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Acceptability of Oesogastroduodenal Fibroscopy in Private Health Facilities from the City of Bobo-Dioulasso in Burkina Faso

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Abstract: The oesogastroduodenal fibroscopy (OGDF) remains a reference examination for the exploration and treatment of digestive pathologies, but is subject to apprehension during its practice. This research studied the factors associated with the acceptability of oesogastroduodenal fibroscopy in private health facilities in the city of Bobo-Dioulasso, in Burkina Faso. This were a cross-sectional study with prospective collection from 1 June to 10 December 2021 with data inclusion from 1 January 2013 to 31 December 2020. The data collected concerned notified cases of tumours and those diagnosed with cancer, socio-demographic characteristics, location and histological and histogenetic types of these cancers. From a sample of 180 patients, the mean age was 43 ± 15.1 years-old with a sex ratio of 1.1. The mean score of acceptability of oesogastroduodenal fibroscopy was low with 53.3% of patients having an acceptability score ≤ 107. As well, the mean score of information received by patients about OGDF was low. At univariate analysis, the factors associated with the acceptability of FOGD were: the presence of discomfort (p=0.041), the presence of anxiety (p=0.040), and the desire to forego performing the examination (p=0.007). In multivariate analysis, we did not find any factors associated with the acceptability of esogastroduodenal fibroscopy. The acceptability of esogastroduodenal fibroscopy is very important in the context of quality improvement in health care. The continuous training of health care personnel on oesogastroduodenal fibroscopy, as well as better patient education on FOGD during a pre-OGDF consultation, is an asset to achieve its acceptability by patients.

Keywords: Upper Digestive Endoscopy, Quality of Health Care, Patient Satisfaction, Digestive System Diseases, Burkina Faso

1. Introduction

Due to their frequency, digestive diseases are a real public health problem in the world, particularly in Africa [1]. Among these pathologies, there is the management of upper digestive hemorrhage and hepatopathy which requires the practice of upper digestive endoscopy (UDE) or oesogastroduodenal fibroscopy (OGDF), a reference method of visual exploration of the upper digestive tract (esophagus, (esophagus, stomach, duodenum) and therapeutic procedures such as esophageal varicose vein ligation, colonic polyp resection and cancer prevention, laser tumor destruction, biliary tract stone extraction, and pancreatic cyst drainage. Although this high-performance examination is common practice in Western countries, it is unfortunately not yet widespread in tropical environments [1]. According to the French National Society of Digestive Endoscopy (FNSDE) [2], nearly 90,000 cases of peptic ulcers are diagnosed by endoscopy in France each year. This technology is widely used in Europe [3] where it is becoming mandatory for all stomach pain. In Africa, Houda showed that, compared to other investigative methods such as radiology, endoscopy has the great advantage of allowing biopsies to be taken which can confirm or clarify the microscopic diagnosis in Morocco [4]. During the practice of FOGD, Dumortier noted that most patients were apprehensive about gastroscopy a priori and often had bad memories of it, which is why the attitude of hepato-gastroenterologists towards this problem of tolerance varies according to the country and culture [5]. The evaluation of the patient's comfort during this examination in the current context of its performance is important [6]. In Burkina Faso, Sombié noted unpleasant manifestations such as anxiety, throat pain, nausea, and choking in his study on the tolerance and acceptability of OGDF with an acceptability of a subsequent upper digestive endoscopy of 96% in Ouagadougou [7]. This study did not take into account factors associated with acceptability of upper digestive endoscopy. In the second largest city in Burkina Faso, Bobo-Dioulasso, there were no data available on the acceptability of upper digestive endoscopy. The present research studied the acceptability of the OGDF in private health facilities in the city of Bobo-Dioulasso, Burkina Faso.

2. Methods

2.1. Study Setting

Among the health facilities in city of Bobo Dioulasso located in the West of Burkina Faso, seven (07) offered digestive endoscopy services. These were the Souro Sanou National Teaching Hospital (SSNTH), the Avenir Clinic, the Houet Universal Clinic, the Eureka Clinic, the Nadish Clinic, the Roseta Clinic, and the Saint Leopold Clinic. However, at the time of present study, the digestive endoscopy column of the SSNTH, which is third level reference facility for, was out of order and therefore excluded from the collection base. Of the six (6) remaining facilities, the following three (3) facilities were selected by simple random sampling: the Clinique Universelle du Houet, the Clinique Roseta, and the Clinique Saint Léopold.

