

## Prevalence of Peptic Ulcer in Patients Attending Kampala International University Teaching Hospital in Ishaka Bushenyi Municipality, Uganda.

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### ABSTRACT

The study assessed the prevalence of peptic ulcer disease among patients attending Kampala International University Teaching Hospital (KIUTH) and the objectives of study were to find out the gender distribution of peptic ulcer disease and to find out which age group is more affected by peptic ulcer disease among patients attending Kampala International University Teaching Hospital. It was a retrospective study in which quantitative methods were used to collect data from the patients and later described, compared and analyzed with different variables. It was discovered that Peptic ulcer disease (PUD) is highly prevalent among patients attending KIUTH (14.8%) and is highest among the middle age group of 31-40 years (32.7%), with females (66.7%) being more affected than males (33.3%). In conclusion, although some interventions have been put in place to manage PUD, its prevalence is still high and more interventions are required therefore the following were the recommendations made after the study, Community sensitization on causes and preventions of PUD should be enforced at hospitals and also better diagnostic techniques should be used for early diagnosis of PUD.

**Keywords:** Peptic ulcer diseases, Patients, Males, Females, Hospitals.

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### INTRODUCTION

Ulceration of the Gastric or Duodenal mucosa occurs in many individuals. The term peptic ulcer disease includes both the gastric and duodenal ulcers [1, 2, 3, 4, 5, 6, 7]. Among the mechanisms that may contribute to ulcer formation are diminished effectiveness of the gastric mucosal barriers, hyper secretion of acid, and infection by *Helicobacter pylori* bacteria. PUD is a common disorder that affects millions of individuals in the United States each year. Peptic ulcer disease has a major impact on our health care system by accounting for roughly 10% of medical costs for digestive diseases World health Organization [1, 8, 9, 10]. In the last two decades, major advances have been made in the understanding of the pathophysiology of peptic ulcer disease, particularly regarding the role of *Helicobacter pylori* and non-steroidal anti-inflammatory drugs (NSAIDs). This has led to important changes in diagnostic and treatment strategies, with potential for improving the clinical outcome and for decreasing health care costs [2, 11, 12, 13]. The geographical distribution of a disease may provide valuable clues with regard to its aetiology [14, 15, 16]. Likewise any

historical changes in prevalence, associated with changes in the mode of living, may give additional information [17,18]. The worldwide ulcer prevalence differs, with duodenal ulcers dominating in Western populations and gastric ulcers being more frequent in Asia, especially in Japan [3, 19, 20, 21, 22, 23]. Although the incidence of peptic ulcer disease in Western countries has declined over the past 100 years, around 1 in 10 Americans are still affected [4]. The annual financial burden of peptic ulcer disease in the US, including direct and indirect costs, is estimated at US\$3.4 billion [5, 24, 25, 26]. Since peptic ulcer disease is still common, and peaks in the elderly, it is expected that its impact on human health and health economics will remain an important issue in the future. Tovey and Tunstall, [6] have shown that there is a definite geographical pattern to the distribution of duodenal ulcer in sub-Sahara Africa, with a high incidence being reported in the Nile/Congo watershed and coastal regions of West Africa. High incidence rates of duodenal ulcer have also been reported in a number of major cities of Africa [7] (Nairobi, and Mombasa) [6]. In a recent

study by [8] 26% of patients with dyspepsia had DU, and of these *H. pylori* was present in 90%. Gastric ulcer is uncommon in Africa, occurring 6-30 times less commonly than DU [6]. In developed nations, the ratio of DU: GU is between 3:1 and 4:1. In Africa, a wide range of DU: GU

ratios has been reported varying from 3:1 to 15-20:1 [9]. A retrospective endoscopic review of dyspeptic patients from 12 African countries found that 7% had GU, and that *H. pylori* was present in 75% of these patients [8,27,28,29].

