

Magnitude and Pattern of Anorectal Problems Among Patients Attending Surgical Departments of Public Hospitals in Addis Ababa, Ethiopia

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To cite this article:

Adane Haile, Trhas Tadesse, Ephrem Mamo, Daniel Zemefense, Zelalem Assefa. Magnitude and Pattern of Anorectal Problems Among Patients Attending Surgical Departments of Public Hospitals in Addis Ababa, Ethiopia. *Journal of Surgery*.

Vol. 10, No. 5, 2022, pp. 149-156. doi: 10.11648/j.js.20221005.12

Received: August 17, 2022; **Accepted:** September 13, 2022; **Published:** September 29, 2022

Abstract: *Background:* Anorectal disorders include a diverse group of pathological disorders that generate significant patient discomfort and disability. Anorectal disorders are a common reason for visits to both primary care physicians and gastroenterologists. These disorders are varied and include benign condition such as hemorrhoids to more serious condition such as malignancy. *Method:* cross-sectional study with quantitative approach was deployed to identify the magnitude and pattern of anorectal problems. A total of 1174 adult patients (15 & above years old) visiting emergency and regular surgical OPD was included. Frequency tables and graphs were used to describe the study variables. A logistic regression model was used to measure the association between the predictors and Anorectal malformation, and a P-value < 0.05 was accepted as statistically significant. OR and 95% CI were used to express the direction and strength of the association. *Result:* One hundred ninety-five (16.6%) CI at 95% (14.5, 18.7) of the study participants had Anorectal problem. Among patients with Anorectal problems, 118 (60.5%) were males & 77 (52.3%) were females. Majority of them 145 (52.3%) are above 30 years. Among diagnosed with Anorectal problems more than half 118 (60.5%) of the problem were hemorrhoid, 73 (37.4%) of the patients were presented with complain of anal pain, and 37 (19.2%) of them with swelling in the anus. Female patients were less likely to develop Anorectal problems than male patients (AOR = 0.67, 95% CI: 0.44, 0.99). More over patient with occupation others like soldier, factory worker, shop keeper, office worker, driver were more likely to develop Anorectal problems than patients with occupational status of student (AOR = 4.9, 95% CI: (1.55, 15.82)). *Conclusion:* The goal of this study was to provide base line data on the pattern and magnitude of Anorectal problems based on the data obtained from public hospitals of the capital city of Ethiopia. The magnitude of Anorectal problems is high among surgical patients and sex, occupation and education status are significantly associated with Anorectal problems.

Keywords: Anorectal, Malformation, Magnitude, Pattern

1. Introduction

Anorectal disorders include a diverse group of pathological disorders that generate significant patient discomfort and disability [1]. The most common anorectal lesions encountered in family practice are- (in the order of frequency), Hemorrhoids [Internal or external], Anal fissures [Acute or chronic], Anal fistula [Low or high], Abscesses [Perianal, ischio-rectal, submucous], Polyps [Adenomatous,

fibrous anal, juvenile], Rectal Prolapse [Mucosal or complete], Anal skin tags or sentinel pile, Anorectal sepsis [Hydradenitis suppuritiva, AID [2].

The prevalence in the general population is much higher than that seen in clinical practice; since most patients with symptoms referable to the Anorectum do not seek medical attention [3]. Although many Anorectal conditions are benign & easily treatable, patients may delay seeking medical advice because of embarrassment or fear of cancer [4]. Both

malignant and non malignant conditions often present as advanced disease, requiring more extensive treatment and causing greater patients distress than if conditions had been adequately diagnosed and managed at an earlier stage [1].

In Ethiopia up to 80% of the population uses traditional medicine due to the cultural acceptability of healers and local pharmacopeias, the relatively low cost of traditional medicine and difficult access to modern health facilities [5]. So as general rule patients with anorectal problem seeking medical attention lies in this group. The study is aims to assess magnitude and pattern of Anorectal problems among patients visiting surgical departments in public hospitals, Ethiopia.