2.2. Study Type and Period

This was a cross-sectional study. The study was conducted over months (07) from November 5, 2019 to June 28, 2020.

2.3. Study Population and Inclusion Criteria

All patients from the three (03) study sites who were at least 18 years old, who received FOGD during the study period, who gave their consent to participate in the study, and who were able to answer the questions were included in the present study.

2.4. Sample Size and Sampling

The expected sample size was at least 180 patients according to the sample size formula for a cross-sectional study (with $N = Z\alpha^2pq/\delta^2$; where $\alpha = 5\%$, $Z\alpha = 1.96$, $p = 50\%$, $q = 50\%$). The sampling consisted of consecutive recruitment of patients meeting the inclusion criteria.

2.5. Method of the Study, Description of the Variables and the Course of the Data Collection of the Study

The study method was a survey based on the individual interviews and using a semi-structured questionnaire. With the permission of the directors of the clinics concerned by this data collecation, the individual interviews were conducted in two stages: the first stage concerned the epidemioclinical criteria before the OGDF examination, and the second stage concerned the OGDF examination. Before the OGDF examination, the individual interview focused on sociodemographic characteristics, medical history, information about the OGDF examination, and information about the technical organization of the OGDF. During the OGDF examination, the following information was collected: duration of the examination, tolerance according to the doctor and the patient. Finally, on leaving the endoscopy room, the diagnosis made, the nature of any discomfort according to the patient and their view of the OGDF were noted. The acceptability of OGDF was calculated based on the therapeutic alliance self-report scale [8], adapted to the context of the present study.

2.6. Data Analysis

Collected data were entered using Epi data software version 3.1. A score of the acceptability of the OGDF according to the patients was calculated with the possible values of 27-189; then, it was calculated: mean ± standard deviation (SD), proportions in two categories from the median. From 27 to the median, the score is considered poor and good when greater than or equal to the median to 189. As well, a mean score of the information received and their sources on OGDF was calculated with the possible values of 0-3; then it was calculated: mean ± SD, and the median. Quantitative data were expressed as means (mean ± SD). The qualitative data

were rendered in numbers and percentages, and then the Chi-square test was used (depending on the conditions of application) to compare the proportions. Finally, the factors related to the acceptability of OGDF were identified by logistic regression according to the univariate analysis and then the multivariate one using only the factors of the univariate analysis with their p-value ≤ 0.20 in the model. The significance level was set at 0.050.

2.7. Ethical Considerations

Before conducting the present study, permission for data collection was obtained from the directors of the three (3) clinics involved in the study. Participation in the study was freely accepted verbally by each patient who could withdraw at any time without prejudice to the care and benefits of the care he or she was to receive. Anonymity and confidentiality were assured at every stage of the study. Information about the OGDF was given to each patient. No patient was exposed to additional risk.

3. Results

A total of 180 patients were included, 43.9% at the Saint Leopold Clinic, 33.3% at the Clinique Universelle du Houet, and 22.8% at the Roseta Clinic.

Table 1 shows the epidemiological and clinical characteristics of the patients. The mean age of the patients was 43 ± 15.1 years-old, with extremes of 18 and 90 years, and 51.7 were 40 years-old or younger. Males predominated (53.3%) with a sex ratio of 1.1. The majority of patients lived in urban areas (79.7%) and came from the city of Bobo Dioulasso (65.6%). More than half of the patients (56.1%) did not attend school. Married patients represented 82.8% of the population. Workers in the public and private sectors represented 32.8%. Patients with no known pathological history represented 80.6% of the population.

Table 1. *Clinical epidemics of participants in the study on the acceptability of oestroduodenal fibroscopy in private structures of Bobo Dioulasso.*

Variables		Number (n)	Percentage (%)
Age (years)	> 40	87	48.3
	40	93	51.7
Sex	Male	96	53.3
	Female	84	46.7
Educational attainment	Schooled	79	43.9
	Never attended school	101	56.1
Provenance	Bobo Dioulasso	118	65.6
	Out of Bobo Dioulasso	62	34.4
Residence	Rural	40	22.3
	Urban	140	79.7
Profession	Private and public sector workers	59	32.8
	Other jobs farmers. housewives. students. retirees)	121	67.2
Marital status	Married	149	82.8
	Unmarried	31	17.2
Background	No priors	145	80.6
	Background	35	19.4

There were 65.9% of participants who had never heard of OGDF (Table 2).