### Statement of Problem

In Africa, the highest prevalence was reported to be in the great lakes region, [10], where duodenal ulcer surgery forms the major part of all abdominal surgery. The area includes Rwanda and Burundi, eastern DRC around Lake Kivu, extreme western Tanzania adjacent to Burundi, and south-western Uganda [11], where Bushenyi district, Kampala International University teaching Hospital (KIUTH) in particular are located. In Uganda, PUD prevalence is estimated to range between 12% and 25% [12]. PUD is common in developing countries in general and Uganda in particular [13]. There is a higher prevalence of *Helicobacter pylori* infection [14]. There are many difficult problems to overcome in trying to establish the

prevalence of a disease with a low mortality such as PUD. These problems are considerable in developed countries and much greater in developing countries. Despite the scarcity of recent accurate data on prevalence and the reported increase in PUD cases in Uganda, [14] many health facilities including hospitals are without x-ray facilities. Surgical statistics can be selective and misleading. As a result, very little has been done to document the prevalence of PUD in various populations including the predictors for susceptibility. There this study on prevalence of peptic ulcer disease among patients attending KIUTH will bridge the existing information gap.

### Aim

To establish the prevalence of peptic ulcer disease among patients attending

of Kampala International University Teaching Hospital.

### Specific objectives

This includes the following;

- To find out the gender distribution of peptic ulcer disease among patients attending Kampala International University Teaching Hospital.

- To find out which age group is more affected by peptic ulcer disease among patients attending of Kampala International University Teaching Hospital.

### Research questions

- What is the gender distribution of peptic ulcer disease among patients attending Kampala International University Teaching Hospital?

- Which age group is most affected by peptic ulcer disease among patients attending of Kampala International University Teaching Hospital?

### Justification of Study

This study was designed to determine the prevalence of PUD among patients of KIUTH so that the prevalence & predictors are better documented in the study

population. This study is therefore expected to contribute to the building of the much needed data on prevalence of PUD.

## METHODOLOGY

### Study Design

A retrospective study was carried out to determine the prevalence of peptic ulcer disease among patients attending KIUTH. Quantitative methods will be used to

collect data from the patients and later described, compared and analyze different variables.

### Area of Study

Kampala International University's Western Campus [KIU-WC] is situated on about 70 acres of land at Ishaka town in Bushenyi District, along Mbarara -Kasese Road in Western Uganda. This spacious campus was opened in November 2004. The School Allied of Health Sciences [SAHS] is located at the KIU-WC. It offers a number of courses in bachelors, diplomas and certificates. The presence of the university has strongly led to the development of various businesses in Ishaka town, with the students and staff of the university comprising of the major clientele of these businesses. Businesses range from boutiques, restaurants, supermarkets, bars, and night clubs. Bushenyi District is one of the oldest districts in Uganda. It was created in 1974, curved out of Mbarara District Administration then. In 2009, it was split into five districts (4 new districts of Buhweju, Mitooma, Sheema and Rubirizi districts) with one new Municipal Council of Bushenyi- Ishaka. This has drastically reduced the size of Bushenyi District from five counties to one of Igara that includes the municipality. Bushenyi District lies between 0 0 N and 0 0 46' S of the equator

and 29 0 41' East and 30 0 30' East of Greenwich. Bushenyi District headquarters is located 340 kms from Kampala in the South Western part of Uganda. Bushenyi District is neighboring with the districts of Rubirizi in the North, Buhweju and Sheema in the North East, Sheema in the East, Mitooma in the South West and Sheema in the South. The district has a land area of 3'949 square kilometers and lying between 910 - 2,500 meters above sea level. The main physical features within the district include natural tropical forests of Karinzu and Imaramagambo covering an area of 784 km. Arable land covers 2,215 square kms, open water bodies cover 372 square kms and wetlands covering 183 square kms. Bushenyi District has a population of 241,500 people made up of 117,000 males and 124,000 according to the projected population estimates of 2010. The economy of the district depends mainly on agriculture. Agriculture is a source of food for the population, subsistence income for most families, and provides direct employment to 86.7% of the district population, as well as supplying raw materials for industries.

### Study Population

KIUTH serves a population of about 252000 people from districts of Ankole sub region and neighboring area but the

target population study was patients attending KIUTH from the month of May to June 2017.

### Sample Size

To get the sample size, **fisher's** statistical formula was used.

$$n = \frac{Z^2 PQ}{D^2}$$

Where n= desired sample size

Z= standard deviation at the desired degree of accuracy which was 1.96

$$Q = 1 - P$$

P= proportion of target population estimated to have the same characteristics, therefore p was taken to be 50% (constant) or 0.5

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INOSR APPLIED SCIENCES 10(1):45-54, 2023.

