FUNCTIONAL GASTRO-INTESTINAL DISORDERS (FGIDs) AMONG ADULTS OF AGE 18-69 YEARS-A CROSS-SECTIONAL STUDY IN ERNAKULAM DISTRICT, KERALA.

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DECLARATION

I hereby declare that this dissertation titled "Functional Gastro-Intestinal Disorders [FGIDs] among adults of age 18-69 years - a cross-sectional study in Ernakulam district, Kerala.**"** is the bonafide record of my original research. It has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

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CERTIFICATE

Certified that the dissertation titled “Functional Gastro-Intestinal Disorders (FGIDs) among adults of age 18-69 years - a cross-sectional study in Ernakulam district, Kerala” is a record of the research work undertaken by Dr Karthika C M in partial fulfillment of the requirements for the award of the degree of “Master of Public Health” under my guidance and supervision.

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ABBREVIATIONS

DGBI	Disorders of Gut-Brain Interaction
EPS	Epigastric Pain Syndrome
FGID	Functional Gastrointestinal Disorder
FD	Functional Dyspepsia
FBD-U	Unspecified Functional Bowel Disorder
GI	Gastro-Intestinal
GERD	Gastro-Esophageal Reflex Disease
HRQOL	Health Related Quality Of Life
IBS	Irritable Bowel Syndrome
ODK	Open Data Kit
PDS	Postprandial Distress Syndrome
R4DQ	Rome IV Diagnostic Questionnaire

Abstract

Background : Functional Gastrointestinal Disorders (FGIDs) also known as Disorders of Gut Brain Interaction (DGBI) are conditions that emerge due to the intricate interaction between the gut and the brain. Little is known about the prevalence and patterns of FGIDs in our population. This study aimed to determine the prevalence of FGIDs and to describe its patterns in adults of age 18-69 years in Ernakulam district, Kerala.

Methodology : A house-to-house survey was conducted among 342 participants from urban and rural areas of one Taluk in Ernakulam district using multistage cluster sampling method. The Rome IV Diagnostic Questionnaire (R4DQ) for Adults, translated in Malayalam and deployed in ODK was administered for data collection. The Analysis was done using SPSS version 28. The prevalences were estimated using the scoring algorithms for R4DQ.

Results: The mean and SD of age of the participants was 48±13 years, 68.7% of participants were females. The prevalence of one or more conditions of FGID was 66.4% (95%CI:61.2%-71.2%). Among FGIDs, belching disorder showed the highest prevalence (22.5%), followed by functional abdominal bloating/distension (20.8%). The prevalence of FGID increased with a decreasing level of education (59.3% for graduates and above, and 83.7% for those with formal education, P =0.006). Functional constipation was high among participants with >=50 years (27.1% Vs 9.5%, P<0.001) while abdominal bloating/distension was low among them (14.1% Vs 27.3%, P=0.003) as compared to participants with <50 years. Belching disorder was reported by a significantly higher proportion of adults in rural than urban areas (15.4% vs 28.7%, $P = 0.007$).

Conclusion: The prevalence of FGID was high in the study population. Preventive measures play a pivotal role in managing FGIDs, primarily through lifestyle modifications and dietary practices. Moreover, early detection and prompt treatment of FGIDs are crucial to prevent the progression and onset of severe complications.

CHAPTER 1

INTRODUCTION

1.1 Background of the study

Throughout history, cultures have recognized the gut's importance beyond its physical functions, attributing emotions like embarrassment to its dysfunction. Stress impacts gut function, leading to symptoms and illness. Cultural beliefs shape symptom understanding, influencing whether they're seen as problematic. Societal values also play a role, in determining what's accepted or stigmatized. Historically, there's been a shift in how we view the mind and body. Early Greek philosophers emphasized the holistic connection between the two, while later western thinkers like Descartes advocated for a separation. This separation led to a focus on biomedical research, where the search for specific biological causes overshadowed the role of psychosocial factors. (Drossman, 2016)

However, by the late 20th century, there was a realization that illness is complex and involves interactions between biological, psychological, and social factors. This gave rise to the biopsychosocial model, which considers all these aspects when understanding health and disease. In recent years, advancements in neurogastroenterology have deepened our understanding of the brain-gut connection. This field explores how the brain and gut communicate and how this communication affects our health. (Drossman, 2016)

Overall, our understanding of gastrointestinal symptoms and disorders has evolved over time, shaped by cultural beliefs, societal values, and scientific advancements. Today, it's widely understood that addressing gut health requires a holistic approach, taking into account the complex connections between different aspects such as social ,biological, psychological factors. (Drossman, 2016)

1.2 Review of literature

1.2.1 Digestive System

The digestive system comprises a network of organs essential for breaking down and assimilating nutrients from the food we ingest. This system encompasses both the GI tract and the biliary system. The GI tract is a succession of hollow organs interconnected from the mouth to the anus. These organs help in digestion and absorption of nutrients. (*Cleveland Clinic*, 2024)

The GI tract or alimentary canal, and accessory organs, all work together to facilitate the processes of digestion and absorption. The GI tract is a tube-like structure that stretches from the mouth to the anus, spanning a length of approximately 30 feet. It maintains openings to the external environment at both ends. Within the GI tract, two distinct categories of organs are found: primary digestive organs and accessory digestive organs. (Ogobuiro et al., 2023)

Primary Digestive Organs are the organs where actual digestion takes place.

It includes:

- Mouth
- Pharynx
- Oesophagus
- Stomach
- Small intestine
- Large intestine.

Accessory digestive organs are those which help primary digestive organs in the process of digestion.

It includes:

- Teeth
- Tongue
- Salivary glands
- Exocrine part of pancreas
- Liver
- Gallbladder.

The upper GI tract includes the mouth, esophagus, abdomen, and the beginning portion of the small intestine (duodenum). The lower GI tract, which extends from the small intestine through the large intestine (colon) and concludes at the anus. (*Austin Gastroenterology*, 2019)

1.2.2 Gastroenterology

Gastroenterology deals with the comprehensive exploration of both the regular functioning and ailments associated with various digestive organs. These organs include the esophagus, stomach, small intestine, colon and rectum, pancreas, gallbladder, bile ducts, and liver. This field involves a thorough comprehension of the standard operations (physiology) of these gastrointestinal organs.

Gastroenterology addresses a spectrum of prevalent and consequential conditions, including colon polyps and cancer, hepatitis, gastroesophageal reflux (heartburn), peptic ulcer disease, colitis, gallbladder and biliary tract disorders, nutritional challenges, Irritable Bowel Syndrome (IBS), and pancreatitis. Essentially, the domain of Gastroenterology encompasses the study of all-natural operations and disorders pertaining to the digestive organs. (*American College of Gastroenterology*, 2023).

In the realm of gastroenterology, major clinical domains are distinguished as follows:

Functional Gastrointestinal Disorders (FGIDs): FGIDs manifest in the gastrointestinal tract even though no structural anomalies are present. Standard diagnostic tests like x-rays, endoscopies, and blood tests show no irregularities that can account for the observed symptoms. FGIDs can be resolved to a major extend through lifestyle changes.

Examples of FGIDs include heartburn, chest pain, IBS, constipation, and diarrhea. Some factors contributing to the development of FGIDs includes stress, low-fiber diet, sedentary lifestyle, lack of exercise, avoiding bowel movements, and pregnancy. (Drossman, 2016; Fikree and Byrne, 2021)

Structural Gastro-Intestinal Disorders: Structural Gastrointestinal Disorders arise from irregularities within the GI tract itself. These disorders result from physical abnormalities rather than just functional issues. Treatment of structural GI disorders typically involves surgical interventions to rectify or eliminate the underlying structural anomaly. Failure to address such conditions can lead to the exacerbation of symptoms and the potential emergence of further complications. (Drossman, 2016; Rojas, 2020)

In contrast to structural gastrointestinal disorders, FGIDs frequently respond positively to lifestyle modifications. For instance, managing constipation may entail incorporating regular physical activity and increasing fiber intake into one's diet (Whalen Clark, 2020).

Motility Disorders: a motility disorder refers to persistent or recurring dysmotility acknowledged as a distinct clinical condition, often linked to symptoms. It's important to note that dysmotility can show fluctuation during repeated physiological assessments. Conditions such as gastroparesis and intestinal pseudo-obstruction fall under this category.

These domains form the foundation for understanding and categorizing a range of gastroenterological conditions, contributing to effective diagnosis and treatment strategies. (Drossman, 2016)

1.2.3 Functional Gastrointestinal Disorders (FGIDs)

FGIDs are conditions that emerge due to the intricate interaction between the gut and the brain. These disorders encompass a range of issues characterized by GI symptoms that arises from various factors like disturbances in gut motility, heightened sensitivity of the visceral organs, changes in mucosal and immune functions, shifts in the composition of gut microbiota, and modifications in how the central nervous system processes information. FGIDs are recognized by the persistence and repetition of GI symptoms, arising due to the abnormal operation of the GI tract. They do not stem from structural (such as tumors or masses) or biochemical abnormalities. As a result, many routine medical tests aimed at diagnosing FGIDs—such as x-rays, CT scans, blood tests, and endoscopic exams—often yield essentially normal/negative (non-disease) findings. (Drossman, 2016)

Definition

“A variable combination of chronic or recurrent gastrointestinal symptoms not explained by structural or biochemical abnormalities. This may include syndromes attributed to the oesophagus, stomach, biliary tree, small or large intestine or anus.” (Thomson, 1989)

FGIDs are characterized by a collection of specific symptoms that tend to occur together, forming a syndrome. Unlike tests that can spot problems in the body's structure, such as x-rays, which don't show much for FGIDs, their diagnosis is based on the symptoms a person experiences. Experts from all around the world have worked together for years to understand FGIDs & created a set of guidelines called the 'Rome Criteria' that help diagnose these disorders based on symptoms and other factors. (Drossman, 2016)

1.2.4 Rome categorization of FGIDs-brief history

In 1988, an assembly of global experts convened in Rome to deliberate on FGIDs. They aimed to create a classification system based on symptoms, emphasizing that patients experience symptoms even in the absence of chemical, radiological, or physiological abnormalities. The outcome of their discussions led to the formulation of the Rome criteria in 1992, later recognized as Rome I, contributing significantly to the medical community's understanding of FGIDs. Some time after the initial Rome I criteria were established, the Rome committee reconvened to make revisions. These changes were informed by feedback from clinicians, investigators, regulatory agencies, and new insights gathered from scientific literature. The updated criteria, known as Rome II, were subsequently published in 1999. The introduction of the Rome III criteria in 2006 marked a pivotal moment. As knowledge progressed and a desire to enhance the clinical utility of the Rome criteria emerged, substantial changes were implemented when the fourth iteration, Rome IV, was released in 2016. (Lacy and Patel, 2017)

The Rome foundation's categorization of FGIDs is primarily grounded in symptoms rather than physiological criteria. The division of these disorders into anatomical regions (like oesophageal, gastroduodenal, bowel, biliary, and anorectal) is based on the assumption that there are common features underlying diagnosis and management that correspond to these specific organ areas. As a result, functional heartburn is associated with issues concerning the oesophagus, while fecal incontinence pertains to matters of the anorectum, and disorders involving the sphincter of oddi are connected to the biliary system. FGIDs are alternatively referred to as disorders involving the interaction between the gut and the brain (gut brain interaction). It's important to know that these are not psychiatric disorders, even though stress and psychological challenges can exacerbate FGIDs. (Drossman, 2016)

Over 24 distinct FGIDs have been recognized, affecting different segments of the GI tract, such as the oesophagus, stomach, bile duct, and intestines. Among these, IBS stands as the most prevalent and extensively studied FGID. IBS involves abdominal pain coupled with changes in bowel patterns, including diarrhoea, constipation, or oscillation between the two. Additional commonly encountered FGIDs encompass functional dyspepsia (characterized by upper abdominal pain, sensations of fullness, bloating, or nausea), functional vomiting, functional abdominal pain, and functional constipation or diarrhoea. (Drossman, 2016)

1.2.5 Different FGIDs based on Rome IVcriteria

Classification of all FGIDs in adults according to ROME IV diagnostic criteria is mentioned in the annexure IX Some of the major types of FGIDs and their charectristics based on Rome IV criteria are listed below.