Table 2. *Information on Oestroduodenal Fibroscopy (FOGD) among participants in the study on the acceptability of oestroduodenal fibroscopy in private structures of Bobo Dioulasso.*

Variables	Terms	Number (n)	Percentage (%)
Have you ever heard of FOGD	Yes	61	33.8
	Non	119	65.9
Have you ever benefited from FOGD	Yes	21	11.7
	Non	159	88.3
Have you been briefed on the conduct of the review	Yes	68	62.2
	Non	112	38.8

As well 88.3% of the participants were undergoing their first OGDF examination. Participants who had not received information about OGDF from the prescribing physician represented 38.8% of the population. The mean score of information received by patients on FOGD was low in the present study of 1.24 ± 0.89 with extremes of 0 to 3, and a median score of 1. The indications for OGDF were mainly the following: 97 (54.2%) patients for epigastralgia and 13 (15.1%) for esophageal varices (Table 3). The patients who said been serene before the beginning of the examination were the most numerous (61.7%). General practitioners were the main prescribers with 54.4% (Table 3). According to the physician, the non-tolerant patients represented 84.4% of the total number of patients. The majority of patients found the examination unpleasant, i.e. 86.7% (Table 3). The diagnosis of pangastropathy accounted for 35.6%, followed by erythematous antral gastropathy (23.9%), hiatal hernia (13.9%), and peptic ulcer (10.6%) as seen in Table 3.

Table 3. *Frequency distribution of indications of digestive fibroscopy, difficulties during the examination, tolerance according to the participant, profile of prescribers of digestive fibroscopy, diagnosis selected after examination, and the nature of the discomfort caused by digestive fibroscopy.*

Variables		Number (n)	Percentage (%)
*Indications for digestive fibroscopy	Retrosternal pain	8	4.5
	Pyrosis	9	5.
	Regurgitation	1	0.6
	Odynophagie	2	1.1
	Hypersialorrhea	2	1.1
	Hiccups	4	2.2
	Nausea	1	0.6
	Peptic reflux	3	1.7
	Epigastralgia	97	54.2
	Ulcerative syndrome	7	3.9
	Search for esophageal varices	13	15.3
	Abdominal pain	4	2.2
	Balance sheet Ag HBS	10	7.8
	Hematemesis	3	1.7
	Melena	1	0.6
	Dyspepsia	1	0.6
	Other	10	24.6
Difficulties during the examination	Refusal of cooperation	13	7.2
	Restlessness	13	7.2
	Not bearing the breath	3	1.7
	No difficulty	151	83.9
	Test hard to bear	30	17.3
	Unpleasant examination	150	86.7
*Patient Tolerance	High risk infectious examination	3	1.7
	Painful examination	39	22.5
	Tolerable examination	15	8.7
	Opinion-less	2	1.2
Profile of prescribers of gastrointestinal fibroscopy	Hepatogastroenterologist	50	27.8
	Other specialist physician	8	4.4
	General practitioner	98	54.4
	Medical students	16	8.9
	Paramedics	8	4.5
*Diagnosis selected	Gastric ulcer	19	10.6
	Esophageal varices	13	7.2
	Hernia Hiatale	25	13.9
	Esophageal cancer	0	0.0
	Stomach cancer	3	1.7
	Pangastropathy	64	35.6
	Erythematous anterior gastropathy	43	23.9
	FOGD normale	3	1.7
	Other	10	5.6
*The nature of the discomfort caused by digestive fibroscopy	Nausea	48	80.0
	Vomiting	1	1.7
	Abdominal pain	2	3.3
	Hematemesis	1	1.7
	Throat pain	15	25.0
	No discomfort	113	62.8