2. Materials and Methods

The study was conducted in public hospitals of Addis Ababa, Ethiopia. Addis Ababa is the capital city of Ethiopia with a total population of 3,238,000. The population is growing by 2.5% per annum on average [6]. There are a total of 44 hospitals in Addis Ababa of which 9 are public, 32 private, 2 armed force and 1 police hospitals. Among 9 public hospitals 5 are regional. The study was conducted in Addis Ababa 9 public hospitals those had general surgery department including Yekatit 12 hospital Medical College, Menelik II Hospital, Zewditu Memorial Hospital, Ras Desta Damtew Hospital, St. Paul Millennium Medical College, Black Lion Hospital, Tirunesh Bejing Hospital, St. Peter general hospital & ALERT hospital.

2.1. Study Design and Period

Cross-sectional study design with quantitative approach was deployed to identify the magnitude and pattern of anorectal problems, conducted from May 01 to 30 2020.

2.2. Study Population

All clients visiting the above mentioned 9 public hospitals adult surgical emergency and outpatient department in Addis Ababa city was the source population.

2.3. Sample Size and Sampling Technique

Sample size was calculated using single population proportion; by taking the prevalence of ano –rectal problems with the assumption of 50% while the extent of magnitude of ano –rectal problems in Addis Ababa public hospitals was not known from previous studies in the local context. Therefore, the sample size was calculated using this prevalence rate with precision 3% at 95% confidence level, incomplete and non-response rate 10% which as a result give a total sample size of 1174.

2.4. Selection of Study Participants

All adult patients age 15 & above years old visiting emergency and regular surgical OPD was included but debilitated & seriously ill patients who are weak to be interviewed was excluded.

2.5. Study Variable

Cases of Anorectal problems (ARP) was dependent variables and socio-demographic & socioeconomic data, clinical data like history of disease, knowledge and treatment seeking behavior of patients with ARP was independent variables.

2.6. Data Collection

A pre-tested structured questionnaire was used to collect the data. Data collectors were BSc nurses with similar work experience. To assure the data quality, the data collectors were trained/oriented prior to data collection using a short, straightforward form, with boxes to be ticked and a minimum of text; this is believed to be the best way to guard against under-reporting cases. In addition the investigators checked the data collection process every day in the morning routinely.

2.7. Statistical Analysis and Processing

Data was entered into Epi data 3.1 and analyzed using SPSS version 25. Data cleaning and assumption checking was performed prior to analysis. Descriptive statistical analysis was done to describe the characteristics of study participants. Logistic regression analysis was done and variables significant at bi-variant analysis ($P \leq 0.25$) were entered to multivariate analysis and odds ratio were used as measure of strength of association between the dependent variable and independent variables. P-value less than 0.05 were used for identifying statistically significant variable at multivariate analysis.

2.8. Ethical Considerations

Ethical approval was obtained from the Institutional Review Board of Yekatit 12 Hospital medical college. Permission paper was obtained from health care facilities that were included. Verbal informed consent was obtained from each study participant. Participants are free to withdraw at any time, without reason, and without any effect on their professional responsibilities.

3. Results

3.1. Study Population Characteristics

A total of 1174 participants i.e all adult surgical patients age 15 & above years old visiting emergency and regular surgical OPD were included in the study with a response rate of 1174 (100%). Among the respondents, more than half were female 599 (51%), while the majority of the respondents were in the age of greater than 40 years 482 (41.1%) with minimum 12 and maximum 96 years, median 37, mean 40.89 and standard deviation +16.81. Of the total participants, 817 (69.6%) of them were married, and 874 (74.4%) were Christian in their religion. The educational status of participants indicated that 421 (35.9%) of them were grade 7 to 12, and 218 (18.6%) of the participants were illiterate. With regard to occupational status, 309 (26.3%)

were house wife. Majority of the respondents 910 (77.5%) were living in urban area (Table 1).

Table 1. Socio-demographic characteristics of the respondents in selected hospitals of Addis Ababa Ethiopia, June 2020.