1.2.5.1 Functional heartburn

According to the Rome IV criteria, functional heartburn is characterized by a burning discomfort or pain behind the breastbone. Patients experiencing this condition do not find relief from symptoms even with optimal antisecretory therapy. Importantly, there should be no evidence of Gastro-Esophageal Reflux Disease (GERD), eosinophilic esophagitis, major oesophageal motor disorders (such as achalasia, esophagogastric junction outflow obstruction, distal oesophageal spasm, jackhammer oesophagus), or structural abnormalities. These criteria must be met consistently for the preceding 3 months, with symptoms persisting for at least six months before diagnosis and occurring with a frequency of at least twice a week. (Galmiche et al., 2006)

Early studies thought that about half of people with heartburn had visible damage in their esophagus. However, later studies found that up to 70 percent of these people actually had normal results on the endoscopy. Initially, they were all thought to have a condition

called nonerosive reflux disease. But then, it was discovered that among those with heartburn and normal endoscopy results, there's actually a diverse group. To understand this better, doctors used a test called esophageal pH monitoring, which measures acid levels. They found that about half of the patients with normal endoscopy results also had normal acid levels in their esophagus during this test. Among those with normal acid levels, 40 percent experienced what's called reflux hypersensitivity, meaning their symptoms matched with reflux events. The remaining 60 percent had what's termed functional heartburn. This means they had heartburn without clear evidence of acid reflux or esophageal damage. So, functional heartburn makes up about 21 percent of all untreated patients with heartburn. This suggests that while some cases of heartburn may be due to acid reflux or damage to the esophagus, a significant portion might be caused by other factors like hypersensitivity or functional issues in the esophagus.(Yamasaki et al., 2017)

When considering the demographic and clinical charectristics, it is more prevalent in women than in men, and it commonly occurs in middle age. Individuals with functional heartburn often have a prolonged history of experiencing heartburn. The severity and frequency of symptoms are comparable to those observed in various GERD phenotypes. Additionally, patients with functional heartburn may present with concomitant functional gastrointestinal disorders, such as functional chest pain, functional dyspepsia, or IBS. There is a potential for overlap with GERD. Health-related quality of life is akin to that of other GERD phenotypes. Psychological comorbidities, including depression, anxiety, and somatization, may also be present in individuals with functional heartburn. (Fass et al., 2019; Yamasaki et al., 2017)

1.2.5.2 Reflex hypersensitivity

Reflux hypersensitivity is when the tube that connects the throat to the stomach (esophagus) becomes more sensitive, causing people to feel more pain or discomfort than usual. This sensitivity happens because of changes in the nerves and how the brain processes signals.

Typically, when contents from the stomach, such as acid, reflux back into the esophagus, it can result in a burning sensation commonly referred to as heartburn. In reflux hypersensitivity, individuals not only feel this discomfort but even non-painful things can be perceived as painful. It's like the body's alarm system becomes too sensitive.

This heightened sensitivity can happen with both acidic and non-acidic reflux. Even everyday levels of stomach acid, which typically wouldn't cause much discomfort, can feel more intense for people with reflux hypersensitivity. Stress, psychological factors, and poor sleep can contribute to this increased sensitivity. (Yamasaki and Fass, 2017)

Reflux hypersensitivity and functional heartburn have similar symptoms, and it's challenging to tell them apart based on how often, how severe, or how long someone experiences heartburn. These conditions can also share symptoms with other digestive issues and can be linked with psychological factors like anxiety. (Yamasaki and Fass, 2017)

1.2.5.3 Functional dyspepsia (FD)

According to the Rome III classification, FD is characterized by bothersome symptoms like postprandial fullness, early satiety, epigastralgia, and epigastric burning. It involves heightened sensitivity in the stomach, issues with accommodating food, and abnormal stomach movements, and will affects one’s quality of life. (Galmiche et al., 2006)

FD patients are categorized into two groups: those with epigastric pain syndrome (EPS) and those with postprandial distress syndrome (PDS), each requiring different treatments.

The severity of symptoms in an overlap of PDS and EPS is higher than in FD patients alone, with increased heartburn and hunger. FD, especially EPS, has been reported to overlap with other diseases like chronic pancreatitis, making the use of certain medications controversial. (Tack et al., 2006)

Understanding the specific characteristics of FD subtypes and their associations with other conditions is essential for developing targeted and effective treatment plans for FD. (Futagami et al., 2018)

1.2.5.4 Functional constipation

According to the Rome IV criteria, it is diagnosed by symptoms like straining during defecation, hard stools, incomplete evacuation, and infrequent stool passage. (*Rome Foundation*, 2021). Chronic constipation affects 10-15% of the population. One systematic review and meta-analysis shed light on the connection between haemorrhoids and functional constipation, revealing a significant association between the two conditions. Patients with haemorrhoids demonstrated a higher prevalence of functional constipation compared to controls, while those with constipation also exhibited a notably higher prevalence of haemorrhoids. Furthermore, individuals with haemorrhoids commonly experience elevated resting anal pressures, difficulties during defecation, and a higher incidence of functional evacuation disorder and dyssynergic defecation.The study underscores the importance of addressing underlying functional constipation, and also highlights the need for standardized and validated diagnostic tools in future research. Addressing constipation and coordination issues during bowel movements is crucial to alleviate symptoms and reduce the likelihood of haemorrhoid recurrence, as current treatments may have limited efficacy. (Kalkdijk et al., 2022)

1.2.5.5 Belching

Belching, the audible release of air from the oesophagus or stomach into the pharynx, is a common occurrence. When it becomes excessive and disruptive, it is considered a disorder, known as "excessive belching," as per Rome IV criteria. (*Rome Foundation*, 2021). This condition, disrupting daily activities and happening more than 3 days per week, can affect both healthy individuals and those with conditions like GERD, functional dyspepsia, gastroparesis, pregnancy, or psychological symptoms such as anxiety. A comprehensive global study involving over 73,000 adults revealed that the prevalence of Rome IV belching disorders in the population was found to be 1 percent. There are two main types of belching based on the source of the expelled gas: gastric belch and supragastric belch. Supragastric belching from the oesophagus and gastric belching from the stomach. Supragastric belching is observed in up to 3.4 percent of individuals experiencing upper gastrointestinal symptoms, and it is often linked to anxiety. (Kessing et al., 2014; Moshiree et al., 2023; Popa et al., 2022)

Belching, a common response to stomach discomfort, often overlaps with other conditions like GERD and FD. Studies suggest that belching may be triggered by excessive gas swallowing, leading to symptoms like acid reflux and heartburn. Psychological factors, such as stress and mood changes, play a crucial role in belching. Also it was reported that psychosocial factors, including anxiety and depression, were prevalent in belch patients. (Sun et al., 2015)

1.2.5.6 Abdominal Bloating and Distention

According to the Rome IV criteria, functional bloating and distention are digestive disorders with recurring symptoms. These symptoms include feeling full or experiencing pressure in the abdomen, or a noticeable increase in abdominal size. To meet the criteria,

these symptoms should occur at least once a week, be present for three months, have started six months ago, and not be mainly associated with pain or changes in bowel habits (*Rome Foundation*, 2021).

In a comprehensive worldwide study involving a large population, the occurrence of functional bloating and distention was identified at a considerable rate, reaching up to 3.5 percent. Further analysis revealed a slightly higher prevalence in women at 4.6 percent and in men at 2.4 percent. Interestingly, when these symptoms were linked with other DGBIs like IBS, constipation, and functional dyspepsia (FD), the prevalence of bloating and distention surpassed 50 percent (Kessing et al., 2014; Moshiree et al., 2023)

Belching, abdominal bloating, and distention are common symptoms that, when frequent and bothersome, can be categorized as DGBIs. Understanding these symptoms is challenging, but their origins appear linked to the dysregulation of the brain-gut axis. Treatment often involves a holistic approach addressing diet, gut movement, visceral sensitivity, and psychosocial factors. However, limited well-designed studies make evidence-based recommendations difficult, necessitating reliance on clinical experience and data from related conditions. A multidisciplinary strategy involving gastroenterologists, dietitians, behavioural therapists, and motility experts is ideal, but may not be universally available. Careful attention to symptoms, exams, and targeted diagnostic studies can guide appropriate evaluations. Adopting a patient-centred care model with effective communication enhances treatment outcomes, satisfaction, and reduces unnecessary testing and healthcare costs. (Mari et al., 2019; Tuteja et al., 2008; Wilkinson et al., 2019)

1.2.5.7 Irritable Bowel Syndrome (IBS)

Based on the Rome criteria, IBS is diagnosed when an individual experiences recurrent abdominal pain occurring at least once a week over the past three months. This pain must be associated with two or more of the following factors: changes in stool frequency, changes in stool appearance, or a correlation with bowel movements. These criteria need to persist for at least three months, with symptoms starting at least six months before diagnosis. (*Rome Foundation*, 2021)

IBS manifests as a functional bowel disorder under FGIDs, presenting abdominal pain or discomfort associated with defecation or alterations in bowel habits, accompanied by indicators of disrupted defecation. (Longstreth et al., 2006) IBS stands as a persistent and incapacitating FGID impacting 9-23 percent of the global population. Notably, women face a higher likelihood, being two to four times more prone to IBS than men. Despite its widespread occurrence, the intricacies of IBS's pathophysiology remain elusive and appear to be multifaceted. Various pathogenic factors, possibly in different combinations and not universally present in every patient, are deemed significant. The specific trigger or the convergence of these conditions that set off IBS initiation remains unclear. (Radovanovic-Dinic et al., 2018)

The classification of IBS is based on the appearance of stool, leading to four subtypes: IBS with diarrhea, IBS with constipation, IBS with neither diarrhea nor constipation, and the subtype characterized by mixed or alternating patterns. Notably, in some cases, IBS can develop following an infection, as post-infective syndrome called the "post-infectious IBS". (Longstreth et al., 2006; Saha, 2014)

From a comprehensive systematic review and meta-analysis involving the assessment of 390 studies, the global prevalence of IBS was determined. The combined prevalence, based on pooled data, was 11.2 percent (95% CI, 9.8%–12.8%). Notably, prevalences

varied across countries, ranging from 1.1 percent to 45 percent, influenced by the specific criteria used to define IBS. The majority of the studies were conducted in Northern Europe and Southeast Asia. Gender differences were observed, with a higher odds in women compared to men (OR, 1.67; 95% CI, 1.53–1.82), and Individuals aged over 50 years exhibit a lower prevalence compared to those under 50. (OR, 0.75; 95% CI, 0.62–0.92). No significant impact of socioeconomic status was identified. (Lovell and Ford, 2012)

1.2.5.8 Unspecified functional bowel disorder (FBD-U)

Based on study on worldwide prevalence of FGID by Rome foundation it was found that FBD-U was the most prevalent bowel disorder among FGIDs. (Sperber et al., 2021) According to rome criteria are diagnosed after ruling out other functional bowel disorders and organic causes for bowel symptoms. It encompasses patients with bowel symptoms that don't meet criteria for other disorders.There are no much studies done to capture its epidemiology or its cause. Even there can be different subgroups within this which needs to be further researched on. (Ballou et al., 2023)

1.2.6 Burden of FGIDs

FGIDs/DGBIs are highly prevalent globally, affecting approximately 40percent of the population. In a comprehensive multinational study, it was discovered that over 40percent of individuals globally are affected by FGIDs, conditions that have a significant impact on both their quality of life and healthcare utilization. It is more common in women than men and this increases with age. (Sperber et al., 2021) Around 25 million individuals in the United States experience functional gastrointestinal disorders. Among those with symptoms of FGID, an estimated 50-80 percent do not seek medical consultation, although they might resort to over-the-counter medications. These individuals often face notably increased job absenteeism and impaired functionality compared to those without such symptoms. it's been documented that irritable bowel syndrome (IBS) ranks as the second most prevalent reason for work or school absenteeism, following the common cold. (Bureau, 2018; Frändemark et al., 2018).

