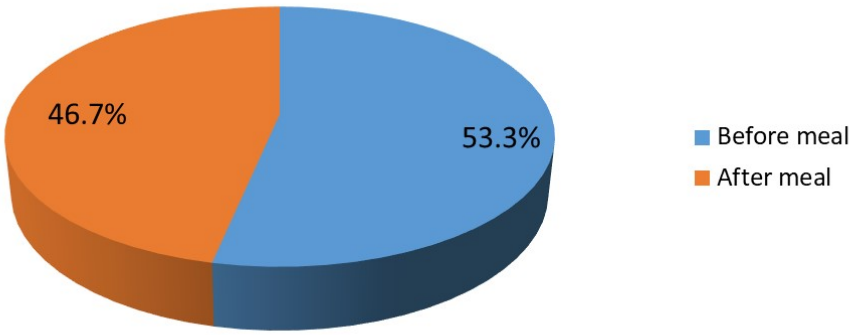

Figure 9. Shows percentage of patients who usually took NSAIDs before meal versus those who took NSAIDs after meal

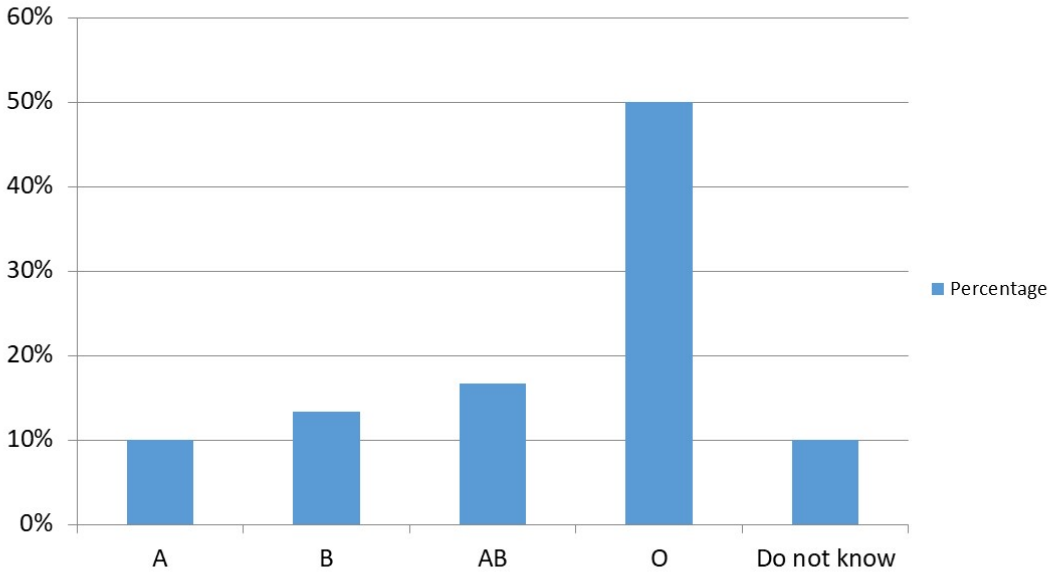

Figure 10. Shows percentage of patients with different blood group n=60

of alcohol where the majority of the patients (75%) had a history of alcohol consumption. This is in agreement with the study by Sang Pyo Lee (2017), which stated that heavy drinking was the most powerful risk factor for the presence of symptoms in patients with PUD, heavy drinking can induce symptoms, with or without PUD.

Medical factors contributing to the increased case of pud cases of peptic ulcer disease among patients aged 18-70 years

The findings of the study reported that out of 60 respondents who had a habit of taking NSAIDs,

53.3% took them before meals while 46.7% after a meal. This was in line with the research study by Antonio Gonzalez Perez (2014) which reported that Medications associated with developing uncomplicated PUD included the current use of acetylsalicylic acid (ASA), nonsteroidal anti-inflammatory drugs (NSAIDs).

The study findings indicated that the majority (75%) of the respondents had a positive history of previous other illnesses. This is a result of gastric mucosal injuries as a result of an imbalance between the defensive and the aggressive factors affecting the mucosa. This is in agreement with the study by Aghareed M. Asali et al., (2018) which revealed that conditions like Behcet disease, Zollinger Ellison syndrome, Crohn's disease, and liver cirrhosis are potential causes of PUD.

The study findings revealed that most (50%) had blood group O. This was in line with the study findings by A M Al-MarsoumiM.B.Ch.B; N S Jabbo F.R.C.S (2013) which indicated that blood group O has more H.Pylori receptors which is a most important factor for the development of peptic ulceration.

4 Conclusion

From the study findings, social-demographic factors contributing to peptic ulcer disease were older people of age between 41 and 70 years. These were mostly university graduates and secondary school graduates. It is also seen that most of the patients who had peptic ulcers were males this shows that males were more affected by the disease as compared to females. There was a strong association between patients who smoked tobacco and peptic ulcer disease.

The main economic factors contributing to PUD were alcohol consumption and low social-economic status. And NSAIDs drugs usage, having blood group O, and comorbidity with other

GIT conditions were the major medical factors contributing to PUD

Limitations of the study and possible solutions

Transport means was easy since the hospital was a bit far from the researcher's residence. The researcher was planned according to the resources available

Limited time since the researcher needed to do hospital practice during the same time. The researcher cooperated with the hospital staff members in requesting them to assist him in identifying patients to save time.

Recommendations:

The researcher recommends the hospital formulate and implement education programs that will target peptic ulcer patients in hospitals and the population in different parts of the country especially men to create awareness of the prevalence of peptic ulcers and the factors that are associated with peptic ulcers for the proper nutritional management of their condition and measures to undertake in the prevention of the disease.

There is a need for the government to include peptic ulcer disease among the public health concerns in the country to create awareness and to help the population prevent and manage the disease.

Designing and implementing an education program targeting to educate men on good lifestyle practices to prevent peptic ulcers.

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6 List of Abbreviations

ASA: Acetyl Salicyclic Acid

CDC: Centers for disease control

DU: Duodenal Ulcer

Pylori: Helicobacter Pylori

GERD: Gastroesophageal

U: Gastric ulcer

KSHS : Kampala School of Health Sciences

MoH: Ministry of Health

NGO: Non-GovernmentalOrganisation

NSAID: Non-Steroidal Anti-inflammatory Drugs

PUD: Peptic Ulcer Disease

PPI: Proton Pump Inhibitor

Definition of Key Terms

Alcoholism: This is a chronic disease that depending on alcohol

Hydrochloric acid: Is an acid that provides an optimum pH for normal

Morbidity: Is a diseased state, disability, or poor health due to any cause.

Mortality: Is the state of being susceptible to death

NSAIDs: These are drugs that inhibit the secretion of prostaglandins that is responsible for the protection of the mucosa

Occupation: This refers to the kind of work patients are involved in.

Personal lifestyle : This is a condition where a person lives and is exposed to get infections.

Peptic Ulcer Disease: This is the sore that develops on the gastrointestinal tract

Prevalence: Number of people in a specific population who have a certain disease at any given point of time.

Risk factors: These are factors that are exposed to the cause of the disease to an individual.

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