Socio-demographic	Category	Frequency	Percentage
Age	10-20	85	7.2
	21-30	337	28.7
	31-40	270	23
	>40	482	41.1
Sex	Male	575	49
	Female	599	51
Marital status	Single	306	26.1
	Married	817	69.6
	Divorced & widowed	51	4.4
	Educational status	Illiterate	218
Educational status	Read and write	102	8.7
	Grade 1-6	191	16.3
	Grade 7-12	421	35.9
	Diploma	141	12
	Degree and above	101	8.6
	Religion	Christian	874
Muslim		300	25.6
Occupational status	Student	108	9.2
	Farmer	138	11.8
	Merchant	154	13.1
	House wife	309	26.3
	No occupation	88	7.5
	Others*	377	32.1
	Residence	Urban	910
Rural		264	22.5

3.2. Magnitude of Anorectal Problem

Nine hundred seventy nine (83.4%) of the respondent had no ano-rectal problems. Whereas 195 (16.6%) CI at 95% (14.5, 18.7) of the study participants had ano-rectal problem (Figure 1).

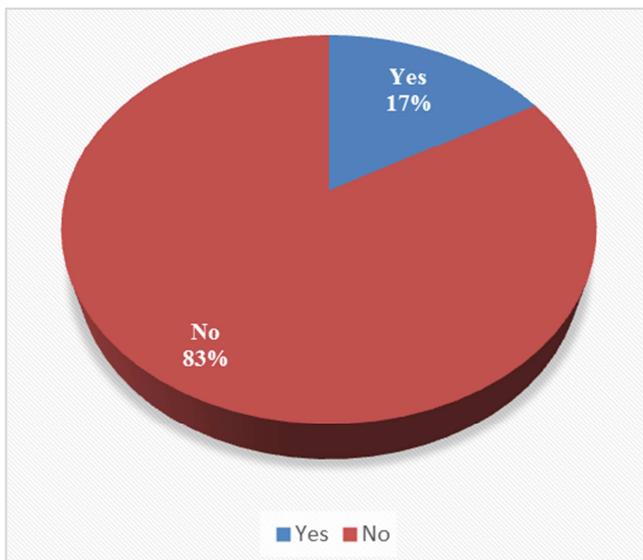


Figure 1. Magnitude of anorectal problems among patients attending surgical OPD in selected hospitals of Addis Ababa Ethiopia June 2020.

3.3. Socio-demographic Characteristics of Patients with Anorectal Problem

Among patients with perianal problems 118 (60.5%) were males & 77 (52.3%) were females. Most of cases seen in age

group of 21-40 yrs (52.35%). The mean age was 37.1±15.7 yrs with age range of 15-78 years. Most of them are married & literate. (Table 2).

Table 2. Socio-demographic Characteristics of patients with anorectal problem among patients attending surgical OPD in selected hospitals of Addis Ababa Ethiopia June 2020.

Variable	Category	Frequency	Percentage
Sex	Male	118	60.5
	Female	77	39.5
Age	10-20	5	2.6
	21-30	45	23.1
	31-40	57	29.2
	>40	88	45.1
Marital status	Single	37	19.0
	Married	145	74.4
	Divorced & widowed	13	6.7
Educational status	Illiterate	34	17.4
	Read and write	11	5.6
	Grade 1-6	36	18.5
	Grade 7-12	65	33.3
	Diploma	24	12.3
	Degree and above	25	12.8
Religion	Christian	152	77.9
	Muslim	43	22.1
Occupation	Student	4	2.1
	Farmer	23	11.8
	Merchant	27	13.8
	House wife	37	19.0
	No occupation	12	6.2
	Others*	92	47.2
	Residence	Urban	153
Rural		42	21.5

3.4. Socio-demographic Factors Associated with Ano-rectal Problems

Sex, age, marital status, educational status, occupation were found to be significantly associated with ano-rectal problem with P-value < 0.2. After controlling the confounding factors sex, educational status, and occupation were significantly associated with ano-rectal problems with p-value <0.05.