D= degree of error

$$N = (1.96)^2 \times 0.5 \times (1-0.5) / 0.05^2$$

$$= 3.8416 \times 0.5 \times (0.5) / 0.0025$$

$$= 0.9604 / 0.0025$$

$$= 384.16$$

$$n = 384.16$$

### Sampling Method

Simple random sampling method was used for this study where by one respondent was randomly selected and a process repeated up to when a desired sample size was obtained.

### Inclusion Criteria

Current patients attending KIUTH were the target for this study.

### Exclusion criteria

Patients who declined to consent for the study. Patients who were severely ill and needed urgent medical attention.

### Ethical considerations

- i. An introductory letter was sought from the SAHS administrator. only authorized people have access to them.
- ii. All results were treated with utmost confidentiality by ensuring that

### Data collection

A data was got from the KIUTH records within the months of April 2017 to May 2017.3.9 Data analysis and presentation. Data was analyzed using simple calculators, windows Excel-2007, and presented in form of Tables, graphs and charts.

### Study Limitations

The following limitations will be encountered during the study;

- Poor recording keeping hence limited data available.
- Some patients were not willing to give some important information during the study.

## RESULTS

### Socio-demographic characteristics

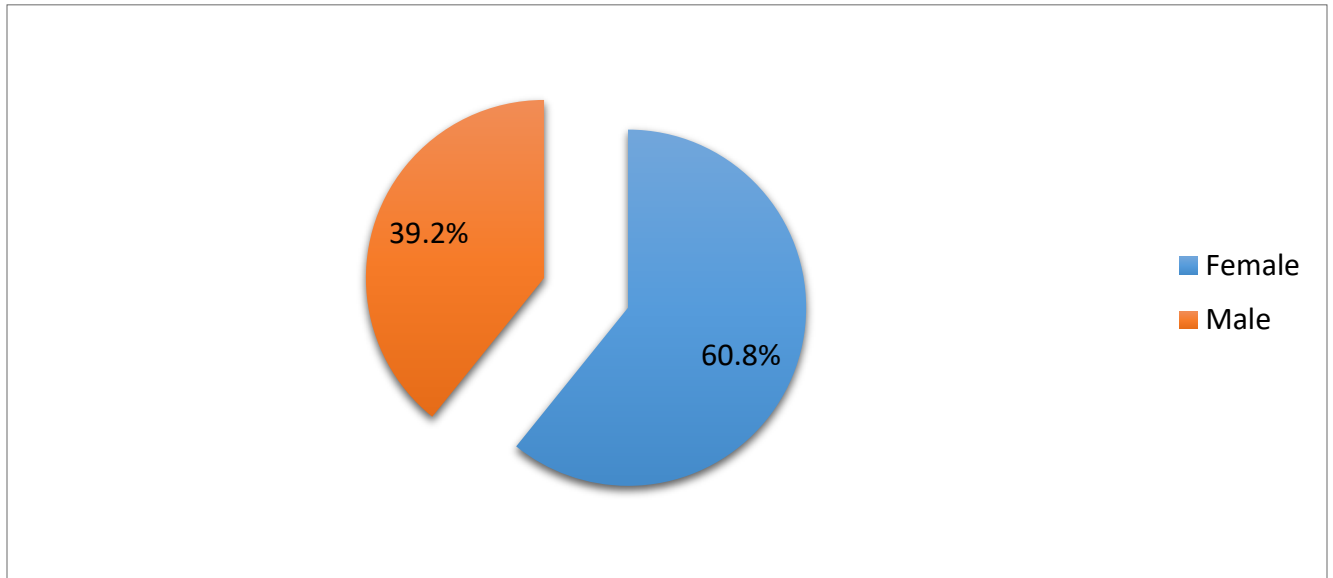
Of the total record reviewed 151 (39.2%) were males and females were 234 (60.8%). The patient's age ranged from 12 to 72 years with a median of 32.4 years. The peak incidence was in the 4<sup>th</sup> decade (31-40 years).

### Clinical presentation

The duration of symptoms ranged from 1 to 12 days with a mean duration of  $6.5 \pm 2.3$  days. The median was 5.8 days. 28.6% presented within twenty-four hours of onset of symptoms, 29.8% between 24 and 48 hours and 35.7% over 48 hours afterwards. The commonest presenting symptoms were sudden onset of severe epigastric pain in 97.6%, abdominal distention in 76.2% and vomiting in 36.9% PUD patients.

