

Factors Influencing Quality of Bowel Preparation for Elective Colonoscopy at a Sub-Saharan Hospital

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Abstract

Introduction: The necessity to identify factors impacting the bowel preparation pre-colonoscopy arises from the fact that efficient colonoscopy requires adequate intestinal preparation, which has a significant impact on the diagnostic and therapeutic effectiveness of colonoscopy. We set out to determine the bowel preparation score and the factors associated with poor bowel preparation in our setting.

Methods: This was a prospective cross sectional study of 92 colonoscopies performed between November 2022 and February 2023. Data was collected on Patient demographics and indications included gastrointestinal hemorrhage, a change in bowel habits, and screening colonoscopies. This information was recorded using pretested questionnaires. Primary outcome was the Boston Bowel Preparation Scores (BBPS) and secondary outcome were the factors that affect how well the bowel is prepared for colonoscopy.

Results: The mean age in our study was 65 years, with majority being male at 60.9%. The most common indication for colonoscopy was lower GIT bleeding at 43.48% and our Boston bowel preparation score was ranked as adequate in 80.4% of cases with Sex, literacy and socioeconomic levels noted as the factors that influenced bowel preparation scores at Bivariate and multivariate analysis. Males were 1.8 times more likely to be adequately prepared while patients with a higher education level was 2.54 times more likely to be adequately prepared as were patients who ranked higher in the socioeconomic status at 2.8.

Conclusion and recommendations: Gender, literacy levels and socioeconomic levels are factors that influence bowel cleanliness pre-colonoscopy in our setting. There is need for efficient patient education strategies pre-colonoscopy to ensure improvement in the Boston bowel preparation scores and subsequently increase colonoscopy yield for patients.

Keywords: Colonoscopy • Arises • Therapeutic

Introduction

An adequate bowel preparation is defined as bowel preparation that clearly shows more than 90% of the colonic mucosa, or according to the Boston Bowel preparation score, An overall score of ≥ 6 points and a score of ≥ 2 in each part of the colon indicates that the bowel have been sufficiently prepared for colonoscopy. While an inadequate bowel preparation is the presence of solid or thick stool that cannot be removed, despite vigorous suctioning with a Boston bowel preparation score of less than six [1]

High BBPS measurements have been linked to quicker insertion and withdrawal times, fewer repeat colonoscopies, and more significant polyp discovery, according to studies [2]. Ideal/adequate bowel preparation safely clears the colon of fecal matter, rendering it amenable to thorough mucosal inspection during Colonoscopy.

The primary objective of bowel preparation for colonoscopy is to empty and cleanse the bowel in order to ensure sufficient visibility of the colonic mucosa. The bowel is only considered well prepared for colonoscopy when

the Endoscopist is confident enough that small, flat polyps are detectable and can propose a regular screening or monitoring period for a subsequent colonoscopy procedure [3].

The US Multi-Society Task Force on Colorectal Cancer and American Society of Gastrointestinal Endoscopy advises that bowel preparation is only sufficient if, following suctioning and cleaning the mucosa during colonoscopy, is regarded sufficient for the identification of lesions larger than 5 mm in size [3].

Adequate bowel preparation is a prerequisite for an effective Colonoscopy, and adequate bowel preparation prior to Colonoscopy can significantly affect the diagnostic and therapeutic yield of a Colonoscopy when performed for colon cancer screening, polyp surveillance, or evaluation of gastrointestinal symptoms.

Inadequate bowel preparation for Colonoscopy has adverse effects on polyp detection rates (reduced), associated with surgical complication rates and more colonoscopy cancellation rates, which places an unneeded and expensive strain on patient's costs and national health systems [4].