*Some participants presented multiple modalities

During the OGDF examination, the intubation was easy for 96.1% of patients. The difficulties encountered during the examination were refusal to cooperate (7.2%), agitation (7.2%), and the patient not tolerating insufflation (1.3%). The discomfort experienced during the OGDF was divided into nausea (80.0%), throat pain (25.0%), abdominal pain (3.3%) and vomiting (1.7%) as described in Table 3. Still in Table 3, it presented the indications for digestive fibroscopy, the difficulties during the examination, the tolerance according to the participant, the profile of the prescribers of digestive fibroscopy, the diagnosis retained after the examination, and the nature of the discomfort generated by digestive fibroscopy. The exam lasted less than 5 minutes for 76.7% of the participants. The exam cost 20,000 FCFA (3.6 USD) per participant. Among the participants, 68.8% found the cost high, and 32.7% found it affordable. The results of the OGDF acceptability self-report scale showed a mean OGDF acceptability score of 107.3 ± 16.0, with extremes of 27 and 189. The median acceptability score was 107. More than half of the patients (53.3%) had a low FOGD acceptability score (score ≤ 107). Table 4 describes the relationships between the acceptability of OGDF and the variables. There was a statistically significant difference between the acceptability of esogastroduodenal fibroscopy and the following variables: the presence of discomfort (p=0.040),

the presence of anxiety (p=0.039), and the desire to forego performing the examination (p=0.006).

Table 4. *Comparisons between Variables and Acceptability of Oestroduodenal Fibroscopy.*

Terms	Variables	Acceptability score			Chi-2 test	P value
		>107 n (%)	≤107 n (%)	Total n (%)		
Age	40 years	48 (57.1)	45 (46.9)	93 (51.7)	1.891	0.169
Sex	Masculine	45 (53.6)	51 (53.1)	96 (53.3)	0.004	0.952
Provenance	Bobo Dioulasso	59 (70.2)	59 (61.5)	118 (65.6)	1.529	0.216
Profession	Private and public sectors	20 (23.8)	14 (14.6)	34 (18.9)	2.489	0.115
Home environment	Urban	66 (78.6)	74 (77.1)	140 (77.8)	0.057	0.811
Educational attainment	Never went to school	42 (50.0)	59 (61.5)	101 (56.1)	1.947	0.163
Marital status	Married	65 (77.4)	84 (87.0)	149 (82.8)	0.079	0.922
Patient History (ATCD)	Without ATCD	71 (84.5)	74 (77.0)	145 (80.6)	3.218	0.073
Have already benefited from FOGD	Non	74 (88.1)	85 (88.5)	159 (88.3)	1.583	0.208
Patient attitude	Serene	46 (54.8)	65 (67.7)	111 (61.7)	3.177	0.075
Intubation	Easy	81 (96.4)	92 (95.8)	173 (96.1)	0.042	0.837
Difficulties	Without difficulty	66 (78.6)	85 (88)	151 (83.9)	3.295	0.069
Physician Tolerance	Intolerant	73 (86.9)	79 (82.3)	152 (84.4)	0.726	0.394
Have been unwell	Non	50 (59.5)	71 (74.0)	121 (67.2)	4.236	0.040
Have a description of the procedure before starting the exam	Yes	58 (69.0)	68 (70.8)	126 (70.0)	0.871	0.460
Have been informed of the conduct of the review during the consultation	Non	48 (57.1)	64 (66.7)	112 (62.2)	1.729	0.189
Be anxious before starting the exam	Yes	48 (57.1)	69 (71.9)	117 (65.0)	4.274	0.039
Wanted to give up	Non	54 (64.3)	79 (82.3)	133 (73.9)	7.528	0.006
If you had a choice would you be there to do the exam	Yes	59 (70.2)	77 (80.2)	136 (75.6)	2.411	0.120
Exam duration	<5min	64 (76.2)	74 (77.1)	138 (76.7)	0.020	0.984

Table 5 presents the results from the logistic regression analysis for the identification of factors in the acceptability of esogastroduodenal fibroscopy. From the univariate analysis, the factors associated with acceptability of OGDF were: the presence of discomfort (p=0.041), the presence of anxiety (p=0.040), and the desire to forego performing the examination (p=0.007). There were no factors associated with OGDF acceptability from the multivariate analysis.

Table 5. *Identification of factors associated with the acceptability of oestroduodenal fibroscopy.*