**Respondents' gender distribution**

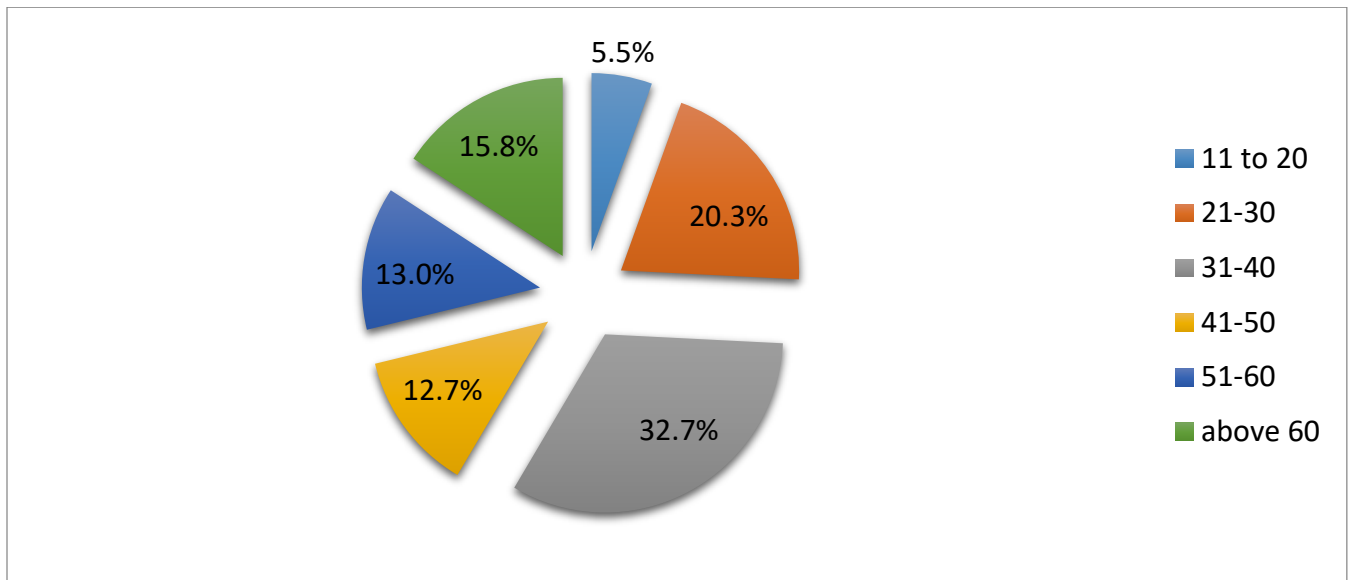
**Figure 1: Gender Distribution**



60.8% of the patients were female and 39.2% were males

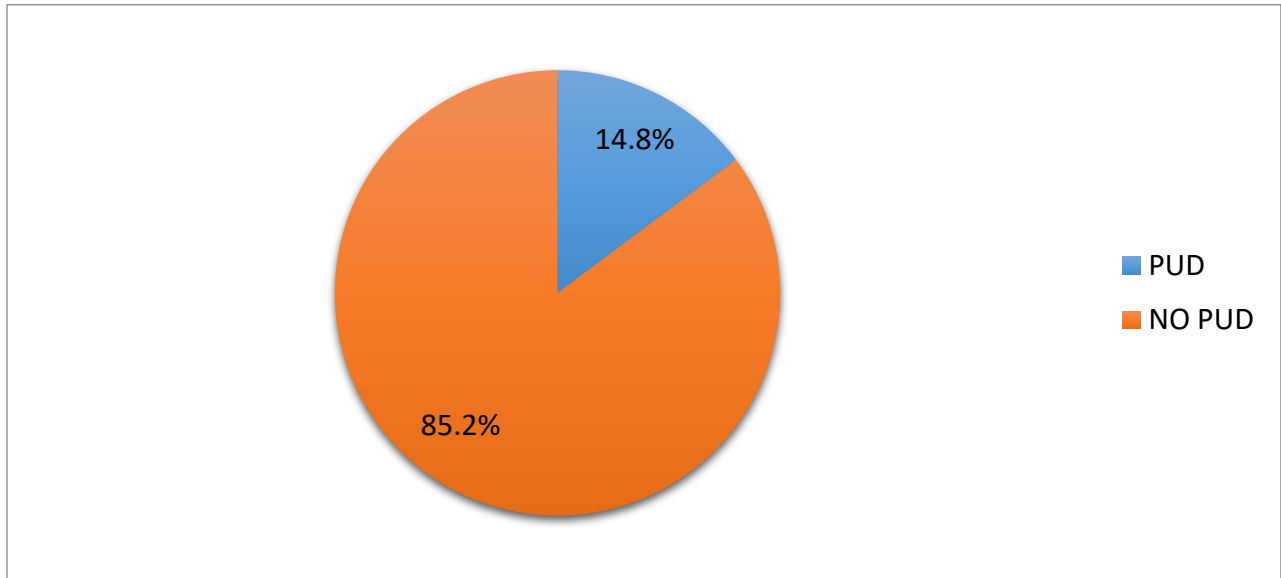
**Respondents' age distribution**

**Figure 2: Age Distribution of PUD**



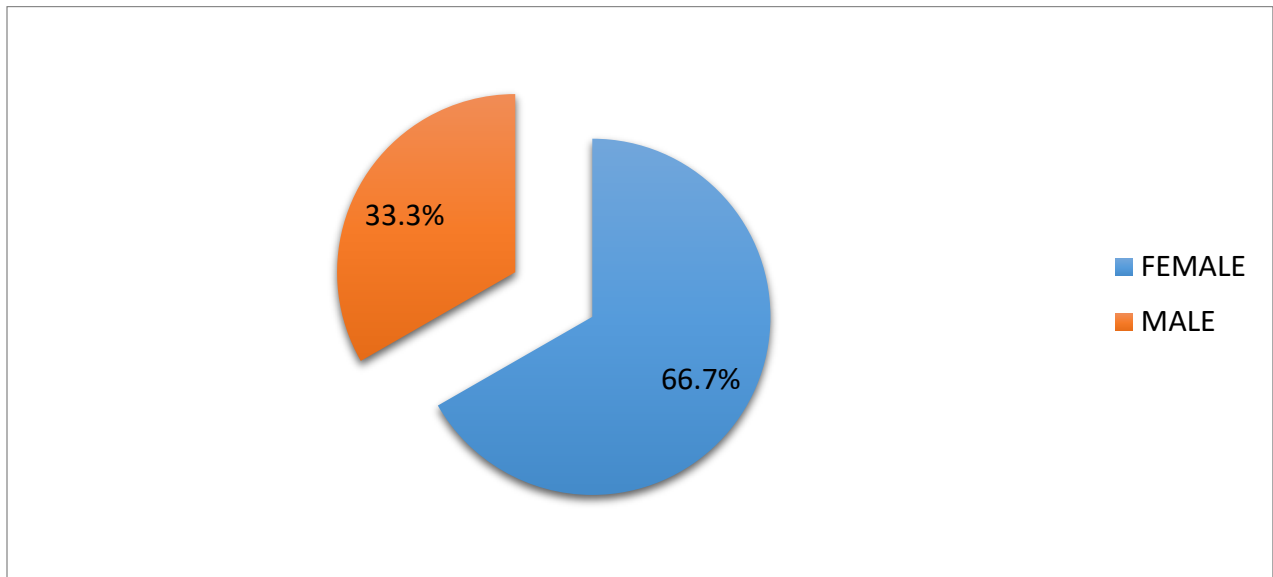
In this case, the majority of the patients were between the ages of 31-40 (32.7%) followed by 21-30 (20.3%) likewise above 60 (15.8%) in that order and the least being between the ages of 11-20(5.5%).

**Diagnosis of PUD**  
**Figure 3: PUD Diagnosis**



For this case, those who were found to have PUD were 14.8% and those without PUD were 85.2%.