Inadequate or poor bowel preparation is experienced in about 25-30% of cases and can lead to incomplete Colonoscopy in 10% of the patients, inability to achieve Caecal intubation, inability to visualize mucosa effectively, plus it can lead to missed lesions in the colon with increased risk of procedure-related adverse events [5]

The effectiveness of a colonoscopy depends on the quality of the examination, and bowel preparation is an essential part of high-quality colonoscopies because only an optimal colonic cleansing allows the Colonoscopist to clearly view the entire colonic mucosa so as to identify polyps or other lesions [6]

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Some studies have shown that patients who had poorly prepared bowels pre-colonoscopy for their initial screening colonoscopy, adenomas and high-risk lesions were commonly found, indicating that the initial colonoscopy may have missed these lesions, 33.8% had at least one adenoma detected, and 18.0% had high-risk lesions detected [7]

According to GLOBOCAN 2020 colon cancer is the third-most common, and second-most fatal form of cancer. Around the world, 0.9 million deaths due to colon cancer are anticipated. The prevalence of colon and rectal cancer is increasing in middle- and low-income countries due to adoption of western practices, although it is still higher in the developed countries [8].

By 2030, it is expected that there would be over two million new instances of colon and rectal cancer and more than one million cancer fatalities globally as a result of aging, the rapid increase in the size of the world's population, and human economic development [9]

A research at Mulago National Referral Hospital discovered a significant rise in CRC cases at 9.3% among patients hospitalized in the lower GIT ward across all age categories, which was a rise from what previous statistics noted to be at 4.1%. Early detection of colorectal lesions through colonoscopy is vital in the management of colorectal cancer as there is a greater chance of curative management, which would improve survival in these patients [10]

St Francis Hospital Nsambya adopted recommendations from international bodies like ASGE, ESGE, and United States Multi-Society Task Force on Colorectal Cancer as guidelines for preparing their patients for Colonoscopy.

The literature about the various patient characteristics and bowel preparation pre-colonoscopy practices that are associated the quality of bowel preparation is scarce in Africa; As a result, it is essential to closely monitor and intervene for patients who are at risk for insufficient bowel preparation so that extra care can be taken with this particular population.

We set out to study and obtain information that can be used to design evidence-based revisions of our current bowel preparation protocols, tailored towards individual needs and patients' clinical status, plus define areas for continuous Quality improvement in our setting.

We set out to determine the demographic characteristics, BBPS and identify factors influencing bowel preparation adequacy among patients undergoing elective Colonoscopy at St Francis Hospital Nsambya.

Methods

This was a cross-sectional study carried out at St Francis Hospital Nsambya Gastrointestinal Endoscopy on Adults who were booked to undergo elective Colonoscopy.

We excluded patients with a prior colorectal surgery that altered the length of the bowel was excluded.

A consecutive sampling of patients as they came through the gastrointestinal endoscopy department to book for Colonoscopy and fit into the inclusion criteria.

Study procedure

Upon booking for the Colonoscopy by the principal investigator and research assistant, the patient assessment was done with history taking and examination, recording of the initial pre-procedural variables, informed consent for the procedure and study was obtained, we proceeded as below following the departments Bowel preparation for colonoscopy protocol.

All patients undergoing colonoscopy, either Hospital or home preparation had written advice on bowel preparation for Colonoscopy given, and written instructions for bowel preparation pre-colonoscopy from the Endoscopy department were given to them detailing how and when to start taking the preparation regimen.

Low fiber diet was advised by a trained nurse, and the patient was given a list of foods they can have like white bread, white rice, potatoes, eggs, dairy

products, chicken, fish, carrots, beetroot, cucumber, watermelon, Papaya started three days prior to colonoscopy date.

Laxative prescription three days prior to the procedure—Oral Bisacodyl 10mg nocte according to the guidelines of ESGE, ASGE 2019

Bowel Prep regimen administered in split dosing (10 hours between doses) with a Sodium sulfate, Magnesium Sulphate, and Potassium Sulphate based solution as per international guidelines—ESGE, ASGE, and ASG.

Hospital-based patients had a nurse to monitor the administration of the preparation agent starting at 9 pm (first dose) and the second dosing given after 6 am.

A clear liquid diet was advised overnight 8hr before the procedure.

The colonoscopy was performed by an Endoscopist under light sedation with propofol 1g and midazolam 10mg under anesthesiologist/anaesthetist's supervision

All procedures were performed using a Karl Storz colonoscope 2020 model

The Boston Bowel Preparation Scale score after aspiration of residual colonic contents was recorded below.