Variables	Terms	Acceptability score		Univariate test		Multivariate test	
		> 107 n (%)	≤ 107 n (%)	Unadjusted Gold	P value	Adjusted Gold	P value
Age	> 40 years	36 (42.9)	51 (53.1)	1.511 (0.838-2.724)	0.170	1.130 (0.579-2.208)	0,720
	40 years	48 (57.1)	45 (46.9)	1		1	
Profession	Private and public sectors	20 (23.8)	14 (14.6)	0.546 (0.256-1.165)	0.118	0.766 (0.332-1.767)	0,531
	Other jobs	64 (76.2)	82 (85.4)	1		1	
Educational attainment	Went to school	42 (50.0)	37 (38.5)	0.627 (0.347-1.135)	0.123	0.853 (0.440-1.652)	0,637
	Never went to school	42 (50.0)	59 (61.5)	1		1	
Marital status	Married	65 (77.4)	84 (87.5)	2.046 (0.927-4.517)	0.076	1.505 (0.440-1.652)	0,372
	Unmarried	19 (22.6)	12 (12.5)	1		1	
Patient attitude	Serene	46 (54.8)	65 (67.7)	1	0.076	1	0,699
	Anxious-depressed	38 (45.2%)	31 (32.3%)	0.577 (0.315-1.059)		1.152 (0.563-2.359)	
Difficulties	Without difficulty	66 (78.6)	85 (88.5)	1.174 (0.255-5.402)	0.073	1.517 (0.611-3.769)	0,369
	With difficulty	18 (21.4)	11 (11.5)	1		1	
Have been informed of the conduct of the review during the consultation	Yes	36 (42.9)	32 (33.3)	0.667 (0.364-1.222)	0.189	0.751 (0.391-1.442)	0,390
	Non	48 (57.1)	64 (66.7)	1		1	
Be anxious before starting the exam	Non	36 (42.9)	27 ((28.1)	0.522 (0.281-0.970)	0.040	1.161 (0.412-3.268)	0,778
	Yes	48 (57.1)	69 (71.9)	1		1	
Wanted to give up	Yes	30 (35.7)	17 (17.7)	1	0.007	1	0,249
	Non	54 (64.3)	79 (82.3)	0.522 (0.281-0.970)		0.486 (0.143-1.657)	
If you had a choice. Would you be here to do the exam?	Yes	59 (70.2)	77 (80.2)	1.717 (0.865-3.411)	0.122	0.915 (0.398-2.099)	0,833
	Non	25 (29.8)	19 (19.8)	1		1	
Have been unwell	Yes	34 (40.5)	25 (26.0)	1	0.041	1	0,206
	Non	50 (59.5)	71 (74.0)	0.518 (0.276-0.973)		0.641 (0.322-1.277)	

4. Discussion

After this study identified factors associated to the OGDF acceptability. There was a statistically significant difference between the acceptability of esogastroduodenal fibroscopy and the presence of discomfort, the presence of anxiety, and the desire to forego performing the examination. On univariate analysis, the presence of discomfort, the presence of anxiety, and the desire to forego the examination were factors that negatively influenced the acceptability of FOGD. It had no factors associated with FOGD acceptability on multivariate analysis.

The present study has a major limitation, that of any cross-sectional study even if it was analytical. Therefore, the method used was the individual face-to-face interview in the clinic. Although this method reduced the rate of non-response and missing data, it exposes to the risk of social desirability, as the patient was less likely to express his point of view.

The average age of the patients in the present study, 43.3 years-old, was similar to that from Forma in Togo, which found an average age of 43 years-old [9]. This result is close to that from Koura in Burkina Faso [10], from Ngouala in Senegal [11], and from Soro in Côte d'Ivoire [12] which found a mean age of 41.72, 39.9 and 40 years-old respectively. In all these studies, the candidate population for OGDF was relatively young. This is explained by the structure of the population, which is mostly young in the West African region.

Male sex was predominant in the present study as well as in Soro's study with a male predominance of 53% [13]. Foma had also noted the male predominance in his study [9]. The higher income of men compared to women would explain their greater accessibility to OGDF. Other studies such as those from Sombié in Burkina Faso [7], and Ngouala in Senegal [11] had noted the predominance of the female sex. This result could be explained by the high number of psychosomatic disorders among women in their studies.

In the present study, private and public sector workers were less concenred compared to other occupations. Other studies in West Africa had found the same trends [9, 11]. Agriculture being the primary occupation in developing countries could explain this finding. Moreover, the present study found that the number of patients not attending school was in the majority, as did the results of the Tahri study in Morocco in 2018 [14] where 45.5% of patients attended school. The high number of out-of-school patients could be explained by the low schooling rate in developing countries including Burkina Faso.

Regarding marital status, the majority of participants were married. This finding was the same as that of the Balandougou study in Mali where 73.1% of the participants were married [15]. The social importance of marriage in the present context could explain this finding.