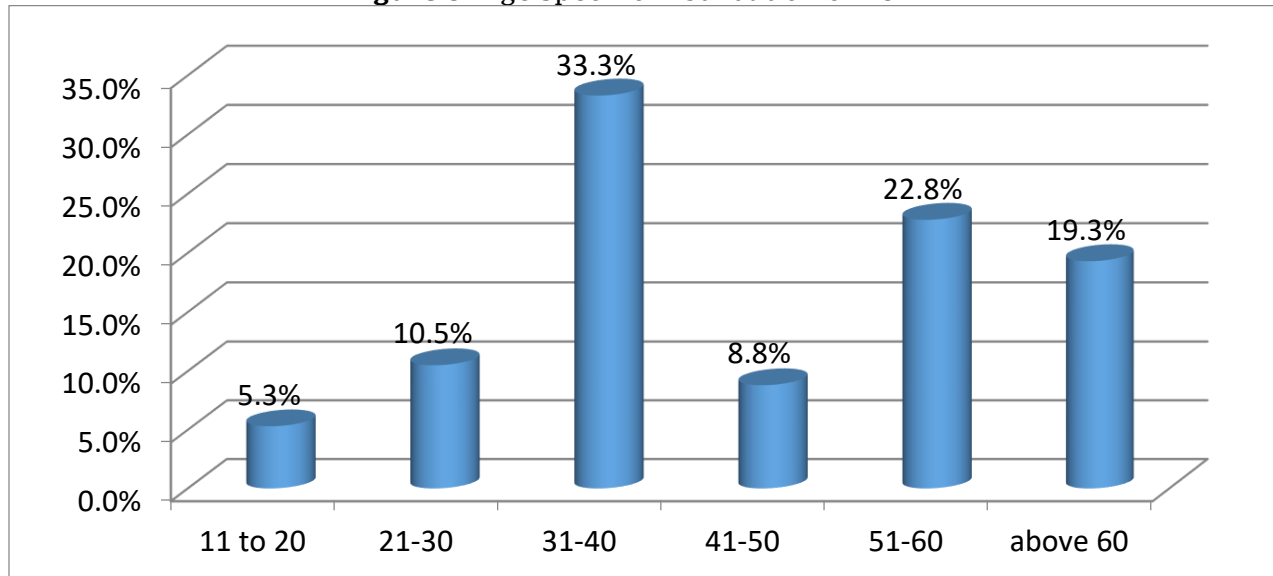
**PUD specific gender distribution**  
**Figure 4: Gender Specific Distribution of PUD (N=57)**



66.7% of PUD were found in females and 33.3% of PUD found in males.