In a large scale longitudinal study done in India with adults aged 45+, to determine the prevalence of self-reported gastrointestinal diseases yielded an overall prevalence of 18 percent and the GI problems increased with increasing age. (Dawoodi et al., 2022)

Another community based study done in rural India, (3 villages of Uttarpradesh) in order to find out the prevalence and risk factors of FGIDs in 18+ year old individuals showed a prevalence of 21.7 percent with the possible risk factors of vegetarian diet, tobacco chewing, aerated soft drinks, tea/coffee, sleep disturbances and anxiety. (Ghoshal and Singh, 2017) A survey of Inflammatory bowel diseases, FGID involving lower GI tract done in India yields a high prevalence for ulcerative colitis with 64.3 percent and chrons disease with 35.3 percent. (Makharia et al., 2012)

Two community based studies done in southern India, (Kerala & Tamilnadu) in adults of age 18+ , to find out the prevalence of gastroesophageal reflux disease (GERD) which

is a problem of upper GI tract with symptoms of heartburn and regurgitation occurring at least twice in a week also yielded a high prevalence of 22.2 percent in Trivandrum district of Kerala and 8.2percent in Vellore district ,Tamilnadu, with more prevalence in urban residents, women, older and obese individuals. (Chowdhury et al., 2019; Wang et al., 2016)

Community based studies on FGIDs done in Kerala are much scanty, a multi-centre prospective hospital-based survey of inflammatory bowel disease in adults aged 18+ (with more than 2000cases) done in 2013 to 2015 to determine the prevalence of irritable bowel diseases which included ulcerative colitis & chron's disease showed a high prevalence similar to that in USA. A district wise distribution of IBD cases was also determined with highest prevalence in Ernakulam district (with 16 IBD cases per 100,000 population) followed by Thrissur (13 per 100,000) and least cases reported to Kasargod (1case per 100,000), Trivandrum and Wayanad districts (with 2cases per 100,000). (Philip et al., 2018)

1.2.7 Factors associated with FGIDs

1.2.7.1 Sociodemographic and lifestyle factors and FGIDs

According to a study conducted among college students in northern India to explore the prevalence, overlap, and risk factors of FGIDs using the ROME IV Diagnostic Questionnaire (R4DQ), it was observed that females exhibit a higher prevalence of FGIDs. Factors such as consuming a non-vegetarian diet more than once a day, indulging in junk food or fast food more than once daily, and consuming tea or coffee more than two cups a day were independently linked to FGIDs. Additionally, a lack of physical activity, experiences of anxiety, and difficulties with insomnia also demonstrated associations with FGIDs. (Goyal et al., 2021)

In a community-based study comprising 6174 participants conducted in the Vellore district of Tamil Nadu to determine the prevalence of GERD and its correlation with factors such as age, gender, anthropometric measures, and habits like tobacco, alcohol, meat, and milk consumption, the findings revealed specific associations. GERD was linked with female gender, residing in urban areas, age over 30, a higher BMI of ≥ 25, and infrequent milk consumption. No significant associations were observed with alcohol, smoking, or meat intake. (Chowdhury et al., 2019)

In a similar study conducted in Trivandrum, Kerala, focusing on GERD, it was observed that the prevalence of the disease was higher in the older age group and among men. The study further identified associations with individuals who were overweight or obese, resided in urban environments, had lower educational levels, and engaged in the habit of chewing pan masala. (Wang et al., 2016)

1.2.7.2 FGID and Diabetes Mellitus

Gastrointestinal symptoms affect approximately 76 percent of individuals with diabetes mellitus (DM). These symptoms encompass conditions such as gastroparesis, abdominal pain, diarrhea, fecal incontinence, and constipation. (Feldman and Schiller, 1983; Reddy et al., 2006). Diabetes can induce motility disorders, resulting in a form of diarrhea commonly referred to as diabetic diarrhea, with a prevalence ranging from eight percent to 22 percent or constipation or altered bowel movements. (Feldman and Schiller, 1983; Valdovinos et al., 1993)

1.2.7.3 FGID and Allergic food reactions

An adverse reaction to food signifies an abnormal physical response to food ingestion, often used interchangeably with the term food allergy. It can be broadly categorized into immune-mediated and non-immune-mediated reactions. Notably, approximately 60 percent of patients with FGIDs report symptoms related to food. (Onyimba et al., 2021)

The majority of food allergies, accounting for 90percent, are linked to eight common foods: milk, eggs, peanuts, tree nuts, fish, shellfish, wheat, and soy. (Nwaru et al., 2014; Onyimba et al., 2021) Studies suggest that a heightened suspicion for food allergy may be warranted in patients diagnosed with eosinophilic gastrointestinal disorders (DeBrosse and Rothenberg, 2008) or inflammatory bowel disease. (Onyimba et al., 2021; Sunkara et al., 2019)

1.2.7.4 FGID and Analgesic use

In a recent cross-sectional study conducted at Amala Institute of Medical Sciences in South India, researchers aimed to shed light on the prevalence of GI risk factors among patients using analgesics. The study involved 123 adult patients admitted to the hospital between June 2018 and October 2018. The most common indication for analgesic use was musculoskeletal diseases, followed by cardiovascular diseases.

Among the identified GI risk factors, a history of GI symptoms was the most prevalent, affecting 55.28 percent of patients, followed by the use of anticoagulants and anti-platelet agents (52.03%), and the presence of comorbid diseases (48.78%). The study utilized a tool called GI score to assess GI risk, and results indicated that 47.15 percent of patients belonged to high or very high-risk categories for GI complications.

Significant associations were found between high or very high GI risk and age over 65 years, poor health status, history of GI symptoms, and history of GI bleed or ulcer. The study emphasizes the importance of physicians being mindful of individual patient GI risk factors when prescribing analgesics to prevent serious complications. The findings contribute to the understanding of GI risks associated with analgesic use in the South Indian population. (Arunima, 2019)

1.2.8 Health-related quality of life (HRQOL) among patients with FGID

Numerous studies have revealed a significant reduction in HRQOL and overall well-being in patients with FGIDs, especially those with moderate to severe symptoms in referral settings (Drossman, 2016). Diorders like FD and IBS have been shown to impact HRQOL more significantly compared to the general healthy population and individuals with other chronic conditions like GERD and asthma. The impaired HRQOL is particularly evident in patients with moderate to severe disease seeking referrals. Additionally, psychosocial factors and symptoms related to visceral perception and chronic stress play a crucial role in HRQOL in patients with both organic and functional gastrointestinal disorders. Researches provides support for a conceptual framework that links early adverse life events to subsequent psychosocial experiences, physiological functioning, and vulnerability to the development of FGIDs. This connection significantly influences how symptoms are perceived, the manifestation of illness behaviour, overall outcomes, and HRQOL. (Chang, 2004)

Simren et al. examined gender disparities in the quality of life among 209 hospital outpatients and 134 primary care patients with IBS. Their findings revealed that women with IBS experienced a diminished quality of life, reporting increased fatigue, depressed mood, reduced positive well-being and self-control, and elevated levels of anxiety in comparison to men with IBS. (Chang and Heitkemper, 2002; Simrén et al., 2001)

The research based on the overarching hypothesis that female patients with IBS exhibit distinctions from their male counterparts in symptoms associated with both the viscera and musculoskeletal system, and these variances are linked to the menstrual cycle. Despite comparable levels of IBS severity, abdominal pain, psychological symptoms, and illness impact, female patients report higher intensities of various intestinal and non-intestinal sensory symptoms. The observed variations in sensitivity to nonpainful visceral

sensations, medications, and food may signify altered sensory processes, autonomic responses, and/or cognitive hypervigilance. (Chang and Heitkemper, 2002; Lee et al., 2001)

1.3 Rationale

Proposing a study to find the prevalence of FGIDs in Ernakulam district, Kerala is due to the lack of comprehensive and community-based prevalence data specific to the region and age. By conducting such a study, it can contribute to filling the knowledge gap, informing healthcare policies, and promoting better understanding and management of FGIDs among the population in Kerala.

1.4 Objectives

Primary Objective

To determine the prevalence of FGIDs in adults of age 18-69 years in Ernakulam district, Kerala

Secondary Objective

To describe the pattern of different FGIDs in adults of age 18-69 years in Ernakulam district, Kerala

CHAPTER 2

METHODOLOGY

2.1 Study design

Community-based Cross- sectional survey.

2.2 Study setting

As per Provisional population figures of the 2011 Census, Ernakulam had a population of 3,282,388 of which 1,619,557 were male and 1,662,831 were female, and a Sex Ratio of 1027 females per 1000 male. The district has a density of 1,072 people per sq. km and administers 3,063 square kilometers of area. Of the total population, 68.07percent live in urban regions, and 31.93percent live in rural areas. Of a total of 2,234,363 people living in urban areas, 1,101,047 are males and 1,133,316 are females. Sex Ratio in the urban region of Ernakulam district is 1029 females per 1000 males. In total of 1,048025 people living in rural areas, 518510 are male and 529515 are female and the sex ratio is 1021 females per 1000 males. (GOI, 2018)

The district has seven taluks with one Municipal Corporation, 13 Municipalities, 14 Block Panchayats and 82 Grama Panchayats. This study was done after randomly selecting ten wards from two panchayath and one municipality each in a block of a taluk in Ernakulam district. (GOI, 2024)

2.3 Study population

Participants aged 18-69 years residing in Ernakulam district were the target population.

Inclusion criteria- people aged between 18-69 who are willing to participate

Exclusion criteria- includes pregnant women, people with serious disabilities like cognitive impairments, people who are bedridden, individuals facing challenges in effective communication due tolanguage barriers or communication disorders, and those who refuse to participate in the proposed study.

2.4 Sample size estimation

With anticipated prevalence (p) of 18 percent (Dawoodi et al., 2022), margin of error (d) five percent for the 95 percent Confidence Interval, and considering a design effect of 1.5, sample size was estimated as 341 using open epi version 3.01 Updated 2013/04/06.