Colonoscopy indications (like Lower Gastrointestinal bleeding, Constipation, Abdominal pain, Change in bowel habits (Constipation or Diarrhea, Screening screening/surveillance colonoscopy)

Patient demographics (Age, Sex, Education Level, BMI), Patient comorbidities and Ambulatory Drugs took (DM, HTN). Home or Hospital Based bowel preparation and Runway time were recorded

Dependent variable was the boston bowel preparation score at colonoscopy (>6 Adequate, <6 Inadequate)

Data was collected using pretested questionnaires and administered by a PI or a trained research assistant.

Data were collected regarding the starting time and completion time of bowel preparation agent ingestion and participants' compliance with the instructions given for bowel preparation.

Also, the following variables were collected: Age, gender, Height and weight for Body Mass Index (BMI) calculation,

BMI was calculated by using the standard formula (weight (kg)/height (m)²) and recorded. Patients were designated overweight when BMI was ≥ 25 and obese when ≥ 30 .

Colonoscopy indications, co-morbidities (like diabetes, hypertension), ambulatory medications, constipation, Runway time (which is the interval from the time of last preparation agent ingestion to the start of Colonoscopy).

Boston bowel preparation scoring

Most validated scale for scoring quality of bowel preparation for colonoscopy, The BBPS is a standardized 9-point assessment scale for the colon.

BBPS Relies on the summation of three individual colonic segment scores (from the right, transverse and left colons) to indicate the degree of bowel visualization:

Colon segment score of 0 (mucosa not visible because to dense or thick, difficult-to-clear feces)

Colon segment score of 1 (Due to stains, leftover feces, and opaque liquid, some colon segment sections cannot be seen clearly)

Colon segment score of 2 (a little amount of residual stains, minute stool pieces, and opaque fluid, but the mucosa is clearly visible)

Colon segment score of 3 (The entire colon segment's mucosa is clearly visible).

According to the BBPS score definition, the right colon is defined as starting

from cecum to ascending colon, Transverse colon starting at the hepatic flexure to the splenic flexure, and the left colon starting at the descending colon to rectum

As shown in the Figure below (Figure 1).

BBPS		3	2	1	0
3=Excellent					
2=Good					
1=Poor					
0=Inadequate					
LC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BBPS=	<input type="checkbox"/>				

Figure 1. Showing BBPS scoring of the colon.

Results

Demographic characteristics

Baseline demographics of the 92 study participants show that the majority were males (n=56, 60.9%), with a median age of our participants was 52 years and an interquartile range of 38 to 65 years. In addition, most of the participants had completed a tertiary level of education (n=70, 76.9%). The average Body Mass Index was 25.3kg/m² with a standard deviation of 3.9. Males, on average, had a BMI of 24.8 kg/m² compared to females, 26.2 kg/m². Most of the participants were employed (n= 38, 41.8%) (Table 1).

Colonoscopy indication

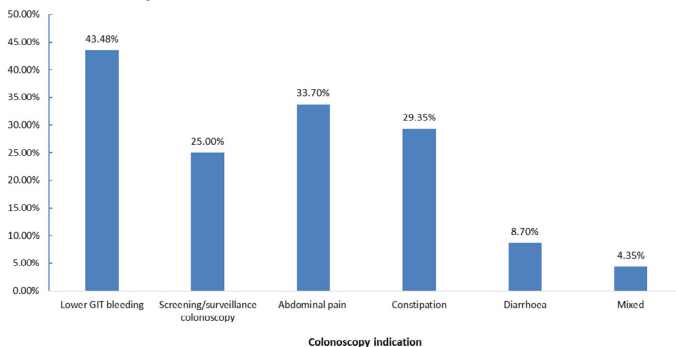


Figure 2. The most common indication for colonoscopy was lower GIT bleeding at 43.48%, followed by abdominal pain at 33.7% of the study participants. In comparison, mixed symptoms or a combination of symptoms contributed to only 4.35% of the indications for colonoscopy.

