European Journal of
Health Sciences
(EJHS)

Prevalence, Pattern and Outcome of Gastroenterological Diseases in Primary Care Clinic of a Tertiary Hospital in Southwestern Nigeria

Solomon Olusoji Abidemi, Solomon Oluremi Olayinka, Ajayi Akande Oladimeji

AJP

European Journal of Health Sciences
ISSN 2520-4645 (online)
Vol.9, Issue 1, No 1, pp 23 - 31, 2023

www.ajpojournals.org

Prevalence, Pattern and Outcome of Gastroenterological Diseases in Primary Care Clinic of a Tertiary Hospital in Southwestern Nigeria

Solomon Olusoji Abidemi[1*], Solomon Oluremi Olayinka[2], Ajayi Akande Oladimeji[3]

[1]Family Medicine Department, College of Medicine, Ekiti State University, Ado Ekiti, Nigeria

[2]Community Medicine Department, College of Medicine, Ekiti State University, Ado Ekiti, Nigeria

[3]Medicine Department, College of Medicine, Ekiti State University, Ado Ekiti, Nigeria

Article history

Submitted 10.04.2023 Revised Version Received 28.04.2023 Accepted 11.04.2023

Abstract

Purpose: Gastroenterological diseases have been documented to be common in primary care practice especially with data from western world. This study seeks to investigate its true burden and outcomes in primary care setting in this environment.

Materials and Methods: It was a 10-year retrospective cross-sectional study carried out at the general outpatient clinic of the family medicine department of Ekiti state university teaching hospital which is part of a larger survey and made use of secondary data.

Findings: The study observed the prevalence of gastroenterological diseases in primary care to be 3.9% with majority of disorders being peptic ulcer disease and dyspepsia, 54.8% and 25.0% respectively. Gastroenterological diseases were poorly investigated in this study 12.2% with Abdominal Ultrasound been the most requested 63.6% and endoscopy request was 6.5%. The majority of those that presented with gastroenterological diseases were treated and discharged home, peptic ulcer diseases 100% and dyspepsia above 90%.

Conclusion: This study showed that the prevalence of gastroenterological disorders in the primary care practice in our environment may not be as high as it's been documented for other regions of the world.

Unique Contribution to Theory, Practice and Policy: This study recommends further study into the prevalence of gastroenterological disorders using standardized definitions. Primary care doctors are encouraged to be abreast of the frequently changing diagnostic criteria in gastroenterology

Key Words: *Gastroenterological Diseases, Primary Care, Prevalence, Pattern, Outcome*

INTRODUCTION

Gastroenterological diseases are common in primary care practice, contributing significantly to morbidity, mortality, and cost of care burdens. Primary care physicians play significant role in timely detection, management, and where necessary referral of cases to Gastroenterologists.[1, 2, 3] Hence, accurate and timely diagnosis of gastrointestinal disorders in primary care clinics will mitigate the progression of most of the diseases to a more debilitating one.

In this setting, patients present with different types, of signs and symptoms, the primary care physicians are therefore expected to have vast knowledge and experience to properly diagnose, manage and when necessary, refer the patients right from their first contact.[4]

Previous studies have reported various prevalence of gastroenterological diseases in primary care in develop countries; 10% in UK[2], while it accounts for 13% of total mortality and 12% of hospital admissions in Netherlands.[3] Most studies in developing countries were focused on gastrointestinal diseases which is a bigger spectrum encompassing gastroenterological diseases, infectious diseases like gastroenteritis, enteric fever, and surgical conditions like appendicitis, intestinal obstruction, and the likes.[1,3]

Due to paucity of literature on gastroenterological disorders in our environment, this study was aimed to determine the burden of gastroenterological disorders in primary care in our considering the burden of gastroenterological disorders in other climes. It is important to understand the approach of primary care physicians to these cases and its outcomes in primary care setting in our environment.

