

Individual factors associated with the occurrence of peptic ulcer disease among adults 18 years and above attending outpatient department Mukono general hospital, Mukono district. A cross-sectional study.

Page | 1

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ABSTRACT

Background

Peptic Ulcer Disease is a medical condition characterized by the formation of open sores or ulcers in the lining of the stomach, the upper part of the small intestine (duodenum), or occasionally in the lower part of the esophagus. The study aims to assess the Individual factors associated with the occurrence of peptic ulcer disease among adults 18 years and above attending the outpatient department in Mukono General Hospital, Mukono district.

Methodology

This study used a cross-sectional design to identify the individual factors associated with its occurrence among adults attending OPD in Mukono general. The study was conducted at Mukono General Hospital, which is located in Mukono district in the central region of Uganda on the Kampala – Jinjara road. The collected data was analyzed using statistical software such as Microsoft Excel.

Results

The majority of the respondents 80 (80%) were employed, 53(53%) participants responded that they had never smoked before, and 58(58%) of the respondents were found to be current alcohol consumers at the moment. 38(38%) of the respondents were found to rarely do physical exercises throughout the week.

Conclusion

Individual behavioral factors such as constant alcohol consumption, smoking, and lack of physical exercise had a positive correlation with the occurrence of PUD.

Recommendations

The Ministry of Health should Launch public awareness campaigns to educate the population about the risk factors, symptoms, and complications of PUD and these campaigns should emphasize the importance of early detection and treatment.

Keywords: Peptic ulcer, Outpatient department, Mukono General Hospital, Individual behavioral factors

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BACKGROUND

Peptic Ulcer disease is a medical condition characterized by the formation of open sores or ulcers in the lining of the stomach, the upper part of the small intestine (duodenum), or occasionally in the lower part of the esophagus. These ulcers develop when the protective lining of the digestive organs becomes damaged allowing stomach acid and digestive juices to erode the underlying tissue. Peptic ulcer disease (PUD) is a significant public health concern worldwide with a prevalence estimated at 45.8 million cases with an age-

standardized prevalence rate of 578.9 per 100,000 people (Lanas et al., 2017). It has potentially severe complications if left untreated. It is a common gastrointestinal disorder characterized by a break in the lining of the stomach or the first part of the small intestine caused by an imbalance between gastric acid secretion and the protective mechanisms of the gastric mucosa. The prevalence of PUD varies across regions, with a higher occurrence in developing countries, including those in Sub-Saharan Africa (Abdullahi et al., 2015; Mwebe et al., 2017). Several individual behavioral factors have been linked to the occurrence of PUD. Alcohol consumption is positively

associated with the risk of PUD. A study conducted in China by Li et al. (2019) found that heavy drinkers had a higher risk of PUD than moderate drinkers. Similarly, cigarette smoking increases the risk of PUD, possibly through the effect of nicotine on gastric acid secretion and motility. Alcohol consumption has also been found to disrupt the integrity of the gastric mucosal barrier, leading to increased susceptibility to gastric damage from acid and other factors. In a study conducted by Kagimu et al. (2017) among patients attending Mulago National Referral Hospital in Kampala, Uganda, alcohol consumption was identified as a significant risk factor for PUD. The study found that patients who consumed alcohol frequently had a higher risk of PUD compared to non-drinkers. Cigarette smoking is another individual behavioral factor that has been linked to the occurrence of PUD. The nicotine in cigarette smoke has been shown to increase gastric acid secretion, decrease bicarbonate secretion, and impair mucosal blood flow, all of which contribute to the development of PUD. A study conducted by Park et al. (2016) found that individuals who smoked cigarettes had a significantly higher risk of PUD compared to non-smokers. The use of NSAIDs, such as aspirin and ibuprofen, has also been found to increase the risk of PUD. NSAIDs inhibit the production of prostaglandins, which play a crucial role in protecting the gastric mucosa. This inhibition leads to decreased mucosal blood flow and increased susceptibility to damage from acid and other factors. The use of NSAIDs has also been found to increase the risk of PUD, particularly when taken at high doses or for prolonged periods. Watanabe et al. (2018) reported that NSAID use was significantly associated with an increased risk of PUD. A study conducted by Kalyesubula et al. (2015) among patients attending Mulago National Referral Hospital found that NSAID use was a significant risk factor for PUD. The study aims to assess the Individual factors associated with the occurrence of peptic ulcer disease among adults 18 years and above attending the outpatient department in Mukono General Hospital, Mukono district.

METHODOLOGY

Study Design and Rationale

This study used a cross-sectional design to identify the individual factors associated with its occurrence among adults attending OPD in Mukono General Hospital, Uganda. The cross-sectional design allows for the collection of data at a single point in time, making it suitable for assessing the prevalence of PUD and identifying associated factors.

Study Area

The study was conducted at Mukono General Hospital, which is located in Mukono district in the central region of

Uganda on the Kampala –Jinja road. The hospital offers a wide range of medical services, including outpatient care.