2.5 Sample selection procedure

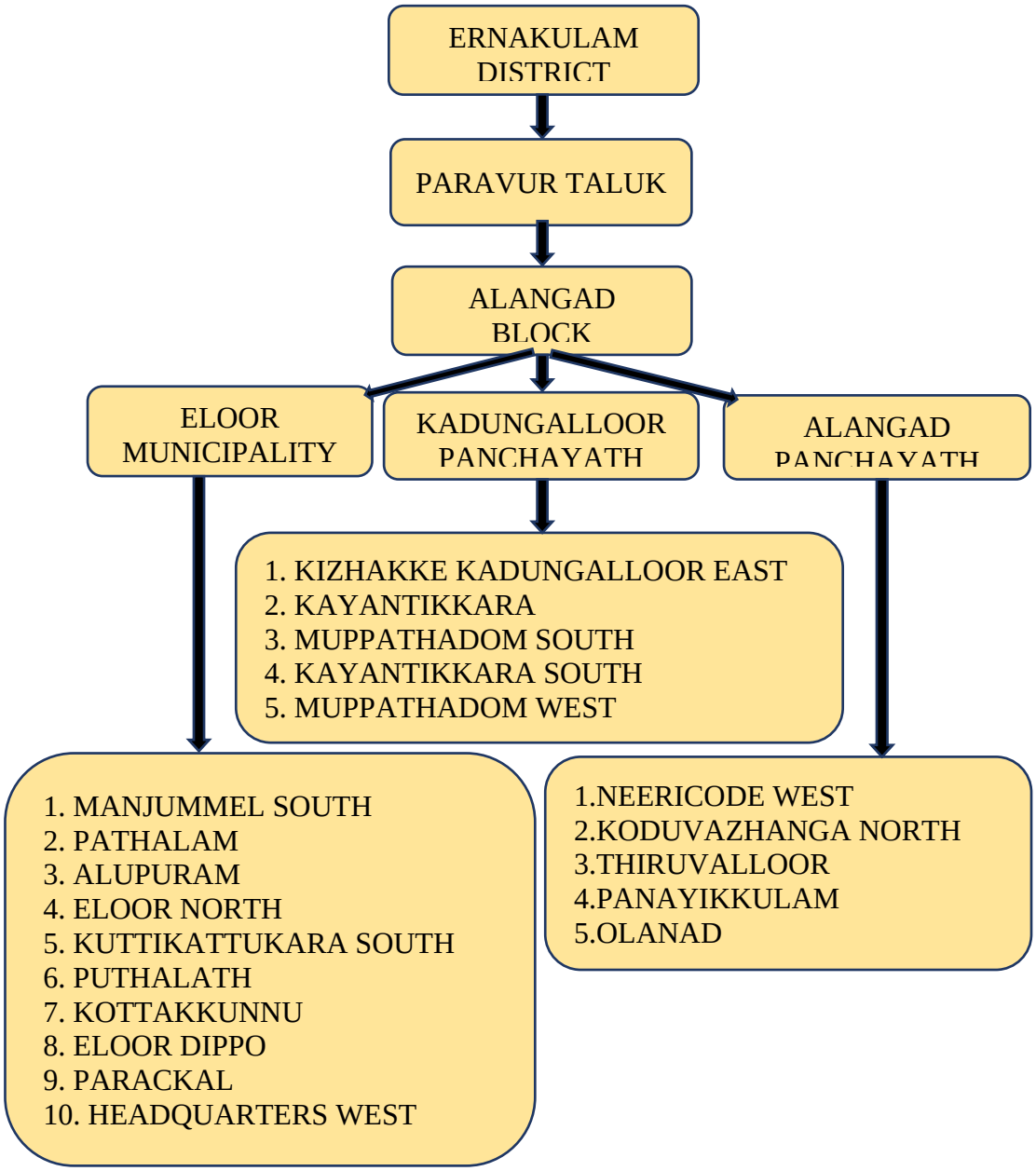

Figure 2.1 Sampling strategy for selecting the study participants

The sampling strategy is by multi-stage cluster sampling.The study has been completed with 342 participants selected from 20 wards of a block in Ernakulam district. From two Grama panchayaths, 10 wards were chosen (5 each), and 10 wards were selected from the municipality. Within each ward, 17 participants were selected, resulting in a total of 171 participants from rural areas and 171 participants from the municipality.

From Alangad Block of Paravur taluk in Ernakulam district, Kadungalloor panchayath, Alangad panchayath and Eloor Municipality were selected. 10 wards from Eloor Municipality and five wards each from two Grama panchayaths were selected randomly, ensuring equal representation from rural and urban populations of 171 participants each.

2.6 Data collection process

The data was collected during January and February, 2024. The survey was conducted in a house-to-house manner after identifying ward boundaries of selected wards. Prior permissions were taken from the municipality and two panchayaths inorder to conduct the study. The households were selected by randomly identifying a location from each ward, then finding a suitable direction and visiting the households until 17 households with participants aged 18-69 were identified. One person was interviewed from each household, totaling a sample size of 342. If there were more than one eligible participant in the same household within the proposed age group at that time, one participant was selected based on the lottery method.

2.7 Data collection instruments

The research commenced with the implementation of a well-defined procedure, starting with the acquisition of the standard tool for diagnosing FGID, namely the ROME IV diagnostic questionnaire (R4DQ). Upon request, the R4DQ was obtained from the ROME Foundation, following the signing of the license agreement with the foundation.

The structured interview schedule comprised four sections:

Section 1 consisted of inquiries about sociodemographic details, which include age, education, sex, and occupation details

Section 2 includes questions regarding the lifestyle factors , like consumption of tea/coffee, carbonated drinks, usage of alcohol, smoke and smoke less tobacco products.

Section 3 includes self reported morbidities and history of medication for self reported diabetes mellitus, hypertension, thyroid diorders, choletrol levels, history of hemorrhoids and fistula, history of medication for gastric issues as well as for other illnesses.

Section 4 encompassed the administration of the standard questionnaire (R4DQ). The questionnaire was translated into Malayalam and then carefully reviewed by the guide and and two other public health experts with proficiency in mlayalam. Following this, a back-translation process was conducted, and further changes were made in the Malayalam translation according to the descripancies found with the back translation.

The Malayalam translation of the tool underwent a meticulous review process, involving scrutiny by two proficient reviewers fluent in the language. Subsequently, the final translated version, along with the original English version, underwent thorough validation by an expert in the subject matter.

This comprehensive validation process ensured the accuracy and reliability of both the Malayalam and English versions of the tool. Following validation, the tool was finalized, ready for implementation in the study, with confidence in its linguistic integrity and suitability for data collection. Subsequently, the tool was deployed using Open Data Kit ODK software. A pilot study involving 10 participants was then conducted to ensure the tool's suitability, leading to final adjustments before its use in final field data collection.

2.8 Data entry, analysis and management

Data was collected using the ODK software, after the data collection ,the entries were downloaded as Microsoft excel file. Data was cleaned and analysis was done using IBM SPSS version 28. During the process of analysis the overall and disease-specific prevalences of FGIDs were computed using the scoring algorithm endorsed by the Rome Foundation. Then potential associations between FGIDs and demographic details, lifestyle factors, and self-reported morbidities were analysed using cross tabulation and Chi-square test.

2.9 Ethical considerations

The study received approval from the Institutional Ethics Committee of Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, Kerala.

Prior to conducting the study, consent was sought from the respective panchayats and the municipality. Ward members were also informed before going to each ward. Participation in the study was voluntary, and interviews were conducted only after obtaining informed consent from participants. Confidentiality of participants identities and personal information was maintained throughout the study. Data sheets are kept in a password protected folder.

Chapter 3

Result

The study encompassed 342 participants aged between 18 and 69 years, with 171 individuals each residing in both rural and urban areas. To attain the sample size of 342 participants PI had to visit 355 houses in total.

This chapter includes two Sections; Section one includes the socio-demographic, lifestyle, and health-related characteristics of the study participants and section two includes the Prevalence and patterns of Functional Gastrointestinal Disorders (FGIDs).

3.1 Socio-demographic, lifestyle and health-related factors of the study participants

3.1.1 Socio-Demographic Characteristics of Study Participants

This section provides an overview of the demographic characteristics of the participants, including age, gender, educational qualification, and occupation.

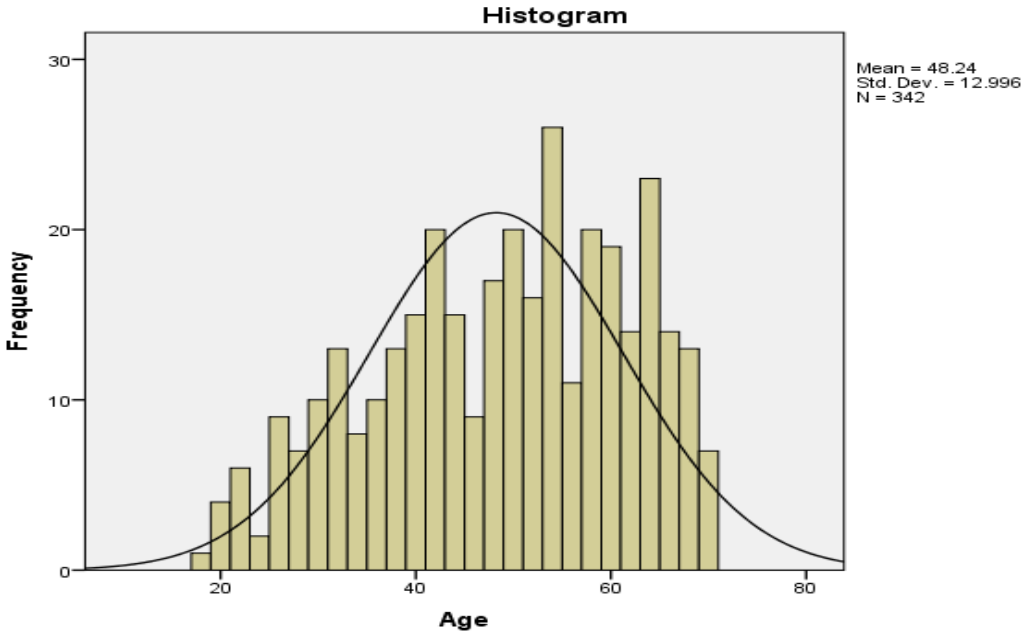

Figure 3.1 Histogram showing the age distribution of all participants

Figure 3.1 shows the age distribution of all participants, and the descriptive measures are given in Table.3.1.

Table 3.1 Age distribution of study participants

Age	**All Participants (N=342)**	**Rural (N=171)**	**Urban (N=171)**
Mean	48.24	48.43	48.05
Median	49.00	49	49
Std. Deviation	13.0	12.6	13.4
Skewness	-.335	-0.264	-0.390
Kurtosis	-.818	-0.939	-0.738
Minimum	18	19	18
Maximum	69	69	69

Age was further categorised as <50 and >= 50 years and the distribution along with other socio-demographic characteristics were provided in Table.3.2. Nearly two third of participants were females (68.7%), with slightly higher representation in urban areas (71.3%) compared to rural areas (66.1%). In terms of educational attainment, secondary education (up to 10th standard) was the most common level achieved (37.4%), followed by graduate and above (34.5%).

Table. 3.2 Socio-Demographic Characteristics of Study Participants

		All (N=342)		Rural (N=171)		Urban (N=171)	
Variable	**Categories**	**Freq**	**Percent**	**Freq**	**Percent**	**Freq**	**Percent**
Age	<50 yrs.	172	50.3	86	50.3	86	50.3
	>=50 yrs.	170	49.7	85	49.7	85	49.7
Gender	Male	107	31.3	58	33.9	49	28.7
	Female	235	68.7	113	66.1	122	71.3
Educational Qualification (Highest level attained so far)	Informal Edu	4	1.2	1	0.6	3	1.8
	Formal-Primary (up to 7th Std)	39	11.4	17	9.9	22	12.9
	Secondary Edu (Up to 10th Std)	128	37.4	67	39.2	61	35.7
	Senior Secondary (Higher secondary)	53	15.5	22	12.9	31	18.1
	Graduate and above	118	34.5	64	37.4	54	31.6
What is your occupation?	Self-employed	69	20.2	35	20.5	34	19.9
	Govt employee	40	11.7	17	9.9	23	13.5
	Non govt employee	49	14.3	27	15.8	22	12.9
	Home maker	170	49.70	88	51.5	82	48

Distribution of occupational status among the participants shows that homemakers represent the largest group, followed by self-employed individuals. Government employees constitute the smallest proportion. Overall, the socio-demographic profile of participants reflects a diverse representation across age, gender, educational and occupational backgrounds in both rural and urban communities.(Table.3.2).

3.1.2. Lifestyle related characteristics of Study Participants

This section outlines various lifestyle characteristics such as alcohol consumption, tobacco use, and some dietary habits among the participants.