MATERIALS AND METHODS

The study was carried out at the general outpatient clinic which is the primary care clinic and a unit of the family medicine department of Ekiti state university teaching hospital (EKSUTH), Ado-Ekiti. Ado-Ekiti is the capital of Ekiti State in Southwestern Nigeria. The Clinic runs on outpatient bases from 8 am to 8 pm daily, every weekday and 8 am to 2 pm, on weekends. Consultant family physicians, and resident doctors in family medicine attend to patients. Patients aged 14 years to geriatrics were seen and treated, with referrals made to specialist's clinics and admission to the emergency department when necessary. All patients that attend this clinic were uninsured and pay out of their pockets.

The study was a retrospective cross-sectional study which is part of a larger survey and made use of secondary data. The study population consisted of 16,030 attendees of the general outpatient the Clinic between January 2009 and December 2018. All the records which were hard copies, of newly presented patients seen during this period with gastroenterological conditions were retrieved to extract their sociodemographic characteristics, diagnosis, investigations ordered and outcome of clinical consultation, by a trained Research assistant.

Definition of Variable

Outcome: This is determined by whether the patient was treated and discharged, referred, or admitted. Those treated and discharged from the Clinic were considered to have the most favourable outcome while those admitted were considered as having the most un-favourable outcome.

In this study PUD means Peptic ulcer diseases, GERD, Gastro-oesophageal reflux diseases, CLD, Chronic liver diseases, UGIB, Upper gastrointestinal bleeding.

Data Analysis

The data was collated into a predesigned data collection sheet and later entered and analysed with the Statistical Package for Social Sciences (SPSS) version 26. Descriptive analysis of the socio-demographic characteristics, diagnosis, requested laboratory investigations and outcomes of clinical consultation (health outcome) were presented using figures, tables, and percentages.

FINDINGS

During the period under survey, the total number of patients seen in the primary care clinic was 16,030 and out of these 629 presented with gastroenterological diseases during the period, given a prevalence of 3.9%.

Most of the respondents, 555 (88.2%) were between the ages of 20 - 60 years and 38 (6.0%) were above 60 years. The females were 361 (57.4%), Yorubas were 570 (90.6%), while the married were 460 (73.1%) and the singles were 169 (26.9%). (Table 1)

More than half of them 345 (54.8%) were diagnosed with PUD, 157 (25.0%) had dyspepsia and 37 (5.9%) had GERD. The least of them all was liver cancer with just 1 (0.2%) within the duration studied. Table 2

Essentially it was 77(12.2%) of all gastroenterological patients that presented over the study period that were investigated with the abdominal ultrasound 49 (63.6%) being the most requested, followed by HbsAg 21 (27.3%). Table 3

Most of the respondents were treated and discharged 579 (92.1%) as outpatient patients while only 27 (4.3%) were admitted. Table 4

All those diagnosed as having dyspepsia 155 (100%) were all treated by the primary care physician in the facility as outpatients and discharged home. Those diagnosed with gastritis, 47 (87.0%) were discharged from the outpatient, 2 (3.7%) were admitted while 5 (9.3%) were referred to specialist gastroenterology. (Table 5)

Among those diagnosed with dyspepsia, 146 (94.2%) of them were not investigated at all, 7 (4.5%) were asked to do abdominal ultrasound while 2 (1.3%) were sent for endoscopy. Twenty (69.0%) of those diagnosed with hepatitis were asked to do HbsAg and 3 (10.3%) were asked to do abdominal ultrasound. (Table 6)

Table 1: Sociodemographic Characteristics of the Respondents.