Female patients were less likely to develop ano-rectal

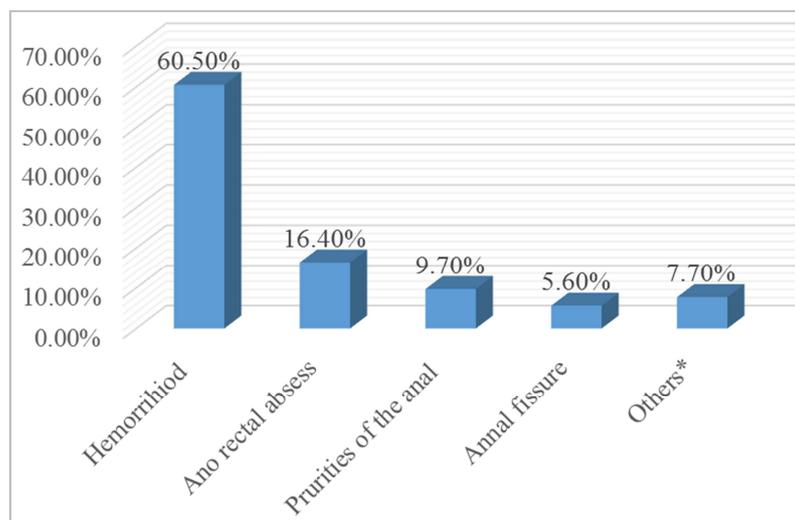
problems than male patients (AOR = 0.67, 95% CI: 0.44, 0.99). Similarly patients with educational status degree and above were more likely to develop ano-rectal problems compared to patients with educational status is read and write (AOR = 2.48, 95% CI: 1.08, 5.69). More over patient with occupation others like soldier, factory worker, shop keeper, office worker, driver were more likely to develop ano-rectal problems than patients with occupational status of student (AOR = 4.9, 95% CI: (1.55, 15.82) (Table 3).

Table 3. Socio-demographic factors associated with ano-rectal problem among the patients attending surgical OPD in selected hospitals of Addis Ababa Ethiopia June 2020.

Variable	Category	Ano-rectal problem		COR (95% CI)	AOR (95% CI)
		Yes	No		
Sex	Male	118	457	.57 (.42, .78)*	0.67 (0.44, 0.99)**
	Female	77	522	1	1
Age	10-20	5	80	3.6 (1.41, 9.08)*	1.62 (0.52, 5.07)
	21-30	45	292	1.5 (0.98, 2.14)	1.31 (0.79, 2.16)
	31-40	57	213	0.8 (0.58, 1.21)	0.85 (0.57, 1.27)
	>40	88	394	1	1
Marital status	Single	37	269	2.5 (1.21, 5.09)*	2.1 (0.89, 4.81)
	Married	145	672	1.6 (0.82, 3.05)	1.8 (0.91, 3.60)
	Divorced & widowed	13	38	1	1
Educational status	Illiterate	34	184	1.8 (0.99, 3.18)*	1.6 (0.81, 3.09)
	Read and write	11	91	2.7 (1.26, 5.89)*	2.48 (1.08, 5.69)**
	Grade 1-6	36	155	1.4 (0.79, 2.53)*	1.3 (0.69, 2.42)
	Grade 7-12	65	356	1.8 (1.07, 3.04)*	1.5 (0.86, 2.62)
	Diploma	24	117	2.4 (1.89, 5.35)*	1.4 (0.71, 2.62)
	Degree and above	25	76	1	1
Religion	Christian	152	722	0.79 (0.55, 1.15)	
	Muslim	43	257	1	
Occupation	Student	4	104	8.4 (3.01, 23.41)*	4.9 (1.55, 15.82)**
	farmer	23	115	1.6 (0.97, 2.68)*	1.5 (0.85, 2.67)
	Merchant	27	127	1.5 (0.94, 2.45)*	1.4 (0.87, 2.31)
	House wife	37	272	2.4 (1.57, 3.59)*	1.7 (0.99, 2.91)
	No occupation	12	76	2.0 (1.07, 3.93)*	1.9 (0.98, 3.72)
	Others*	92	285	1	1
Residence	Urban	153	757	0.94 (0.64, 1.36)	2.67 (0.26, 1.69)
	Rural	42	222	1	1

*p<0.2

**<0.05.



*ano-rectal tumor & peri anal fistula

Figure 2. Pattern of ano-rectal problems in relation to specific diagnosis among patients attending surgical OPD in selected hospitals of Addis Ababa Ethiopia June 2020.