Table 3.3 Represents lifestyle factors among participants, stratified by area of residence. Approximately 27.2 percent of participants reported consuming alcohol, with slightly higher prevalence in rural areas (28.1%) compared to urban areas (26.3%). A small proportion (6.1%) reported currently smoking tobacco, with similar prevalence in both rural and urban areas. Smokeless tobacco use was less common, reported by only 0.9percent of participants. Most participants reported rarely consuming carbonated drinks, and half of the participants reported consuming tea or coffee 1-2 times per day (58.2%). More frequent consumption was reported by 31.9 percent of participants, and 2.9 percent reported never consuming tea or coffee (Table.3.3).

Table.3.3 Lifestyle related characteristics of participants

LIFESTYLE FACTORS		All (N=342)		Rural (N=171)		Urban (N=171)	
		Freq	Percent	Freq	Percent	Freq	Percent
Consume alcohol such as beer, wine, spirit, toddy	Yes	93	27.2	48	28.1	45	26.3
Currently smoke any tobacco products such as cigarettes, or other local products?	Yes	21	6.1	11	6.4	10	5.8
Currently use any smokeless tobacco products such as [chewing tobacco, betel, other local]?	Yes	3	0.9	1	0.6	2	1.2
Use Both smoke & smokeless tobacco products	Yes	24	7.0	12	7.0	12	7.0
How often do you consume carbonated drinks?(soda, cola, Pepsi etc)	2-3 times a week	34	9.9	13	7.6	21	12.3
	Rarely	280	81.9	145	84.8	135	78.9
	Never	28	8.2	13	7.6	15	8.8
How often do you consume Tea/coffee?	1-2times per day	199	58.2	96	56.1	103	60.2
	>2times per day	109	31.9	61	35.7	48	28.1
	Rarely	24	7.0	10	5.8	14	8.2
	Never	10	2.9	4	2.3	6	3.5

3.1.3 Self reported morbidities of study participants

This section presents self-reported morbidities including diabetes, hypertension, and other health conditions reported by the participants.

Table 3.4 outlines self-reported morbidities among participants, stratified by area of residence.

Table.3.4 Self-Reported Morbidities among Participants

Self-reported morbidities		All (N=342)		Rural (N=171)		Urban (N=171)	
		Freq	Percent	Freq	Percent	Freq	Percent
Do you have Diabetes?	Yes	64	18.70	33	19.3	31	18.1
Do you have Hypertension?	Yes	79	23.10	39	22.8	40	23.4
Do you have any Thyroid disorders?	Yes	54	15.80	27	15.8	27	15.8
Is your cholesterol level within normal limits?	No	89	26	48	28.1	41	24
Did you consume any antibiotics since past 1month?	Yes	85	24.90	48	28.1	37	21.6
Do you have any kind of allergy?	Yes	89	26	44	25.7	45	26.3
Do you have any History of haemorrhoids (piles) / fistula	Yes	63	18.40	33	19.3	30	17.5
If yes do you consume medication for haemorrhoids/fistula?*	Yes	22	34.9	12	36	10	33.3
Are you having medication for any gastric issues since past one month?	Yes	143	41.80	68	39.8	75	43.9
Are you taking medication for any other illness since past one month?	Yes	63	18.40	30	17.5	33	19.3

*percentages were taken from those who reported yes

Approximately 18.7 percent and 23.1 percent of participants reported with diabetes and hypertension respectively. Thyroid Disorders was reported by 15.8 percent with no variation between rural and urban participants. However, more rural participants (reported abnormal cholesterol levels compared to urban participants (28.1% Vs 24%).

Around a quarter of participants reported consuming antibiotics in the past month, and had a history of any kind of allergies. The prevalence of antibiotic use was slightly higher among rural participants than urban participants (28.1% Vs 21.6%). Nearly one fifth of participants (18.4%), reported a history of haemorrhoids or fistula and among those with a history 35 percent reported consuming medication for it.

Approximately 41.8 percent of participants reported taking medication for gastric issues in the past month, with a slightly higher prevalence observed in urban areas (43.9%) compared to rural areas (39.8%). Additionally, about 18 percent of participants reported taking medication for other illnesses such as knee joint pain, arthritis, renal, liver, or depression.

3.2 Prevalence and Patterns of Functional Gastrointestinal Disorders (FGIDs)

The overall and disease specific prevalences were computed using the scoring algorithm endorsed by the Rome Foundation under the licensed agreement, detailed in the annexure VIII

3.2.1 Prevalence of FGIDs

Out of the 342 participants examined, 227 participants were found to meet at least one diagnostic criterion outlined in the Rome IV classification for one or more FGIDs. The estimated prevalence of FGID and its 95 percent confidence intervals are provided in Table.3.5.

Table 3.5 Estimated prevalence and 95percent confidence intervals for the FGID

	Prevalence	95percent Confidence Intervals	
FGID	**percentage**	**Lower limit**	**Upper limit**
One or more conditions of FGID (overall)	66.4	61.21	71.17
Any one FGID	38.9	33.87	44.15
Two or more FGID	27.5	23.02	32.45

The proportion of participants with one or more conditions of FGID in the study population was estimated to be 66.4 percent, with a margin of error of 5.2 percent for the 95 percent confidence interval. More than one forth of participants had two or more FGIDs (27.9%) and 39 percent had only one condition present.

Table 3.6 shows the prevalence of Rome IV FGIDs assessed among the study population. Among oesophageal disorders, reflex hypersensitivity was the most prevalent (5%), followed by functional chest pain (2%). In gastroduodenal disorders, belching disorder showed the highest prevalence (22.5%), while functional constipation was the most common bowel disorder (18.1%). Functional abdominal bloating/distension (20.8%) and unspecified functional bowel disorder (15.2%) were also notable.

Table 3.6: Prevalence of Rome IV FGIDs among study population

Rome IV ID	Rome IV disorder	Number of individuals with the disorder	Prevalence among study population (%) (N = 342)
A	**Oesophageal disorders**		
A1	Functional chest pain	7	2.0
A2	Functional heartburn	4	1.2
A3	Reflex hypersensitivity	17	5.0
A4	Globus	1	0.3
A5	Functional dysphagia	0	0.0
B	**Gastro duodenal disorders**		
B1	Functional dyspepsia	13	3.8
B1a	Postprandial Distress Syndrome	10	2.9
B1b	Epigastric Pain Syndrome	8	2.3
B2	Belching disorder	77	22.5
B3	Nausea and Vomiting Disorders		
B3a	Chronic Nausea and Vomiting Syndrome	2	0.6
B3b	Cyclic vomiting syndrome	5	1.5
B3c	Cannabinoid hyperemesis syndrome	0	0.0
B4	Rumination syndrome	18	5.3

Table 3.6 Prevalence Rome IV FGIDs among study population (Continue)

Rome IV ID	Rome IV disorder	Number of individuals with the disorder	Prevalence among study population (%) (N = 342)
C	**Bowel disorders**		
C1	Irritable bowel syndrome	3	0.9
C2	Functional constipation	62	18.1
C3	Functional diarrhoea	27	7.9
C4	Functional abdominal Bloating/distension	71	20.8
C5	Unspecified functional bowel disorder	52	15.2
C6	Opioid-induced constipation	2	0.6
D	**Central Nervous System Disorders of GI Pain**		
D1	Centrally mediated abdominal pain syndrome	0	0.0
E	**Gallbladder and Sphincter of Oddi Disorders**		
E1	Biliary pain	0	0.0
F	**Anorectal Disorders**		
F1	Faecal incontinence	1	0.3
F2	Functional Anorectal Pain		
F2a	Levator ani syndrome	1	0.3
F2b	Unspecified Functional Anorectal Pain	1	0.3
F2c	Proctalgia Fugax	0	0.0

Central nervous system disorders of GI pain and gallbladder/Sphincter of Oddi disorders showed no prevalence in this study. Anorectal disorders, such as faecal incontinence and functional anorectal pain, were reported by a small proportion of participants.

Figure 3.2 illustrates various FGIDs with a prevalence of one percent or more among the study participants in ascending order.

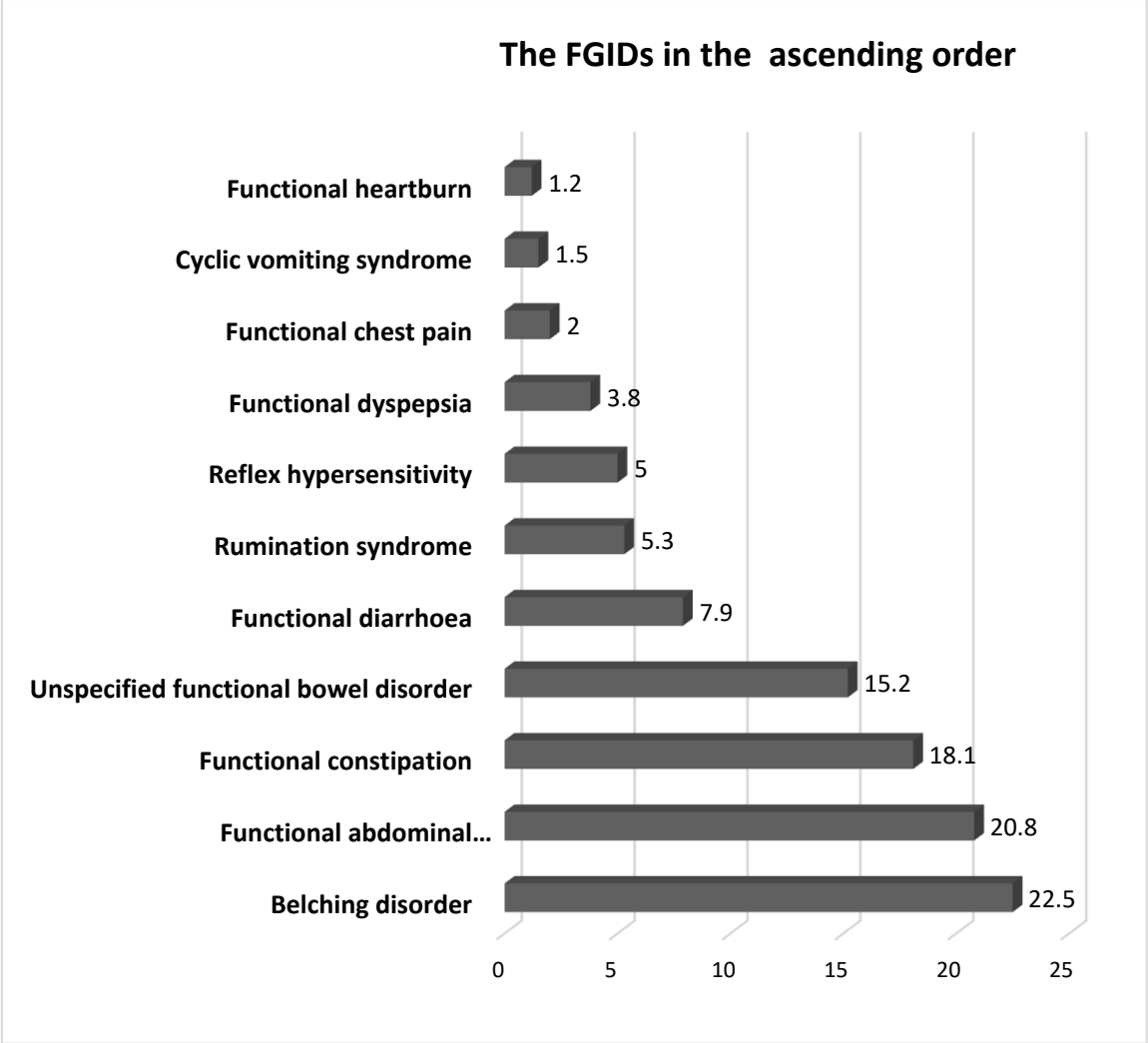

Figure 3.2 Bar plot showing prevalence of FGIDs (>=1%) as seen in the study population

3.2.2 Exploring patterns of FGID with respect to characteristics of study participants

In order to explore any pattern of relationship for the FGIDs with any sociodemographic, lifestyle or health related characteristics, the variables were cross tabulated with overall FGIDs and the results are shown in the Tables .3.7 to 3.9.