Variables	Frequency (n=629)	Percentage
Age		
< 20	36	5.7
20 - 60	555	88.2
> 60	38	6.0
Gender		
Male	268	42.6
Female	361	57.4
Religion		
Christianity	604	96.0
Islam	25	4.0
Tribe		
Yoruba	570	90.6
Igbo	24	3.8
Hausa	30	4.8
Others	5	0.8
Place of Residence		
Urban	574	91.3
Rural	55	8.7
Education		
Primary	32	5.1
Secondary	249	23.7
Tertiary	448	71.2
Marital Status		
Married	460	73.1
Single	169	26.9
Occupation		
Student	148	23.5
Civil Servsnt	264	42.0
Business	106	16.9
Other	111	17.6

Table 2: Pattern of Gastroenterological Diseases among the Respondents

Variable	Frequency	Percentage
Peptic Ulcer Disease (PUD)	345	54.8
Dyspepsia	157	25.0
Gastritis	54	8.6
Gastro-esophageal Reflux Disease (GERD)	37	5.9
Hepatitis B	29	4.6
Chronic Liver Disease (CLD)	3	0.5
Upper GI Bleeding (UGIB)	3	0.5
Liver Cancer	1	0.2
Total	**629**	**100**

Table 3: Pattern of Investigations Requested

Variable	Frequency	Percentages
Abd USS	49	63.6
Endoscopy	5	6.5
HbsAg	21	27.3
LFT	2	2.6
Total	**77**	**100**

Table 4: Outcome on Respondents after Consultation

Variables	Frequency	Percentage
Treated as Outpatient	579	92.1
Admitted	27	4.3
Referred to another Specialty	23	3.7

Table 5: Outcome of the Respondents Based on the Diagnosis

Variables	Treated & Discharge (%)	Admitted (%)	Referred (%)
PUD	311 (90.1)	21 (6.1)	13 (3.8)
Dyspepsia	155 (100)	0	0
Gastritis	47 (87.0)	2 (3.7)	5 (9.3)
GERD	32 (86.5)	3 (8.1)	2 (5.4)
Hepatitis	26 (89.7)	0	3 (10.3)
CLD	3 (100)	0	0
UGIB	2 (66.7)	1 (33.3)	0
Liver Cancer	1 (100)	0	0

Table 6: Investigation Requested Based on the Diagnosis

GI Disease	ABDUSS	Endoscopy	HbsAg	LFT	None
PUD	29 (8.4)	2 (0.6)	1 (0.3)	0	313 (90.7)
Dyspepsia	7 (4.5)	2 (1.3)	0	0	146 (94.2)
Gastritis	4 (7.4)	0	0	0	50 (92.6)
GERD	2 (5.4)	0	0	0	35 (94.6)
Hepatitis	3 (10.3)	0	20 (69.0)	2 (6.9)	4 (13.8)
CLD	3 (100)	0	0	0	0
UGIB	0	1 (33.3)	0	0	2 (66.7)
Liver Cancer	1 (100)	0	0	0	0

Discussion

The10 year prevalence of gastroenterological consultations in this study was observed to be 3.9%, this is lower than the finding of 10% in US[1] and in a 20-year prevalence of in the UK's general practice.[5] The finding in this study is smaller compared to that from UK, this might be because of duration of these study and sociocultural differences in the study populations, while this study covers a 10 year period, the UK study was over a 20 year period. Everhart et al, observed a prevalence of 35% of all digestive diseases presented in ambulatory care where mainly primary care services are provided the difference in this study compared to our index study could be because the US study involved all digestive diseases which comprised of all gastrointestinal diseases whether surgical or medical.[6] Similarly a study in Northern Nigeria, among persons admitted into the emergency unit of Ahmadu Bello University Teaching Hospital over a period of 4-years, also reported higher prevalence of 20.5% of gastrointestinal

diseases or disorders (GIDD)[7]. This study apart from being carried out in emergency unit where acute cases will mostly presents involved all gastrointestinal diseases.