Study Population

The study population consisted of adults aged 18 years and above who attend the OPD of Mukono General Hospital for medical care. The participants were both male and female and drawn from different socio-economic backgrounds.

Sample Size Determination

The sample size of the study was determined using the Fisher's formula, 1998

$$n = (K^2 PQ) / L^2$$

Where;

n = the desired sample size

L = Permissible error in the estimate which is 10% (0.1)

K = 4 which is a constant

P = 50% which equals to 0.5 (Estimated percentage of Adults attending OPD since the actual prevalence rate at the moment is not known)

$$n = \{4(0.5)(0.5)\} / (0.1^2)$$

$$n = 100$$

Therefore the sample size for the study was 100 people.

Sampling Technique

The study used systematic random sampling to select the participants. The sampling frame was generated by listing all the adults attending the outpatient department during the study period. The sampling interval was determined by dividing the sampling frame by the desired sample size. The first participant was selected randomly, and subsequent participants were selected systematically by selecting every nth person on the list.

Sampling Procedure

The study used systematic random sampling to select the participants. The study population was defined as all adults aged 18 years and above attending the outpatient department of Mukono General Hospital during the study period. The sampling frame was generated by obtaining a list of all the eligible adults who visited the hospital for outpatient care. A sampling interval of 5 was used to select every fifth adult from the list. The first participant was selected randomly using a random number

generator. Subsequent participants were selected systematically by selecting every fifth adult from the list until the desired sample size was reached.

Data Collection Method

Data was collected through face-to-face interviews using a structured questionnaire. The questionnaire was administered by trained research assistants, who explained the purpose of the study to the participants and obtain their consent before conducting the interviews.

Data Collection Tools

The data collection tool was a structured questionnaire consisting of closed-ended questions. The questionnaire was developed based on the study objectives and included questions on demographic characteristics, lifestyle factors, behavioral factors, and the presence of PUD. This was used to acquire quantitative information.

Data Collection Procedure

The data collection procedure involved the following steps:

- Recruit and train research assistants
- Obtain ethical clearance from the relevant authorities that is the medical director of Mukono General Hospital with an introductory letter from the Mild Institute of Health Sciences by the researcher. The Director will later introduce the researcher to the in-charge OPD and other medical personnel present,
- Approve the data collection tools
- Conduct a pilot study to test the tools and refine the questionnaire
- Obtain information from the participants
- Administer the questionnaire to the participants
- Collect the completed questionnaires

Study Variables

Dependent variable

Occurrence of PUD

Independent variables

demographic characteristics (age, sex, education, occupation), lifestyle factors (smoking, alcohol consumption, diet), and behavioral factors (stress, use of nonsteroidal anti-inflammatory drugs)

Quality Control

To ensure the quality of data, the research assistants had to undergo training on research ethics, data collection techniques, and the study objectives. A pilot study was conducted to test the questionnaire, and feedback was used to refine the instrument. The questionnaires were reviewed for completeness and consistency, and any missing or inconsistent data were clarified with the participants.

Data Analysis and Presentation

The collected data was analyzed using statistical software such as Microsoft Excel. Descriptive statistics such as frequencies and percentages were used to summarize the data. The results of the study were presented in tables and graphs. The tables provide a summary of the study variables, including the frequencies and percentages of each variable. The graphs are used to visually represent the relationship between the study variables and the occurrence of. A narrative report was prepared to summarize the findings and discuss the implications of the study. The study findings were disseminated to relevant stakeholders through publications. The results of the study were also shared with the management of Mukono General Hospital to inform the development of preventive measures and interventions aimed at reducing the occurrence of among adults attending the OPD.

Ethical Considerations

The study adhered to ethical guidelines for conducting research involving human subjects. Informed consent was obtained from all participants before their inclusion in the study. Participants were informed of the purpose of the study, the procedures to be followed, and the potential risks and benefits of participating in the study. Confidentiality and anonymity of participants were maintained throughout the study. The study protocol was reviewed and approved by the Institutional Review Board of Mukono General Hospital.

RESULTS

Socio-demographic factors associated with the occurrence of peptic Ulcer disease.

Table 1: Showing socio-demographic factors. (n=100)

Variable	Parameter	Frequency (N)	Percentage (%)
Age category in years	15-24	18	18
	25-34	28	28
	35 and above	54	54
Level of education	Informal	10	10
	Primary	15	15
	Secondary	50	50
	Tertiary	25	25
Occupation	Student	18	18
	Employed	80	80
	Unemployed	2	2
	Retired	00	00
Monthly Income	Shs(100,000-200,000)	50	50
	Shs(200,000-500,000)	27	27
	Shs(500,000- 1,000,000)	3	3
	Others	20	20
Marital status	Single	41	41
	Married	56	56
	Divorced	00	00
	Widowed	3	3
Gender	Male	45	45
	Female	55	55
Resident of Mukono	Yes	100	100
	No	0	0
Distance residence to Mukono General Hospital	from Less than 5 kilometers	78	78
	5-10 kilometers	22	22
	More than 10 kilometers	0	0
The primary mode of transportation to the hospital	of Personal vehicle	4	4
	Public Transport	59	59
	Walking/biking	37	37