Site of bowel preparation

(Figure 3)

Boston bowel preparation scores among patients undergoing elective colonoscopy

The median score BBPS was 7, with an interquartile range of 6-8. Boston Bowel Preparation Score was ranked as adequate for most of the participants (n=74, 80.4%; 95% CI: 70.6-88.0) as indicated in Table 2 below, while inadequate bowel preparation was noted to be at 19.6% of the individuals (n=18, 95% CI: 12-29.1)

Factors influencing bowel preparation adequacy among patients undergoing elective colonoscopy at St Francis Hospital Nsambya

a) **Bivariate analysis:** At crude analysis, the factors that were independently associated with bowel preparation adequacy among patients undergoing elective Colonoscopy included sex, education

■ Home based preparation (patient allowed home preparation)
 ■ Hospital Based preparation (patient admitted overnight and prepared in hospital)

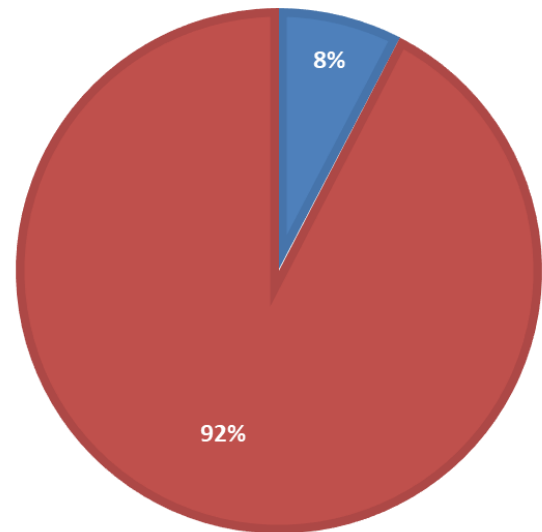


Figure 3. 92% of the study participants underwent hospital preparation, while only 8% requested home preparation. Among those who had home preparation, only one patient had an inadequate bowel preparation score, while the rest were well prepared.

Table 1. Demographic characteristics.

	Variable	Frequency	Percentage
Sex	Female	36	39.1%
	Male	56	60.9%
	None	2	2.2%
Education level	Primary	6	6.6%
	Secondary	13	14.3%
	Tertiary	70	76.9%
Employment status	Employed	38	41.8%
	Self-employed	30	33.0%
	Unemployed	23	25.3%
Age	Median (IQR)	52 (38 – 65)	-
Average BMI	Male	24.8 (3.5)	-
	Female	26.2 (4.3)	-

Demographic and Clinical Characteristics Continued

Colonoscopy indications	Lower GIT Bleeding	40	43.5%
	Screening/surveillance colonoscopy	23	25.0%
	Abdominal pain	31	33.7%
	Constipation	27	29.3%
	Diarrhoea	8	8.7%
	Mixed	4	4.3%
Comorbidities	Hypertension	28	30.4%
	Diabetes	13	14.1%
	Other comorbidities	8	8.6%
	No comorbidities	43	46.7%
Site of Bowel preparation	Home based preparation	7	7.6%
	Hospital Based preparation	85	92.4%
Oral medication and bisacodyl taken as prescribed	No	2	2.2%
	Yes	90	97.8%
Runway time/hrs	Mean (SD)	5.3 (1.8)	

level, employment status, Colonoscopy indications (Screening/ surveillance colonoscopy and Abdominal pain), Chronic Diarrhoea, Hypertension and Site of Bowel preparation (Table 3)

Table 2. Boston bowel preparation scores among patients undergoing elective colonoscopy.

Score Category	Frequency	Percentage	95% CI
Adequate	74	80.4%	70.6 – 88.0
Inadequate	18	19.6%	12.0 – 29.1
Median score (IQR)		7 (6 – 8)	

Table 3. Factors influencing bowel preparation adequacy among patients undergoing elective colonoscopy at crude analysis.