This study showed that most gastroenterological presentations in the primary care are peptic ulcer disease 54.8%, followed by dyspepsia, gastritis, and GERD, 25.0%, 8.6% and 5.9% respectively which are mostly acid related conditions. This finding is comparable to the observation in a study in same region as the study area by Oghenetega et al, in Akure South where prevalence of PUD and GERD were 55% and 5% respectively while the prevalence of dyspepsia in the same study was 11% even though these were subset of what was called by the researchers as "lower GIDD and upper GIDD". The variation in the definitions of dyspepsia used by attending physicians could be responsible for the difference in the prevalence of dyspepsia, even though the study areas appear to share similar sociocultural values.[8]

Similarly, in the study by Aderoju et al. in Saudi Arabia to determine the frequencies of gastrointestinal diseases admissions, after admission for acute appendicitis and gastrointestinal infections, hepatitis and its sequelae was the next most common, 20.7%, followed by peptic ulcer disease 19%. The differences in the prevalence observed could be due to the differences in the populations studied while our study considered those that attended the primary care outpatient department with only gastroenterological conditions, this study observed those that were admitted for all gastrointestinal diseases including surgical and infectious cases. Similarly geographical variations with its consequent effect on predisposing factors for most of the gastroenterological conditions could account for some of the differences.[3]

In this study 29 cases were recorded as diagnosed to have Hepatitis B over the 10 years survey period, this finding is low when compared to 195 diagnosed over a six-year sentinel survey of 500 general practitioners in France.[9] The higher value obtained in this France study could be the wide practice area coverage compared to one practice area in the index study. The pooled prevalence of Hepatitis B infection in a systematic review by Ajuwon et al. for Southwestern Nigeria, the region where the index study was carried out, was 9.7%, and it is far higher than the prevalence of 4.6% in this study.[10] This could be because the systematic review involved about 16 different study populations while the index study was about one population group.

The prevalence of chronic liver disease and liver cancer in this study was 0.5% and 0.2% respectively. This is far much lower that observed prevalence in a study of medical admissions over a 5 year period with prevalence of 3.5% and 1.6% respectively.[11] Similarly, Oluwagbenga et al. in a 5 year review patients that presented at the gastroenterology clinic of a tertiary hospital in the same environ as this study, observed a prevalence of 5.2% for liver cirrhosis and 4.1% for hepatocellular carcinoma.[12] These could because the study populations being those pooled, that were admitted because of their acute presentations at the emergency department or those presented and eventually may be admitted after their referral from primary care to the gastroenterology clinic.

In this study, 3(0.5%) cases of upper gastrointestinal bleeding and 1 (0.2%) of liver cancer were reported. This is expectedly lower than 11.8% and 2.2% observed by Oluwagbenga et al in their review of gastrointestinal medical emergency conditions in a tertiary hospital given the fact that upper gastrointestinal bleeding will present mostly in acute phase.[13]

This study showed poor investigation of gastroenterological presentations in the study setting with only 12.2% of 629 cases investigated. This low level of investigations carried out might be based on empiric antisecretory drug therapy approach of most dyspeptics and peptic ulcer cases, where all and above 90% were treated and discharged respectively.[14,15] This being most common approach, it becomes important to evaluate in future study the thoroughness of evaluation for alarm symptoms and other dyspepsia like conditions without endoscopy .[14]

Abdominal ultrasound was ordered for 49 (7.8%) of those with gastroenterological disorders making up 63.6% of investigations requested. The prevalence of abdominal ultrasound in this study is low when the guideline suggested that Ultrasound scan (US) be done for every endoscopy negative finding patient, it would have naturally followed to do US given the low request for endoscopy.[16]

Endoscopy was requested for 5 (<1%) of the population with gastroenterological disorders, this contrasts with about 79% endoscopy rate by gastroenterologists evaluating GERD.[17] This difference could be because ready availability of endoscope, which was poorly available in this study environment as it could not boast about up to 4 upper GI endoscopes that were not always functional around the study period.[18] Even though Harrod et al in their review had observed that the primary care physician were most likely to refer patients for endoscopy in the United states[19]