Table 1, Out of the 100 participants, 18(18%) were aged between 15 and 24 years and 54(54%) were aged 35 years and above. 25(25%) were at tertiary level of education, 50(50%) were at secondary level of education and 10(10%) were having an informal education level. 18(18%) were students, the employed participants were 80 (80%), unemployed were 2(2%) and there was no retired participant(0%), 50(50%) of the participants earned between (100,000-200,000) shillings, 27(27%) earned between (200,000-500,000) shillings whereas 20(20%) were not earning close to the selected wage brackets, 41(41)% of the participants were single,

56(56%) of the participants were married, From the study 55(55%) were Female participants whereas the remaining 45(45%) were Male participants. Also from the study, all the respondents (100%) were residents of Mukono district, 78(78%) of the respondents reported that they were staying within 5 kilometers from their homesteads to the hospital and no respondent was living more than 10 kilometers away from the hospital. The majority of the respondents that is 59(59%) used public transport as the primary mode of transport to the hospital and the minority of the respondents 4(4%) used their vehicles to reach the hospital.

Individual factors associated with the occurrence of peptic ulcer disease

Table 2: Individual Factors

Variable	Yes, currently	Yes, in the past but not now	No, never smoked	
Smoking	30 (30%)	17 (17%)	53 (53%)	
Alcohol consumption	Yes 58 (58%)	No 42 (42%)		
How often do you exercise in a week?	Rarely or never 38 (38%)	1-2 times a week 33 (33%)	3-5 times a week 23 (23%)	More than 5 times a week 6 (6%)
Do you follow a balanced diet regularly	Yes 52 (52%)	No 48 (48%)		

Table 2, out of the 100 participants, 53(53%) participants responded that they had never smoked before and 30 (30%) of the respondents were current smokers. 58(58%) of the respondents were found to be current alcohol consumers at the moment and 42 (42%) claimed that they were not alcohol consumers. 38(38%) of the respondents were found to rarely do

physical exercises throughout the week, 33(33%) claimed to at least do exercises one or two times a week, 23(23%) of the respondents were able to do exercises for at least three to five times in a week and only 6(6%) respondents can do more than five times in a week.

DISCUSSION

Individual behavioral factors associated with the occurrence of Peptic Ulcer disease

The study revealed that 58% of the respondents were consuming alcohol and 42% were not alcohol consumers. This study finding shows that adults who constantly consume alcohol are at a greater risk of getting Peptic Ulcer Disease. This is linked to the fact that alcohol is known to irritate the stomach lining which in turn leads to inflammation and weakening of the protective mucus layer that lines the stomach making it more susceptible to damage by stomach acid. This study is in line with a study conducted by Kagimu et al. (2017) among patients attending the Referral Hospital in Kampala, Uganda, alcohol consumption was identified as a significant risk for PUD, and the study found that patients who consumed alcohol frequently had a higher risk of PUD compared to non-drinkers. The study also revealed that 30% of respondents were current smokers, 17% were former smokers in the recent past and the majority of the

respondents 53% reported that they had never smoked at all. This implies that the adults who were active smokers at the moment were most likely to be predisposed to Peptic ulcer Disease, unlike the nonsmokers at that time. This is attributable to the fact that nicotine in cigarette smoke has been shown to increase gastric acid secretion, decrease bicarbonate secretion, and impair mucosal blood flow, all of which contribute to the development of PUD. The study agrees with another study made in Uganda study by Kagimu et al. (2017) which showed that active cigarette smoking was a significant risk factor for PUD among patients attending Mulago National Referral Hospital; the study found that the risk of PUD increased with the duration and amount of smoking. Similarly, a study conducted by Park et al. (2017) found that individuals who smoked cigarettes had a significantly higher risk of PUD compared to non-smokers.

GENERALIZABILITY

The study was conducted in one hospital in Mukono district, which was not representative of the entire population of adults in Uganda.

CONCLUSION

Individual behavioral factors such as constant alcohol consumption, smoking, and lack of physical exercise had a positive correlation with the occurrence of PUD.

STUDY LIMITATIONS

- The study relied on self-reported data, which may be subject to recall bias and social desirability bias.
- The cross-sectional study design did not allow for causal inferences to be made.
- The study only examined a limited set of risk factors associated with PUD and may not capture other potential factors that could be associated with the occurrence of PUD.

RECOMMENDATIONS

The Ministry of Health should Launch public awareness campaigns to educate the population about the risk factors, symptoms, and complications of PUD and these campaigns should emphasize the importance of early detection and treatment.

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LIST OF ABBREVIATIONS

NSAIDs: Nonsteroid anti-inflammatory Drugs

OPD: Outpatient Department

PUD: Peptic Ulcer disease

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The study was not funded.

CONFLICT OF INTEREST

The author did not declare any conflict of interest.

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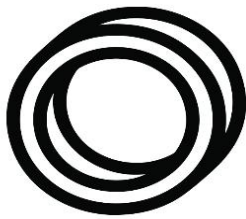
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Page | 7

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