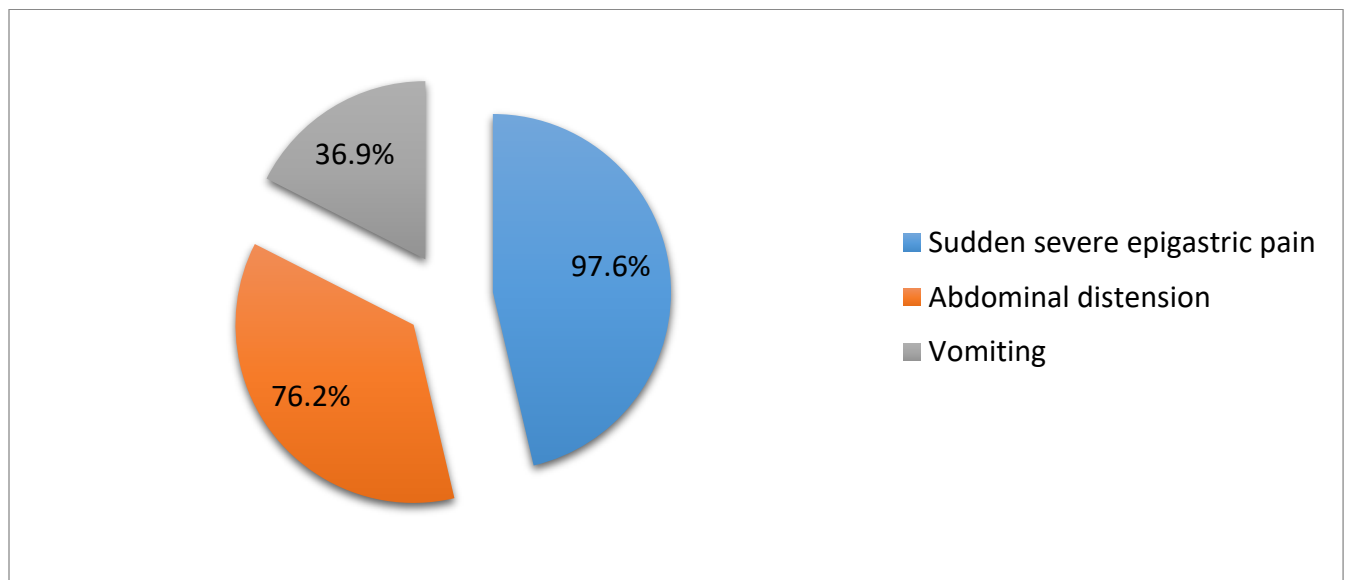
**PUD specific age distribution.**

**Figure 5: Age Specific Distribution of PUD**



This shows that the age specific distribution of PUD is higher in the age group between 31-40, followed by 51-60 in that order and the least affected age group being between 11-20.

**Figure 6: Main Presenting Symptoms**



The main presenting symptoms were sudden severe epigastric pain (97.6%) followed by abdominal distension (76.2%) and finally vomiting (36.9%).

**DISCUSSION**  
**Prevalence of PUD**

In this review, a total of 57 (14.8%) patients were found to have been diagnosed with

PUD. This figure is similar to what was reported by [15]. In their study, 15.1% of

the patients were reported to have been diagnosed with PUD. Mieny *et al*; [16] in South Africa reported a low incidence of PUD. They reported a 6.3 prevalence of PUD in their study population. These differences reflect differences in the rate of risk factors for perforated peptic ulcer

#### **PUD gender distribution**

In the present study, peptic ulcer disease were found to be most common in the fourth decade of life and tended to affect more females (66.7%) than males (33.3%). This finding is however not comparable with other studies in developing countries.

#### **PUD age distribution**

PUD predominance in this age group (31-40) could be attributed to excessive alcohol consumption and smoking which is common in the study environment. Alcohol consumption and smoking have been reported to be associated with increased risk for peptic ulcer. Alcohol, as a noxious agent causes gastric mucosal damage, stimulates acid secretion and increases serum gastrin levels [19] and smoking inhibits pancreatic bicarbonate secretion, resulting in increased acidity in the duodenal bulb. It also inhibits the healing of duodenal ulcers [2]. These study findings are in agreement with a study by [20] whereby in the United Kingdom the peak age incidence at present is between 45 and 55 years. the reports from East Africa give the peak age as a decade earlier. The mean peak age of six published reports from Uganda is 34 years and in 22 replies to their enquiries from the same area the mean peak age is 25. Many reports mention the occurrence of duodenal ulcer in teenagers, not infrequently associated with pyloric stenosis. The result indicates

#### **CONCLUSION**

PUD is highly prevalent among patients attending KIUTH (14.8%) and is highest among the middle age group of 31-40 years

disease from one country to another. The figures in our study may actually be an underestimate and the magnitude of the problem may not be apparent because of high number of patients excluded from this study.

For example, [17] reported a 59.2% prevalence of PUD among males and 40.8% in females. Similarly [18] in their study of PUD among a Senegalese rural population found a higher PUD prevalence among male (61.4%).

that the rate of *H. pylori* infection in patients with peptic ulcers ranges from 50%-80% and *H. pylori* infection, as a risk factor for PUD, appears to be more relevant in younger patients [21]. This is in sharp contrast to [22] in Nigeria who reported that 71% of cases had previous history of peptic ulcer disease. It has been reported that in many developing countries, the diagnosis of PUD is first made in many instances after perforation [23]. The present study confirms this observation because more than sixty percent of the patients with perforation were not diagnosed previously as cases of PUD and therefore were not on treatment. Patients with no previous diagnosis of peptic ulcer have a higher risk of PUD perforation than patients with a known history of ulcer disease. This may be because preventative measures are more likely to have been taken in patients with a known history of ulcer. Furthermore, these patients are perhaps more likely to seek treatment earlier.

(32.7%), with females (66.7%) being more affected than males (33.3%).

#### **RECOMMENDATIONS**

- i. Community sensitization on causes of PUD should be enforced at hospitals.
- ii. Better diagnostic techniques should be used for early diagnosis of PUD

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