Hepatitis B Surface Antigen (HbsAg) screening amongst those with gastroenterological disorders was ordered for 21 (3.3%) making up 27.3% of the investigations requested. This is comparable to a prevalence that range from 0.1-5.1% of screening obtained among patients that presented at the general outpatient clinic of Federal Teaching Hospital, Gombe over 15 years period, how be it, the population considered in this study are those only with gastroenterological disorders.[20]

Most patients with gastroenterological consultations in the study area during this period were treated as outpatients 579 (92.1%) while those admitted and referred to other specialty were 27 (4.3%) and 23 (3.7%) respectively. This is like the observation made in a Canadian emergency department where majority of those that presented with inflammatory bowel disease were treated and discharged (62.5%) while those admitted were 37.5%.[21.]

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study showed that the prevalence of gastroenterological disorders in the primary care practice in our environment may not be as high as it's been documented for other regions of the world. There was observed poor investigation (12.2%) of these conditions in primary care setting and endoscopy request accounted for less than 1% of these requests. Most of the patients seen were treated and discharged from the clinic. This low level and high level of investigating gastroenterological disorders and treatment on outpatient basis respectively could be based on empiric antisecretory drug therapy approach of most dyspeptics and peptic ulcer cases which will require further evaluation of the thoroughness of excluding alarm symptoms and other dyspepsia like conditions.

Recommendation

Primary care doctors need to be abreast of criteria and guidelines on gastroenterological diseases to aid appropriate diagnosis and management.

Further prospective study using standardized definitions of gastroenterological diseases is recommended.

Limitation

The lack of standardized definitions of dyspepsia used in this study as it spanned over 10years wherein different ROME criteria have emerged coupled with diagnosis of peptic ulcer diseases being made without endoscopy are major limitations of this study. Paucity of similar study in our environment limited the level of discussion of this work with local data.

REFERENCE

1. Gikas A, Triantafillidis JK. The role of primary care physicians in early diagnosis and treatment of chronic gastrointestinal diseases. International Journal of General Medicine 2014:7; 159 - 173. http://dx.doi.org/10.2147/IJGM.S58888

2. Michele Russo, Chiara Miraglia, Antonio Nouvenne, Gioacchino Leandro, Tiziana Meschi, Gian Luigi de' Angelis, et al. Approach to gastroenterological diseases in primary care. Acta Biomed 2018; Vol. 89, Supplement 8: 5-11 DOI: 10.23750/abm. V89i8-S.7963

3. Aderoju, Emmanuel Aderemi, Ene, Dan, Abutalib, Hamood, Aboh, Ignatius, Okonkwo, Thomas Nnanyelu. Pattern of gastrointestinal diseases in adult patients admitted to Samtah General Hospital, Gizan region, Saudi Arabia. Saudi Journal of Gastroenterology 1999; 5(2): 76-80.

4. Milivojevica V, Rankovica I, Krstica MN, Milosavljevicc T. Dyspepsia Challenge in Primary Care Gastroenterology. Digestive Disease. 2022; Vol 40: pp 270–275 DOI: 10.1159/000517668

5. Michele R, Chiara M, Antonio N, Gioacchino L, Tiziana M, Gian L, et al. Approach to gastroenterological diseases in primary care. Acta Biomed 2018; 89 (Supp 8): 5-11. DOI: 10.23750/abm. V89i8-S.7963

6. Everhart, J. E., Ruhl, C. E. Burden of Digestive Diseases in the United States Part I: Overall and Upper Gastrointestinal Diseases. Gastroenterology, 2009; 136(2): 376–386. doi: 10.1053/j.gastro.2008.12.015

7. Jamoh, B.Y., Abubakar, S.A., Isa, S.M. Morbidity and mortality profile of patients seen in medical emergency unit of a Teaching Hospital in Nigeria: A 4-year audit. Sahel Med J, 2018: 21:213-7