3.5. Pattern of Anorectal Problem in Relation to Specific Diagnosis

With regard to the specific diagnosis of the patients with ano rectal problem more than half 118 (60.5%) of the problem were hemorrhoid, 32 (16.4%) ano-rectal abscess, 19 (9.7%) anal purities and 11 (5.6%) anal fissure (Figure 2).

3.6. Pattern of Patients Presenting with Anorectal Problems in Relation to Their Clinical Presentation

Concerning the pattern of patients with ano rectal

problem, 73 (37.4%) of the patients were presented with complain of anal pain, and 37 (19.2%) of them with swelling in the anus. With regard to how the health professional reach the diagnosis, 175 (89.7%) by history taking, 163 (83.6%) by inspection, 154 (79%) by DRE and only 44 (22.6%) by anoscopy. one hundred fourth three (73.3%) of the patients diagnosed the problem by GP while only 22 (11.3%) were diagnosed by surgeon. From the total patients with ano-rectal, 146 (74.9%) of them were treated previously, out of this 38 (26%) of them treated by traditional healers (table 4).

Table 4. Pattern of patients presenting with perianal problem in relation to their clinical presentation among patients attending surgical OPD in selected hospitals of Addis Ababa Ethiopia June 20120.

Pattern	Categories	Frequency	Percentage
Presenting complain	Anal pain	73	37.4
	Bleeding per rectal	34	17.4
	Pus discharge from the anus	34	17.4
	Anal purities	17	8.8
	Swelling in the anus	37	19.2
Way of reaching the dx	History	175	89.7
	Inspection	163	83.6
	DRE	154	79
	Anoscopy	44	22.6
By whom this dx reach	GP	143	73.3
	Resident	30	15.4
	Surgeon	22	11.3
Previous RX	Yes	146	74.9
	No	49	25.1
Who treat you previously	By traditional healer	38	26
	By health professional	108	74
Previous medical problem	Don't have	158	81.4
	DM	14	7.2
	Others*	23	12.4
History of similar problem in the family	Yes	29	14.9
	No	166	85.1

3.7. Pattern of Patients Presenting with Anorectal Problems in Relation to Their Habit, Knowledge About the Disease

Related to personal habit of the respondents, 132 (67.7%) of the participants had a habit of eating injera with shiro whereas 21 (10.8%) had a habit of eating injera with siga wet. Ninety eight (50.3%) of the participants were sitting while they are working with daily working hours of eight

and above hours 119 (61%). With regard to habit of postponing their defecation 70 (35.9%) of the participants were postponed their defecation. The main reason for this were 20 (29%) no latrine, 49 (71%) due to work. Forty one (21%) and 21 (10.8%) of the participants had a habit of cleansing after defecation by tissue paper and newspaper respectively. one hundred twelve (57.4%) were defecated in sitting position and 96 (49.2%) were defecated twice a day (table 5).

Table 5. Pattern of patients presenting with anorectal problems in relation to their habit, knowledge about the disease at OPD in selected hospitals of Addis Ababa Ethiopia June 2020.

Personal factors	Categories	Frequency	Percentage
Dietary habit	Injera with shiro	132	67.7
	Injera with sigawot	21	10.8
	Cabbage	18	9.2
	Kocho	12	6.2
	Others*	12	6.2
Working condition	Sitting	98	50.3
	Standing	97	49.7
Daily working hours	≤8	119	61
	>8	76	39
Habit of postponing defecation	Yes	70	35.9
	No	125	64.1