Table.3.7 Association between sociodemographic factors and FGIDs (overall) among the participants

Variables	Categories	FGID (overall) n	%	P-value
Age Group	<50	108	62.8	0.158
	>=50	119	70	
Area of residence	Rural	111	64.9	0.567
	Urban	116	67.8	
Sex	Male	76	71	0.219
	Female	151	64.3	
Educational Qualification	Formal Education (up to 7th Std)	36	83.7	
	Secondary Education (Up to 12th Std)	121	66.9	0.015
	Graduate and above	70	59.3	
What is your occupation?	Student	8	57.1	0.415
	Self-employed	50	72.5	
	Govt employee	30	75	
	Non govt employee	32	65.3	
	Home maker	107	62.9	

The prevalence of FGID was showing a significant association with education level of participants, with a decreasing proportion with respect to increasing level of education. No significant variations were observed between strata of age group, area of residence, or sex.

Table 3.8 displays the distribution of FGID across various lifestyle factors among the study participants, including alcohol consumption, tobacco use, consumption of carbonated drinks, and frequency of tea/coffee intake. However, none of these factors were significantly associated with overall prevalence of FGIDs.

Table.3.8 Association between lifestyle factors and FGIDs (overall) among the participants

Variables	Categories	FGID (overall) n	Percent	P-value
Do you consume alcohol such as beer, wine, spirit, toddy	no	162	65.1	0.4
	yes	65	69.9	
Do you currently smoke any tobacco products such as cigarettes, or other local product?	no	213	66.4	0.977
	yes	14	66.7	
Do you currently use any smokeless tobacco products	no	224	66.1	0.554
	yes	3	100	
How often do you consume carbonated drinks?	2-3times a week	25	73.5	0.24
	Rarely	187	66.8	
	Never	15	53.6	
How often do you consume Tea/coffee?	1-2times per day	123	61.8	0.061
	More than 2times per day	82	75.2	
	Rarely	14	58.3	
	never	8	80	

Table.3.9 Association between self reported morbidity and FGIDs (overall)

Variables	Categories	FGID n	Percent	P-value
Do you have Diabetes?	no	184	66.2	0.879
	yes	43	67.2	
Do you have Hypertension?	no	165	62.7	0.009
	yes	62	78.5	
Do you have any Thyroid disorders?	no	192	66.7	0.792
	yes	35	64.8	
Is your cholesterol level within normal limits?	no	67	75.3	0.039
	yes	160	63.2	
Did you consume any antibiotics since past 1month?	no	169	65.8	0.675
	yes	58	68.2	
Do you have any kind of allergy?	no	160	63.2	0.039
	yes	67	75.3	
Do you have any History of haemorrhoids (piles) / fistula	no	176	63.1	0.007
	yes	51	81	
Do you consume medication	no	181	66.8	0.163
	yes	18	81.8	
Are you having medication for any gastric issues since past 1month?	no	111	55.8	<0.001
	yes	116	81.1	
Are you taking medication for any other illness since past 1month?	no	181	64.9	0.217
	yes	46	73	

Table 3.9 presents the distribution of FGID across various health-related factors among the study participants, including the presence of diabetes, hypertension, thyroid disorders, cholesterol levels, recent antibiotic consumption, allergies, history of hemorrhoids/fistula, medication use, and gastric issues. Significant associations ($P < 0.05$) were observed for hypertension, cholesterol levels, history of hemorrhoids/fistula, and medication for gastric issues within the past month, suggesting potential links between these factors and FGIDs. The variables such as Area of residence, age, sex and education of the participants were further explored to see any patterns with regard to any specific FGIDs. Only the FGIDs with prevalence more than one percent were included in this analysis.

Table 3.10 Pattern of occurrence of different FGIDs based on Area of Residence

FGIDs	AREA OF RESIDENCE				P- value
	Rural (N=171)		Urban (N=171)		
	Freq	percent	Freq	percent	
Functional chest pain	5	2.9	2	1.2	0.448
Functional heart burn	0	0	4	2.3	0.123
Reflex hypersensitivity	9	5.3	8	4.7	0.804
Functional dyspepsia	8	4.7	5	2.9	0.396
Cyclic vomiting syndrome	2	1.2	3	1.8	1.000
Belching disorder	28	16.4	49	28.7	0.007
Rumination syndrome	9	5.3	9	5.3	1.000
Functional constipation	28	16.4	34	19.9	0.400
Functional diarrhoea	17	9.9	10	5.8	0.16
Functional abdominal bloating/distension	37	21.6	34	19.9	0.689
Unspecified functional bowel disorder	25	14.6	27	15.8	0.763
Overall FGIDs	111	64.9	116	66.4	0.567

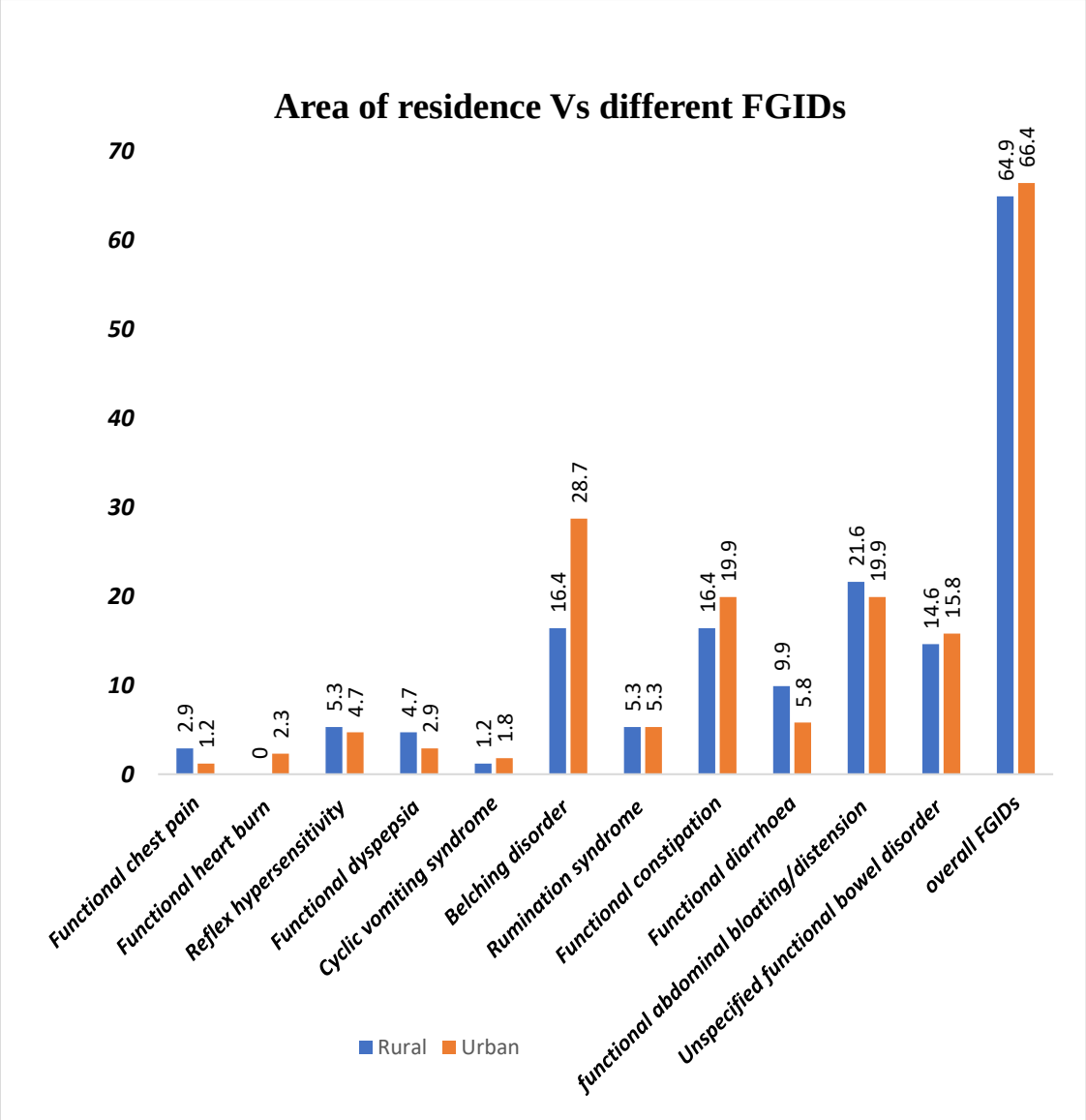

Figure 3.3. Bar plot showing comparison of different FGIDs between rural and urban areas.

Though there was no significant variation in the overall prevalence of FGID between rural and urban areas, notabledifferences in the occurrence of belching disorderwere observed with a significantly higher prevalence in urban areas compared to rural areas (15.4% vs 28.7%, P= 0.007). Other FGIDs showed no substantial variation based on participants area of residence. However, the investigation into FGID prevalence across males and females categories did not show any significant variation in overall FGID or any specific disorders (Table 3.11).

Table 3.11. Pattern of occurrence of different FGIDs based on sex of the study participants

FGIDs	SEX				
	Male		Female		P- value
	Freq	percent	Freq	percent	
Functional chest pain	2	1.9	5	2.1	1.000
Functional heart burn	2	1.9	2	0.9	0.592
Reflex hypersensitivity	4	3.7	13	5.5	0.598
Functional dyspepsia	3	2.8	10	4.3	0.762
Cyclic vomiting syndrome	2	1.9	3	1.3	0.650
Belching disorder	22	20.6	55	23.4	0.559
Rumination syndrome	6	5.6	12	5.1	0.847
Functional constipation	20	18.7	42	17.9	0.855
Functional diarrhoea	12	11.2	15	6.4	0.124
Functional abdominal bloating/distension	24	22.4	47	20.0	0.607
Unspecified functional bowel disorder	17	15.9	35	14.9	0.812
Overall FGIDs	76	71	151	64.3	0.219