Any pathological history was found in most of the patients in the present study. This result differed to that from Moisan in France where 50% of the patients having hypertension, 9 patients having heart failure, 6 patients having depression and 6 chronic alcoholics [16]. Moison's study of elderly patients could explain this finding, as advanced age (over 50 years-old) is a risk factor for hypertension and diabetes, which explains why OGDFs are performed for the assessment of the field and the search for complications.

More than half of the patients had never heard of OGDF. This result was close to that from Sombié [7] in Burkina Faso and Soro [12] in Côte d'Ivoire, were 69.2% and 63.3% respectively of patients did not receive information about OGDF. The high number of patients who did not receive prior information about the examination can be explained by the fact that hepato-gastroenterologists represented only 18.2% of the prescribers of OGDF according to the study by Sombié [7] and in the present study. As well, the lack of communication from general practitioners, who were the first point of contact for consultation on the preparation, the procedure and the complications of the examination, could explain this finding [17]. The French Society of Digestive Endoscopy (FSDE) recommends the use of information sheets which should be commented on and given to the patient during the consultation [18]. The absence or inadequate training of prescribers and the illiteracy of patients would be anticipated by the use of verbal information in this context. Even if it is provided, the information is not always of good quality. According to Richard [19], full information must be given to the patient (purpose, interest, preparation, course, possible complications). This should be done during a consultation before the examination, preferably the day before, as this improves tolerance and acceptability [16, 20], as found in the present study.

OGDF was performed for the first time for the majority of cases in the present study. This was the same finding according to Foma in Togo (66.67%) [9], to Tahri in Morocco (63%) [21], and to Sombié in Burkina Faso (51.1%) [7]. This could be explained by the non-compliance with the follow-up appointments and the difficulties about OGDF acessibility in the context of the present study. Indeed, the French National Agency for Health Accreditation and Evaluation (FNAHAE) recommends regular follow-up by digestive endoscopy for certain esogastroduodenal pathologies in adults such as endo-brachy-esophagus, peptic ulcer disease and portal hypertension [21].

Epigastralgia was the first indication for OGDF in the present study, followed by the search for esophageal varices. Similar results were found by several authors in Africa such as Koura in Burkina Faso [10], Sylla in Mali [15], and Lawson in Togo [1] who found epigastric pain as the first indication for upper digestuive endoscopy with 49.3%, 47.7% and 60.68% of cases respectively. Self-medication with gastro-toxic products, stress contexte, and poor dietary habits could explain these findings.

The majority of patients had a serene attitude in the present study. Moisan found a result similar as the present results [16]. Other authors such as Adjoh in Togo [22], Tahri [14] and Salwa [23] in Morocco found a higher number of anxious patients in 73%, 56.5% and 78.4% of cases respectively. This

difference could be explained by the cultural difference of the different study populations, and the absence of prior information of the patients on the course of the examination from the prescribing physician. Indeed, Houndonougbo showed that the majority of general practitioners had poor knowledge of patient preparation for digestive endoscopy in Burkina Faso [17].

A fair tolerance was noted in the present study. Soro had made the same observation with a fair tolerance for 16.67% of cases in Ivory Coast [12]. Other studies such as those of Sombié in Burkina Faso [7], Tahri in Morocco [14], Foma in Senegal [9] reported good tolerance in 84.6%, 71.3%, and 92.11% of cases respectively. Sehonou [24] in Benin found poor tolerance in only 19% of cases [24]. This high rate of good tolerance in these different studies can be explained by the difference in the perception of pain, and a better preparation of the patients in their studies.

A large number of patients found the OGDF examination unpleasant as noted by Sombié [7] where 100% of the patients found the OGDF unpleasant. Soro also reported more than 43% of patients found the examination unpleasant in Côte d'Ivoire [12]. Several studies have noted the unpleasantness of OGDF, which is a subjective feeling expressed by the patient [6, 12]. According to Altman in the United States of America [24], nausea and efforts to vomit were frequent in patients, due to the presence of the endoscope in the oropharynx, justifying the use of viscous lidocaine. On the other hand, in France, Moisan found less choking and nausea [16]. The absence of an unpleasant feeling during the examination can be explained by the fact that his study was only carried out on elderly subjects in whom the gag reflex was less marked.