Personal factors	Categories	Frequency	Percentage
Reason for postponing	No latrine	20	29
	Due to work	49	71
Habit of cleaning after defecation	Water	133	68.2
	Tissue paper	41	21
	News paper	21	10.8
Defecation position	Sitting	83	42.6
	Squatting	112	57.4
Bowel Habit	Daily	78	40
	Twice a day	96	49.2
	Every other day	12	6.2
	Greater than 2 day	9	4.6
Habit of smoking	Yes	14	7.2
	No	181	92.8
Habit of coffee drinking	Yes	88	45.1
	No	107	54.9
Habit of alcohol drinking	Yes	36	10.3
	No	175	89.7
Habit of chewing chat	Yes	20	10.3
	No	175	89.7
Habit of doing exercise	Yes	53	27.2
	No	142	72.8
History of trauma	Yes	15	7.7
	No	180	92.3
History of recurrent wound healing	Yes	77	39.5
	No	118	60.5
Know the name of your problem	Yes	123	63.1
	No	72	36.9
Length of stay at home before looking medical support	Immediately	70	35.9
	After some delay	125	64
Discuss their problem to the near by	Yes	161	82.6
	No	34	17.4
To whom they discuss	Family	81	50.3
	Husband	16	9.9
	Friends	27	16.8
	Wife	35	21.7
	Health professional	2	1.2
First place of visit	Traditional healer	37	19
	Holy water	16	8.2
	Health institution	142	72.8

Relationship between patients assumption about their problem against confirmed clinical diagnosis among the patients presented with anorectal problem.

Out of 195 patients with anorectal problem only 123 (63%) patients reported they know the name of their problem

by reporting as Boils (Anorectal abscess) or Hemorrhoids (out of reported seven types of anorectal problem with clinical diagnosis). Most of the study participant assumption was Hemorrhoids 106 (86%).

Table 6. Relationship between patients assumption about their problem against confirmed clinical diagnosis among the patients presented with anorectal problem at OPD in selected hospitals of Addis Ababa Ethiopia June 2020.

Confirmed DX		Pt assumption about their problem		Total
		Boils	Hemorrhoid	
	Hemorrhoid	3	82	85
	Anal fissure	1	3	4
	Perianal fistula	0	3	3
	Ano rectal abscess	10	8	18
	Rectal prolapse	0	1	1
	Anorectal tumor	2	2	4
	Prurities ani	1	7	8
	total	17	106	123

3.8. Pattern of Patients Presenting with Anorectal Problem in Relation to Their Treatment Seeking Behavior

One hundred twenty-five (64%) of the respondents were stay at home before looking medical support. The main

reason for this delay were 43 (34.4%) I was busy, 22 (17.6) I felt shy and service not available, 16 (12.8%) traditional healer, 9 (7.2%) not have money and 3 (2.4%) because of long distance to reach to the hospital (figure 3).

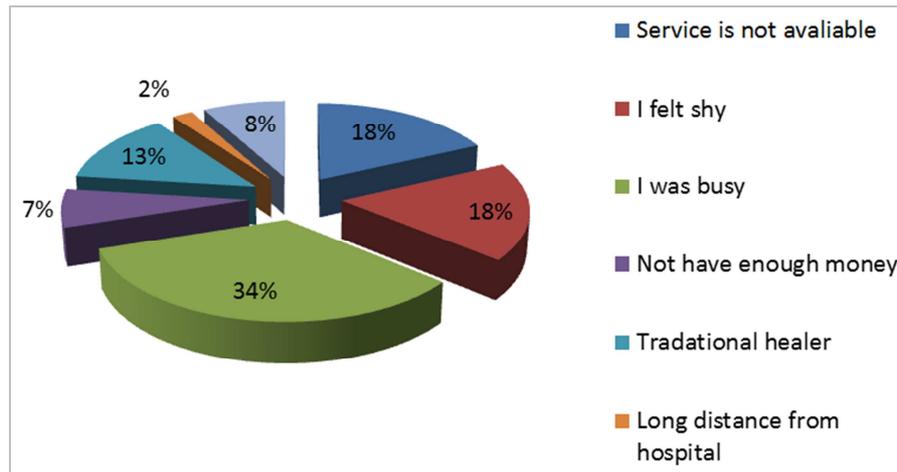


Figure 3. Reasons for delaying medical support of the perianal problem among the patients attending surgical OPD in selected hospitals of Addis Ababa Ethiopia June 2020.