Variable	Adequate	Inadequate	Crude OR	95% CI	P-value	
Sex	Female	31 (41.9%)	5 (27.8%)	1.0	-	-
	Male	43 (58.1%)	13 (72.2%)	1.6	1.1-3.7	0.03
Education level	No education	2 (2.7%)	1 (5.6%)	1.0	-	-
	Primary	5 (6.8%)	1 (5.6%)	1.3	0.6-2.2	0.227
	Secondary	10 (13.5%)	4 (22.2%)	2.2	1.3-4.7	0.036
	Tertiary	57 (77.0%)	12 (66.7%)	2.4	1.5-5.3	0.022
Employment status	Unemployed	19 (26.0%)	4 (22.2%)	1.0	-	-
	Self-employed	21 (28.8%)	9 (50.0%)	1.1	0.5-2.8	0.361
	Employed	33 (45.2%)	5 (27.8%)	1.8	1.2-3.8	0.042
Age	Mean	51.9	54.1	0.7	0.4-1.6	0.413
BMI	Mean	25.1	26.2	0.6	0.4-1.8	0.318
Colonoscopy Indication						
Lower GIT Bleeding	Yes	32 (43.2%)	8 (44.4%)	1.0	-	-
	No	42 (56.8%)	10 (55.6%)	1.7	0.7-2.6	0.115
Screening/surveillance colonoscopy	Yes	21 (28.4%)	2 (11.1%)	1.0	-	-
	No	53 (71.6%)	16 (88.9%)	3.5	1.5-7.8	0.002
Abdominal pain	Yes	24 (32.4%)	7 (38.9%)	1.0	-	-
	No	50 (67.6%)	11 (61.1%)	2.2	1.6-4.3	0.035
Change in Bowel Habits (n=39)						
Constipation	Yes	19 (67.9%)	8 (72.7%)	1.0	-	-
	No	9 (32.1%)	3 (27.3%)	0.7	0.5-1.9	0.513
Diarrhoea	Yes	5 (17.9%)	3 (27.3%)	1.0	-	-
	No	23 (82.1%)	8 (72.7%)	3.7	2.7-6.8	0.002
Mixed	Yes	4 (14.3%)	0 (0.0%)	1.0	-	-
	No	24 (85.7%)	11 (100.0%)	-	-	-
Comorbidities and Ambulatory Drugs (n=31)						
Hypertension	Yes	21 (91.3%)	7 (87.5%)	1.0	-	-
	No	2 (8.7%)	1 (12.5%)	0.3	0.06-0.83	0.002
Diabetes	Yes	10 (43.5%)	3 (37.5%)	1.0	1.0	-
	No	13 (56.5%)	5 (62.5%)	1.3	0.7-2.3	0.276
Others	Yes	8 (34.8%)	0 (0.0%)	1.0	-	-
	No	15 (65.2%)	8 (100%)	-	-	-
Site of Bowel preparation	Home based preparation	6 (8.1%)	1 (5.6%)	1.0	-	-
	Hospital Based preparation	68 (91.9%)	17 (94.4%)	6.6	3.6-9.8	0.0002
Oral medication (bisacodyl) taken as prescribed	No	2 (2.7%)	0 (0.0%)	1.0	-	-
	Yes	72 (97.3%)	18 (100.0%)	-	-	-
Runway time/hrs	Mean	5.1	6.1	0.8	0.5-2.7	0.231

b) Adjusted analysis: At adjusted analysis, the factors that were independently associated with bowel preparation adequacy among patients undergoing elective Colonoscopy included sex, education level, Colonoscopy indications (Screening/surveillance colonoscopy and abdominal pain), diarrhea, hypertension and Site of Bowel preparation (Table 4).

The bowel was 1.8 times more likely to be adequately prepared in male patients than their female counterparts [AOR=1.8, 95% CI: 1.3-2.9, P=0.021]. Bowel Preparation was 2.5 times more likely to be adequate among patients with secondary education [AOR=2.5, 95% CI: 1.8-5.1, P=0.031] and 2.8 times more likely to be adequate among patients with tertiary education [AOR=2.8, 95% CI: 1.6-4.7, P=0.012] as compared to those with no education.