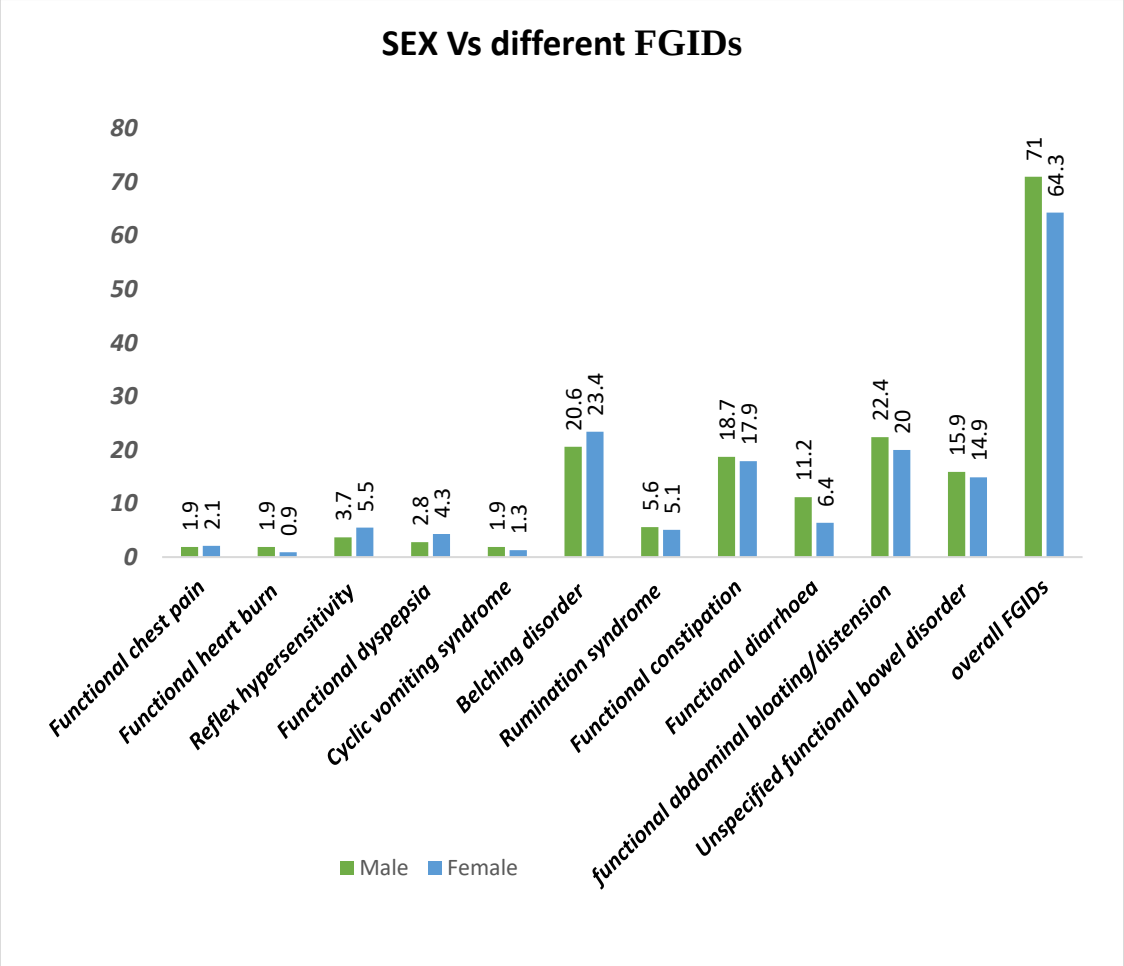

Figure 3.4. Bar plot showing comparison of different FGIDs between male and female participants.

FGIDs based on Age group were described in Table.3.12. The Functional constipation exhibited a significant disparity, with a higher prevalence observed in participants aged 50 years and above (27.1%) compared to those below 50 years (9.3%) (P< 0.001). In contrast functional abdominal bloating/distension showed a significantly higher prevalence in the younger cohort (27.3%) compared to the older age group (14.1%) (P= 0.003). Belching disorder showed a variation of 19.8percent and 25.3 percent between the ages, but not found to be statistically significant. Other FGIDs or the overall prevalence did not vary significantly across different age brackets.

Table 3.12 Pattern of occurrence of different FGIDs based on Age groups of participants

FGIDs	AGE GROUP				P- value
	<50 years		>=50 years		
	Freq	percent	Freq	percent	
Functional chest pain	2	1.2	5	2.9	0.282
Functional heart burn	0	0.0	4	2.4	0.060
Reflex hypersensitivity	11	6.4	6	3.5	0.223
Functional dyspepsia	4	2.3	9	5.3	0.169
Cyclic vomiting syndrome	4	2.3	1	0.6	0.371
Belching disorder	34	19.8	43	25.3	0.221
Rumination syndrome	9	5.2	9	5.3	0.980
Functional constipation	16	9.3	46	27.1	<0.001
Functional diarrhoea	13	7.6	14	8.2	0.816
functional abdominal bloating/distension	47	27.3	24	14.1	0.003
Unspecified functional bowel disorder	26	15.1	26	15.3	0.963
Overall FGIDs	108	62.8	119	70	0.158

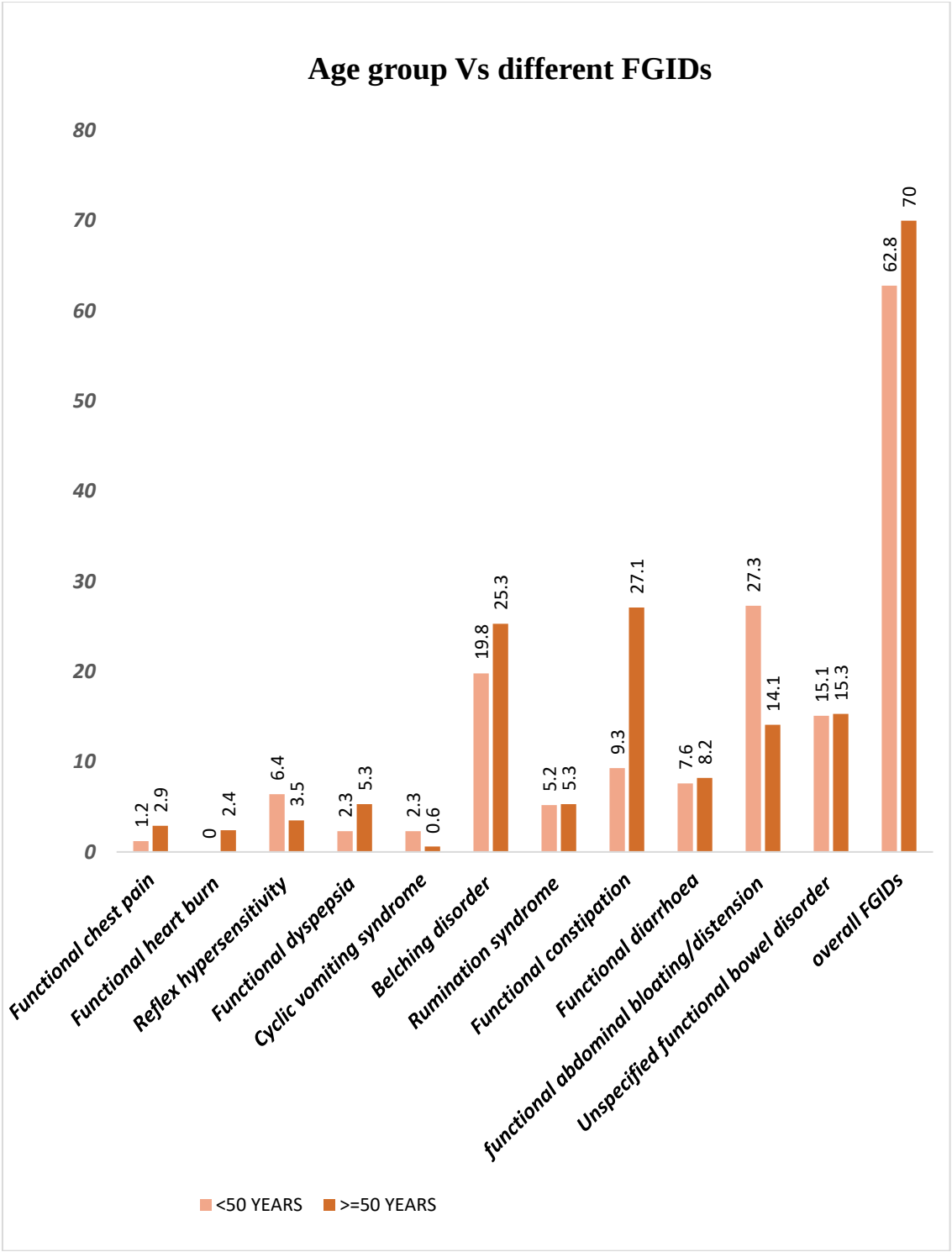

Figure 3.5. Bar plot showing comparison of different FGIDs between different Age groups.

Table 3.13 Pattern of occurrence of different FGIDs based on educational status of study participants

FGIDs	EDUCATIONAL QUALIFICATION						P-value
	FORMAL EDU		SECONDARY EDU		GRADUATE & ABOVE		
	Freq	Percent	Freq	Percent	Freq	Percent	
Functional chest pain	1	2.3	5	2.8	1	0.8	0.548
Functional heart burn	0	0	3	1.7	1	0.8	1.00
Reflex hypersensitivity	2	4.7	10	5.5	5	4.2	0.938
Functional dyspepsia	3	7	8	4.4	2	1.7	0.196
Cyclic vomiting syndrome	0	0	3	1.7	2	1.7	1.00
Belching disorder	17	39.5	42	23.2	18	15.3	0.005
Rumination syndrome	1	2.3	9	5	8	6.8	0.517
Functional constipation	11	25.6	33	18.2	18	15.3	0.322
Functional diarrhoea	3	7	19	10.5	5	4.2	0.145
functional abdominal bloating/distension	8	18.6	35	19.3	28	23.7	0.614
Unspecified functional bowel disorder	12	27.9	23	12.7	17	14.4	0.043
Overall FGIDs	36	83.7	121	66.9	70	59.3	0.015

The analysis of FGID prevalence across different levels of educational qualifications (Table3.13) revealed noteworthy trends for overall FGID and some of the specific conditions. The overall FGID was showing an increased trend with decreasing level of education. The association was significant with a p-value from Chi-square test for association (P = 0.015) and the Chi-square test for trend also showed a p-value of 0.006 which is highly significant. Among different conditions, belching disorder exhibited a significant association with education, with a higher prevalence observed among individuals with formal education (39.5%) compared to those with secondary education (23.2%) and graduate or above (15.3%) qualifications (p = 0.005), the P-value for trend also is 0.002. Similarly,unspecified functional bowel disorder showed a significant difference, with a higher prevalence among individuals with formal education (27.9%) compared to those with secondary education (12.7%) and graduate or above (14.4%) qualifications (P = 0.043), the data was visualized in Figure 3.6.

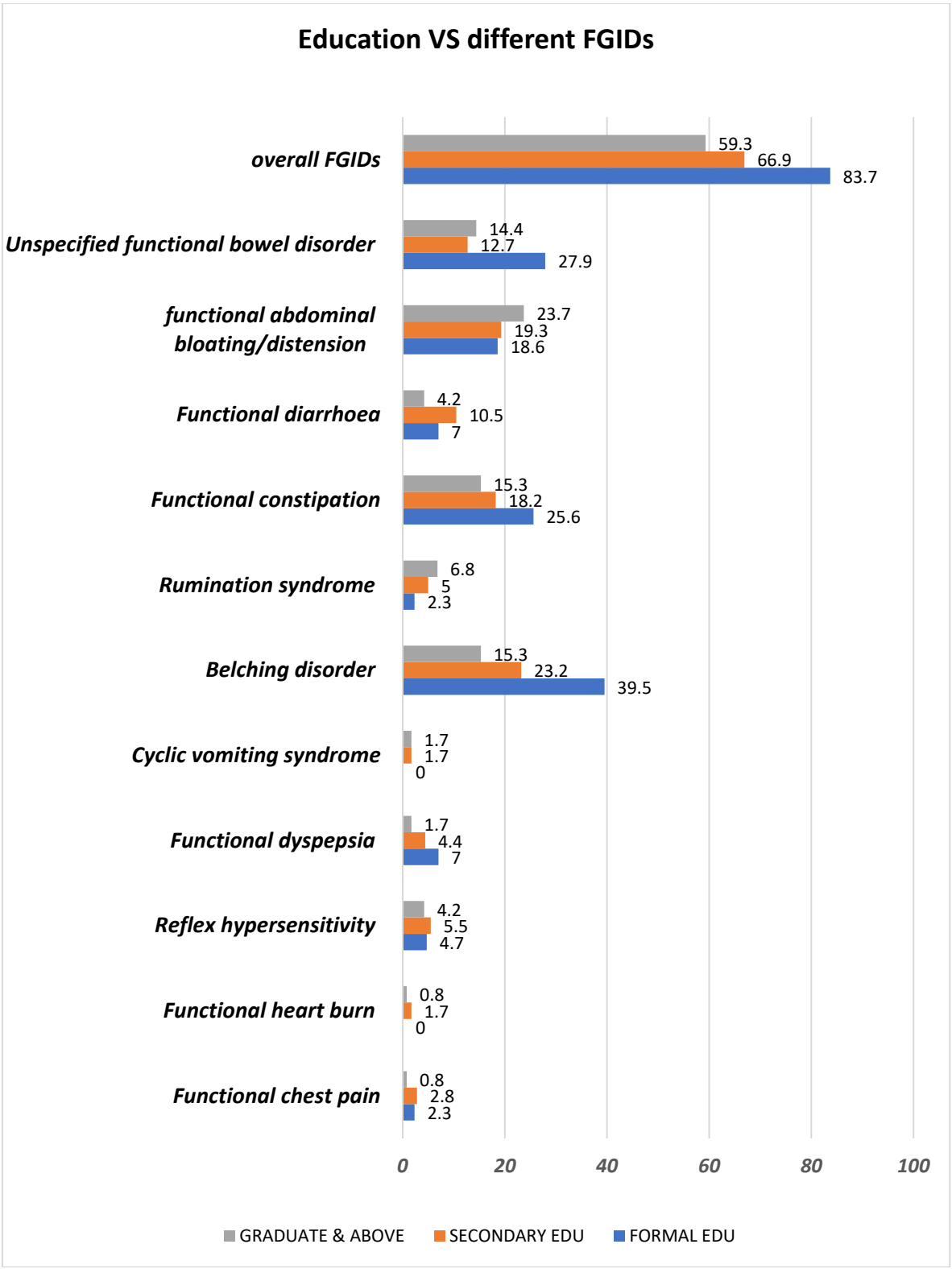

Figure 3.6 Bar plot showing comparison of different FGIDs between different educational groups.