4. Discussion

In our study among the study population of 1174 surgical patients attending the surgical departments selected 9 public hospitals of Addis Ababa about 195 (16.6%) were patients who have anorectal problems. This is almost 1/6th of the total surgical patients. Even if the study methodology is different, study on Pattern and Outcome of Colorectal and Perianal Surgery in Menelik II Referral Hospital, Addis Ababa, Ethiopia found that among the total emergency and elective surgical procedures, the share of perianal procedures was 19.9% followed by colorectal procedures 7.9%, which shows the significance of this disease entity in line with our study [7].

The mean age of patients with perianal condition in our study is 37.5yrs was lower compared to the study from Menelik II Referral Hospital (39.6yrs) & St. Paul's Hospital Millenium Medical College (49yrs) [7, 8]. In one retrospective study done in India in clinical study of 220 patients presenting to the OPDs and wards of the department of surgery of SRG Hospital and Medical College, most cases seen in the age group of 21-40 years (55.45%) [9]. Which has the same finding with our study was in line with studies from Bangladesh [1].

In this study female patients were less likely to develop ano-rectal problems than male patients (AOR = 0.67, 95% CI: 0.44, 0.99). The male predominance that was seen in our study in patients with anorectal problems was in line with studies from MenelikII Referral Hospital, India, Egypt, Turkey, United Kingdom and St. Paul Hosp. MMC [7-12]. Prospective hospital based observational study which was undertaken in Bangladesh showed predominance of male patients i.e 71.71% and gives the reason for this less percentage of females may be due to social and religious bindings and to attend male doctors [1]. This study have comparable finding with our study considering male dominance but the reason for this variation in our set up

needs further study.

In this study most of the patient (60.5%) has hemorrhoids. This predominance of hemmorhoids among perianal problems supported by the study done in Bangladish, India & Romania [1, 9, 13].

The pattern of Anorectal problems in this study showed that anal pain 73 (37.4%) followed by rectal bleeding & pus discharging from anus 34 (17.4%) each. In study done by Laurent Abramowitz in France, were: bleeding (32%), pain (31%), pruritus ani (22%), swelling (22%), oozing (14%), and anal discharge (14%) [14] In other study also find that, among the anorectal symptoms the most common was per rectal bleeding which was 63.59%, the second most common was anal pain, 56.16%, the third was constipation 54.34% [1].

Even though the study methodology is different, based on the study done at university of Ibadan Nigeria by Abolaji Azeze & Uche C. Isiuga Abanile in 2017, to know the perception and choice of therapy for hemorrhoid, about 61% of the respondents of choice of therapy during hemorrhoidal episode was herbal therapy. Even 30% was used both modern & traditional [15]. But in our study, even though it focuses in all perianal problems first place of visit was health institution i.e 142 (72.8%), which is contrary to our general perception. So this needs further study.

In one study done among adult patients visiting the surgical outpatient department in the University of Gondar Comprehensive Specialized Hospital, Northwest Ethiopia the prevalence of hemorrhoids was 26.5% [16]. But in our study, even though it focuses in all perianal problems with regard to the specific diagnosis of the patients with ano rectal problem more than half 118 (60.5%) of the problem were hemorrhoid. In other way if we compare patients with hemorrhoids (118) among all surgical patients including perianal problems (1174) the prevalence turned out to be 10.05% which is lower compared to the study done in Gonder [16]. So it is important to conduct this research specially as there is no record of community based research in Ethiopian context concerning this non-communicable disease entity (anorectal problem as a

whole) for one or another reason which mostly managed by traditional healers. It seems non research based general perception. But in one study done by Kebede Deribe Kassaye, Alemayehu Amberbir described that in Ethiopia up to 80% of the population uses traditional medicine due to the cultural acceptability of healers and local pharmacopeias, the relatively low cost of traditional medicine and difficult access to modern health facilities [5] which supports this general perception. The anorectal problems were identified as an increasing health concern in the tropics, despite the fact that there are no population-based reports on the prevalence of these disorders in a national or worldwide literature [17, 18].

5. Conclusion

The goal of this study was to provide base line data on the pattern and magnitude of anorectal problems based on the data obtained from public hospitals of the capital city of Ethiopia. The magnitude of Anorectal problems is high among surgical patients and sex, occupation and education status are significantly associated with Anorectal problems.

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