Bowel preparation was 3.9 times more likely to be adequate among patients with no Screening/surveillance colonoscopy [AOR=3.9, 95% CI: 2.1-6.8, P=0.001] and 1.9 times among those with no abdominal pain [AOR=1.9, 95% CI: 1.4-5.1, P=0.027]

Bowel preparation was 2.6 times more likely to be adequately prepared among patients with no diarrhea [AOR=2.6, 95% CI: 1.7-7.2, P=0.003] than those with diarrhoea. The Preparation was also 2.5 times more likely to be adequate among the patients with hypertension [AOR=2.5, 95% CI: 1.8-4.7, P=0.001].

Lastly, Bowel preparation was 5.8 times more likely to be adequate for hospital-based Preparation [AOR=5.8, 95% CI: 2.7-11.2, P<0.0001] as compared to home-based Preparation

Table 4. Factors influencing bowel preparation adequacy among patients undergoing elective colonoscopy at adjusted analysis.

Variable	Adequate	Inadequate	Adjusted OR	95% CI	P-value	
Sex	Female	31 (41.9%)	5 (27.8%)	1.0	-	-
	Male	43 (58.1%)	13 (72.2%)	1.8	1.3-2.9	0.021
Education level	No education	2 (2.7%)	1 (5.6%)	1.0	-	-
	Primary	5 (6.8%)	1 (5.6%)	1.1	0.5-2.9	0.184
	Secondary	10 (13.5%)	4 (22.2%)	2.5	1.8-5.1	0.031
	Tertiary	57 (77.0%)	12 (66.7%)	2.8	1.6-4.7	0.012
Employment status	Unemployed	19 (26.0%)	4 (22.2%)	1.0	-	-
	Self-employed	21 (28.8%)	9 (50.0%)	1.3	0.8-2.4	0.414
	Employed	33 (45.2%)	5 (27.8%)	1.6	0.9-2.9	0.065
Colonoscopy Indication						
Lower GIT Bleeding	Yes	32 (43.2%)	8 (44.4%)	1.0	-	-
	No	42 (56.8%)	10 (55.6%)	1.4	0.6-2.4	0.223
Screening/surveillance colonoscopy	Yes	21 (28.4%)	2 (11.1%)	1.0	-	-
	No	53 (71.6%)	16 (88.9%)	3.9	2.1-6.8	0.001
Abdominal pain	Yes	24 (32.4%)	7 (38.9%)	1.0	-	-
	No	50 (67.6%)	11 (61.1%)	1.9	1.4-5.1	0.027
Change in Bowel Habits						
Diarrhoea	Yes	5 (17.9%)	3 (27.3%)	1.0	-	-
	No	23 (82.1%)	8 (72.7%)	2.6	1.7-7.2	0.003
Comorbidities and Ambulatory Drugs (n=31)						
Hypertension	Yes	21 (91.3%)	7 (87.5%)	1.0	-	-
	No	2 (8.7%)	1 (12.5%)	0.4	0.08-0.72	0.001
Site of Bowel preparation	Home based preparation	6 (8.1%)	1 (5.6%)	1.0	-	-
	Hospital Based preparation	68 (91.9%)	17 (94.4%)	5.8	2.7-11.2	<0.0001

Discussion

Adequately prepared bowel pre-colonoscopy is crucial as it enhances neoplasia detection, decreases colonoscopy-related injuries, increases colonoscopy yield, and facilitates endoscopic interventions. We aimed to evaluate the current Boston bowel preparation scores among patients undergoing elective colonoscopy in our setting and to enumerate the factors associated with poor bowel preparation in our setting.

In this prospective study, the quality of bowel preparation, as shown by the BBPS scores, was found to be adequate at 80.4% and inadequate at 19.6%. The adequacy of bowel preparation at 80.4% is lower than the recommended minimum of 90% as per the ESGE/ASGE guidelines (2019/2015, respectively). Our findings were similar to a retrospective study done in Ethiopia by Kobiela J, et al. [11], whose findings showed that more than 70% of their patients were adequately prepared for colonoscopy however still below the recommendations.