As in the present study, the main prescribers of the upper digestive endoscopy examination were general practitioners according to Sombié in Burkina Faso with 45.1% [7] and Ngouala in Senegal with 77% [11]. This high number of general practitioners prescribing the examination can be explained by the small number of hepato-gastroenterologists and by a better availability of general practitioners in the present context. This is why it is necessary to better equip the general practitioner to prepare the patient for this examination and to strengthen collaboration between general practitioners and specialists. But this also suggests reviewing the role of the general practitioner in relation to the prescription of FOGD within the framework considering a coherent health system.

The duration of the examination was most often less than or equal to 5 minutes in the present study, and 5 minutes in France according to Roziere [6] and 4.7 minutes in Togo according to Foma [9]. The experience of the hepato-gastroenterologist could explain this finding. On the other hand, Alexandridis [26] in Morocco observed an average duration of 7.7 minutes. The insertion time was 13.9±0.6 seconds and the examination time 11.3 minutes±0.3 according to Murata [27]. The use of the transnasal route and the absence of sedation in the case of Murata [27] could explain the lengthening of the procedure.

Pangastropathy was the most common diagnosis in the present study, followed by erythematous antral gastropathy and gastric ulcer. This high number of pangastropathy could be explained by the delay of consultation, and the lack of food hygiene favoring Helicobacter Pylori infection. Indeed, Helicobacter pylori infection affects half of the world's population, mainly in developing countries where the infection reaches 80% of the population [28]. Self-medication with regular use of non-steroidal anti-inflammatory drugs could also explain this finding. This result is superior to that from Ma in Togo who found pangastropathy about 22.9% of cases [1].

Normal results were also recorded in the present study. This result was much lower than that from Moisan in France [16] and Alexandridis in Morocco [26] who found normal results for 13 out of 30 and for 27 out of 157 patients respectively. The same is true for the results found by Klotz about his series of studies in African capitals [29]. In Mali, Sylla reported a proportion of normal results of almost 50% of cases [15]. This high rate of normal results in their studies could be related to the prescription of proton pump inhibitors by paramedical staff without prior examination.

In the present study, the mean OGDF acceptability score was low for more than half of the patients. This result is close to that of Hassini with 43% [30] and Roziere with 42% [6]. The lack of communication from the prescribing physicians could explain this finding, especially the absence of a preparation consultation for the OGDF examination. Opposite results were observed by Zaman in the United States for 81% of the population [31], by Sombié in Ouagadougou for 83.7% of the population [7], and by Sehonou in Benin for 91.3% of the population [24].

In the present study, a statistically significant difference was found between acceptability and the presence of anxiety before the examination. This result is identical to that of Tahri in Morocco who found a statistically significant relationship between acceptability of FOGD and anxiety during the procedure [14]. And three factors were found to be associated with the acceptability of FOGD: "presence of anxiety", "having had discomfort", and "having felt like giving up". This result was similar to that of Hassini who noted that anxiety was a factor that negatively influenced the acceptability of OGDF (p=0.001) in Morocco [30]. In Benin, Sehonou showed that acceptability was lower (and the risk of refusal higher) when patients were agitated during the examination (p=0.02), had felt discomfort, and that this discomfort was felt to be intense [24]. In Tahri's study [14], the factors influencing the good tolerance of gastroscopy were age over 50 years-old (p=0.001), good information prior to the examination (p= 0.01) and absence of pain during the procedure (p=0.01). The results differed from those of Amouretti who found a significant correlation between the good tolerance of OGDF the day after and two weeks after the procedure and the fact that it was performed in a clinic in the presence of an anaesthetist and with parenteral sedation in France [32]. Also in France, Altman reported on factors associated with acceptability such as age and excessive delay of appointment [27]. By multivariate analysis, no statistically significant relationship was found between acceptability and

the variables studied. However, according to Froehlich [33], increasing age ($p< 0.001$), low anxiety level ($p< 0.001$) and male gender ($p< 0.03$), were associated with better patient acceptability.

5. Conclusion

Oesophagogastroduodenal fibroscopy (OGDF) is the first-line examination in the exploration of the upper digestive tract. The OGDF acceptability was low with more than half of the patients having an acceptability score of FOGD less than or equal to the mean. Also, the majority of patients did not receive the right information about OGDF due to a lack of communication from the prescribing physician, which may explain the association between its acceptability and the "presence of anxiety," "had discomfort," and "felt like giving up." Ongoing training of health care personnel on OGDF, as well as better information to the patient on FOGD during a OGDF preparation consultation, is an asset to obtain its acceptability by patients.

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