8. Oghenetega O.B, Kuti T.J, Owolabi F.M, Omayone T.P. Five-year Prevalence of Gastrointestinal Diseases and Disorders in Akure South, Nigeria. Afr. J. Biomed. Res. 2021; 24 245- 249

9. Massari, V., Maison, P., Desenclos, J.-C., Flahault, A. European Journal of Epidemiology, 1998; 14(8): 765–767. Doi: 10.1023/a: 1007596929640

10. Ajuwon BI, Yujuico I, Roper K, Richardson A, Sheel M, Lidbury BA. Hepatitis B virus infection in Nigeria: a systematic review and meta-analysis of data published between 2010 and 2019. BMC Infectious Diseases. 2021; 21:1-5.

11. Nwokediuko SC, Osuala PC, Uduma UV, Alaneme AK, Onwuka CC, Mesigo C. Pattern of liver disease admissions in a Nigerian tertiary hospital. Nigerian Journal of Clinical Practice. 2013; 16(3):339-42.,

12. Oluwagbenga OO, Musah Y, Paul O, Osisiogu SM, Adenike OO, Banjo OH, Elijah AO, Alex AS, Abiola TO, Osiron OT. Spectrum of Disease Conditions Seen at the Gastroenterology Clinic of a Tertiary Health Facility in South-Western Nigeria. Journal of Advances in Medicine and Medical Research. 2020; 32(6):77-87.

13. Oluwagbenga OO, Musah Y. An 8-year retrospective review of gastrointestinal medical emergency conditions at a tertiary health facility in Nigeria. Sudan Journal of Medical Sciences. 2018 Mar 20; 13(1):1-1.

14. Seifert B, Rubin G, de Wit N, Lionis C, Hall N, Hungin P, et al. The management of common gastrointestinal disorders in general practice: a survey by the European Society for Primary Care Gastroenterology (ESPCG) in six European countries. Digestive and Liver Disease. 2008 Aug 1;40(8):659-66

15. Bazaldua OV, Schneider FD. Evaluation and management of dyspepsia. American family physician. 1999; 60(6):1773.

16. Heikkinen M, Räsänen H, Färkkilä M. Clinical value of ultrasound in the evaluation of dyspepsia in primary health care. Scandinavian journal of gastroenterology. 2005; 40(8):980-4.

17. Wong W.M., Lim P, Wong B.C. Clinical practice pattern of gastroenterologists, primary care physicians, and otolaryngologists for the management of GERD in the Asia–Pacific region: the FAST survey. Journal of gastroenterology and hepatology. 2004; 19: S54-60.

18. Froehlich F, Burnand B, Pache I, Vader JP, Fried M, Schneider C, Kosecoff J, Kolodny M, DuBois RW, Brook RH, Gonvers JJ. Overuse of upper gastrointestinal endoscopy in a country with open-access endoscopy: a prospective study in primary care. Gastrointestinal endoscopy. 1997; 45(1):13-9.

19. Harrold LR, Field TS, Gurwitz JH. Knowledge, patterns of care, and outcomes of care for generalists and specialists. Journal of general internal medicine. 1999; 14(8):499-511.

20. Isaac, E., Jalo, I., Alkali, Y., Ajani, A., Abubakar, J., Aremu, J., et al. Low Level of Hepatitis B Surface Antigen Screening in a Tertiary Health Facility in Nigeria 2000-2014: Imperative for Provider Initiated Testing and Counselling for Hepatitis B Virus? Open Journal of Epidemiology. 2020; 10: 251-264. doi: 10.4236/ojepi.2020.103022.

21. Bernstein CN, Crocker E, Nugent Z, Virdi P, Singh H, Targownik LE. Gastroenterologist Consultation Is Uncommon but Associated with Improved Care Among IBD Patients Presenting to Emergency Departments in Winnipeg Hospitals. Journal of the Canadian Association of Gastroenterology. 2021; 4(2):57-64

License