Factors that were independently associated with bowel preparation adequacy in our study included sex, literacy levels, and socioeconomic status in bivariate analysis and multivariate analysis, findings that are in line with previous studies like one done in a similar setting [12] which showed similar factors influencing bowel preparation for colonoscopy.

We noted that males were 1.8 times more likely to have adequately prepared bowel as compared to their female counterparts. The gender difference in bowel preparation quality may be attributed to a possible difference in tolerability of the bowel preparation like a study done by which showed that, Male sex was an independent predictor of less inconvenience of the bowel preparation and better tolerability than females, hence possible difference in preparation compliance [13,14].

However, our findings contradict previous literature that had shown male gender as an independent risk factor for poorly prepared bowel pre-colonoscopy. A retrospective study done by Young-Jae Hwang, et al. in 2019 on 12,561 patients showed that females had better bowel preparation scores than males. Many other studies have also showed that males are at risk of

poor bowel preparation for colonoscopy. The aforementioned was linked to disparities in gender attitudes of medical care, a poor utilization of health checkups, and male patients' adherence to medical treatment [15,16]

Our study also noted that pre-colonoscopy bowel preparation was 2.5 and 2.8 times more likely to be adequate among patients with higher literacy levels, as compared to those with lower or no education at all. The above findings are similar to those found by, whose study found that Lower education level (OR=2.35, 95% CI=1.54-3.60) was independently associated with poor bowel preparation [17]. Meaning that literacy levels contributed to the adequacy of bowel preparation by enabling the study participants to read and better appreciate written instructions for bowel preparation. Our results are also in line with a retrospective case-control study on 286 patients done in West Africa [11] which showed that their contributory factors to inadequately prepared bowel were literacy levels with a p <0.01. However, there has yet to be a universal agreement on the best strategy for teaching patients about bowel preparation, and numerous patient education initiatives have so far been employed to raise the standard of bowel preparation pre-colonoscopy [18]

In our study too, a runway time of 5.1 hours was associated with adequate bowel preparation vs. 6.1 hours with poor bowel preparation. Results here are in line with a retrospective study on factors affecting bowel preparation adequacy and procedure time by Aziz I, et al. [19] on 3295 colonoscopies which showed that runway times of ≤ 6 hours had statistical significance (p<0.05) with adequately prepared bowel. The runway time is a variable that clinicians can change. Standard operating procedures stipulating a set time interval between the last dose and Colonoscopy commencement time might lower the inadequate bowel preparation rate.

This study also found that patients 51years or younger had a higher frequency of adequate bowel preparation. This reinforces existing literature, which lists both older age as risk factors for poor bowel preparation adequacy. Aging causes degeneration of the autonomic nervous system that controls enteric smooth muscles. Furthermore, older patients tend to be more immobile which puts them at risk of constipation hence liable to poor bowel preparation [20]

We noted that patient related factors like the indication for colonoscopy,

comorbidities did not yield statistically significant results in regards to their influence on quality of bowel preparation as noted in past studies done on the topic. This may be because our sample size was smaller as compared to past studies and may be because our study yielded a younger age group with a median age of 52 years with slightly more than half of the individuals having comorbidities. Indications like constipation, the elderly individuals (>60years) and those with co-morbidities like diabetes, Hypertension have been previously associated poorly prepared bowel for colonoscopy [19].

Our study showed that bowel preparation was 5.8 times more likely to be adequate for hospital-based Preparation [AOR=5.8, 95% CI: 2.7-11.2, P<0.0001] as compared to home-based Preparation. However, we could not equitably compare nor infer conclusions on the difference in quality of bowel preparation with this statistic considering the fact that only seven patients underwent home based preparation compared to eighty-five patients who had hospital based preparation [21-31].

Conclusion

We attained a lower than recommended Boston bowel preparation score in our study and the factors that influenced the scores were identified as gender, socioeconomic status and literacy levels. Hence there is need to develop measures of improving adherence to instructions, educational videos on top of verbal and written instructions, involvement of a responsible relative/attendant, and optimizing runway time in our setting.

Acknowledgement

None.

Conflict of Interest

None.

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