CHAPTER 4

DISCUSSION

The present study involved a house-to-house survey conducted among 342 adults aged 18 to 69 years, from both urban and rural areas of a Taluk in Ernakulam district using a cluster sampling method, ensuring a diverse representation of the population, and reveals reliable estimates for the prevalence of FGIDs based on Rome IV criteria.The results showed a high prevalence of FGIDs in the population, with specific disorders such as belching disorder, functional abdominal bloating/distension (FABD), and functional constipation being predominant among others. These findings align with the diagnostic categories outlined in the Rome criteria, indicating that these criteria effectively capture the spectrum of FGIDs present in the study population.

Furthermore the data evidently explore the pattern of FGIDs in terms of the distribution of various FGIDs, and the variation in the prevalence of major FGIDS with respect to the characteristics of adults in the study population. The study identified demographic factors such as age, area of residence, and educational qualification that were associated with the prevalence of FGIDs. The main observations were discussed further in this chapter under different sections.

4.1 Prevalence of FGIDs – a comparison of estimates from the present study with other studies

Prevalence of FGIDs in our study was 66.4 percent, most common being belching disorder(22.5%) followed by functional abdominal bloating and distension (20.8%), functional constipation (18.1%), unspecified functional bowel disorder (15.2%), functional diarrhea (7.9%), reflex hypersensitivity (5%), functional dyspepsia (3.8%), rumination syndrome (5.3%). A population-based survey conducted three decades back in US (1993) to determine the prevalence of FGIDs using Rome criteria found that 69

percent of participants reported having at least one of 20 functional gastrointestinal syndromes in the previous three months. (Drossman et al., 1993) A recent study published from Tunisia (2022) utilizing the Rome III criteria also yielded comparable results, indicating an overall prevalence of 54.2 percent for FGIDs. Unspecified functional bowel disorder emerged as the most prevalent (46.6%), followed by functional constipation at 11.6 percent, IBS at 7.6 percent, and functional dyspepsia at 6.7 percent (Gallas et al., 2022).

Among the 342 participants in the present study, 66.4 percent met the Rome IV criteria for any FGID. Specifically, 38.9 percent exhibited with any one FGID, while 27.5 percent presented with two or more FGIDs. In one study involving college students in northern India and employing Rome IV criteria, 17.5 percent of patients had a single FGID, with 9.3 percent showing an overlap of two or more FGIDs. (Goyal et al., 2021) In contrast, a retrospective cross-sectional study at a tertiary care FGID clinic in Germany found that 92.2 percent of participants met the Rome III criteria for any FGID, with 48.0 percent experiencing multiple FGIDs. (Berens et al., 2020) The tertiary care FGID clinics likely attract individuals with more severe symptoms, and that may have contributed to the high prevalence of FGID in this study as compared to the present study with a broader representation of the general population.

The prevalence of functional heartburn in our study was 1.2 percent, reflex hypersensitivity was 5 percent and functional dyspepsia was 3.8 percent. In a global epidemiological study of FGIDs done by Rome foundation, functional dyspepsia was the most prevalent gastroduodenal disorder with pooled prevalence of 7.2 percent and 4.8 percent reported by the internet and household surveys respectively. The prevalence of functional heart burn was 1.2 percent and reflex hypersensitivity was 0.8 percent reported in that study. (Sperber et al., 2021) However, the study done among college

students of northern India, had a higher prevalence for FD (15.2%, n = 199) and relex hypersensitivity (3.5%, n = 46). (Goyal et al., 2021) The variations in the prevalences could be attributed to several factors like demographics, geographic location, dietary habits, lifestyle factors, and genetic predispositions which can vary among populations.

Among gastro duodenal disorders, belching disorder had the highest prevalence of 22.5 percent in the present study. In a case control study to evaluate relationship between belching and irritable bowel syndrome, it was found that repetitive belching is frequent in patients with IBS (32%). (Obekli et al., 2017) Another study suggest that excessive supra gastric belching was frequently observed in patients with gastroesophageal reflux disease and in patients with esophageal hypomotility. (Koukias et al., 2015)

In our study, Functional Abdominal Bloating and Distension (FABD) emerged as the most prevalent bowel disorder at 20.8percent, followed by functional constipation at 18.1percent, and unspecified functional bowel disorder (FBD-U) at 15.2percent. Comparatively, a national survey in the US reported prevalence of 15.9 percent forbloating or distension among participants. In another study involving employees of the veterans affairs black hills health care system, 21 percent of participants reported bloating, with 64 percent of them also diagnosed with IBS. Additionally, seven percent reported functional bloating, with various associated bowel disorders such as constipation, diarrhea, and dyspepsia. The link between FABD and conditions like constipation and IBS-C is notable, suggesting possible associations with functional outflow obstruction and slowed intestinal transit. Similarly, FBD-U was identified as the most prevalent bowel disorder in a global study conducted by the Rome foundation. (Houghton et al., 2006; Mari et al., 2019; Sperber et al., 2021; Tuteja et al., 2008)

4.2 Variation of FGID with respect to participant characteristics

Although the prevalence of any FGID among participants aged 50 years and above was slightly higher than those under 50 years, disorders like functional chest pain, functional heart burn, functional dyspepsia, belching disorder, functional constipation, rumination syndrome, functional diarrhoea, unspecified functional bowel disorder was more prevalent in older age (>=50yrs) group compared to age <50yrs in the present study. Similar, findings were seen from the study done by Dawoodi et al.,in India which indicated a significant likelihood of gastrointestinal problems among adults aged 45–64 years compared to those under 44 years of age (Dawoodi et al., 2022) However a different pattern was observed in case of functional abdominal bloating or distension in the present study which showed more prevalence in younger age group (<50yrs) compared to age group >=50yrs. The higher prevalence of FABD among the younger age group (<50 years) may be attributed to several factors like dietary habits, lifestyle choices, and stress levels differ between age groups, influencing gastrointestinal function differently.

The prevalence of FGIDs between males and females did not show any statistically significant variations in our study, though the overall prevalence was slightly higher among males than females. The data also suggested that belching disorder was slightly high in females compared to males. In a study conducted in china to determine the clinical features and pathophysiology of belching disorder it was stated that belching disorder is more common in middle-aged women, with a variety of clinical manifestations, including overlapped symptoms, which often was associated with eating. (Sun et al., 2015)

However one study conducted by Ghoshal et al reported that female sex is an independent predictor for FGID. (Ghoshal et al., 2021) In a population-based national survey

conducted from 2017 to 2018 in India based on self-reported gastrointestinal problems, it was seen that women exhibited a statistically significant 1.15 fold higher likelihood of reporting GI problems compared to men. (Dawoodi et al., 2022)

The overall Prevalence of FGIDs was almost similar in both rural and urban areas. But the prevalence of belching disorder was higher in participants from urban areas compared to rural. Some studies done in southern part of India to determine the prevalence of GERD and its risk factors, it was found that people residing in urban community were more vulnerable to reflux disease than those in rural community. functional chest pain, functional dyspepsia, and functional constipation demonstrated similar prevalences across both rural and urban populations. These findings suggest that while certain FGIDs may be influenced by geographical factors, the overall burden of FGIDs appears to be comparable between rural and urban settings. Further investigation into the determinants of FGID prevalence in different residential areas is warranted to better understand these disparities.

Analysis of FGID prevalence across different levels of educational qualifications revealed that the burden of FGIDs also varied significantly across educational groups, suggesting an association between educational attainment and FGID prevalence. Many studies reported similar findings as seen in the present study those with lower education level has an increased risk of FGIDs. (Dawoodi et al., 2022; Ghoshal et al., 2021; Wang et al., 2016) These findings underscore the importance of considering educational backgrounds in understanding the epidemiology of FGIDs. A study by Dawoodi et al revealed a significant negative association between the education level of respondents in India and self-reported gastrointestinal problems. As educational attainment increased, there was a corresponding decrease in the likelihood of experiencing gastrointestinal issues. (Dawoodi et al., 2022) The present study also reported some negative association

between education and FGIDs like reflex hypersensitivity, functional abdominal bloating or distension, functional diarrhea, rumination syndrome and functional chest pain.

In the analysis to determine the association between FGID and self-reported morbidities it was found that self-reported raised blood pressure levels and raised cholesterol levels were found to be statistically significant towards the occurrence of FGIDs. In a study utilizing data from the Longitudinal Aging Study in India (LASI), a population-based national survey conducted from 2017 to 2018, it was observed that individuals with hypertension and heart disease exhibited a higher prevalence of self-reported gastrointestinal issues. This finding underscores the potential individual effects of hypertension on gastrointestinal health, shedding light on the intricate interplay between cardiovascular and gastrointestinal conditions among aging populations. (Dawoodi et al., 2022)

Similarly, a history of hemorrhoids or fistula also was significantly associated with overall FGIDs in the present study. In a systematic review and meta-analysis revealed that patients with hemorrhoids had a significantly higher prevalence of functional constipation compared to controls. These findings underscore the association between hemorrhoids and functional constipation, suggesting potential implications for clinical management and treatment strategies. (Kalkdijk et al., 2022)

The analysis also showed a significant association between the presence of allergies (such as skin or dust allergies) and the prevalence of overall FGIDs. Particularly noteworthy was the higher prevalence of allergic conditions among participants aged 50 years and below. Adverse reactions to food, often result from Ig-E-mediated hypersensitivity, leads to abnormal physical responses following food ingestion. Symptoms range from immediate manifestations like cough, chest tightness, wheezing, hives, to GI symptoms such as nausea, vomiting, diarrhea, bloating, dermatitis, and even life-threatening

anaphylaxis. (Onyimba et al., 2021) Studies further suggest that patients with eosinophilic GI disorders or inflammatory bowel disease may warrant heightened suspicion for food allergies, indicating the diverse manifestations and potential implications of allergic conditions in gastrointestinal health. (DeBrosse and Rothenberg, 2008; Onyimba et al., 2021) Studies suggest that approximately 60 percent of individuals diagnosed with FGIDs experience symptoms related to food. (Boettcher and Crowe, 2013) This highlights the considerable prevalence of food allergies or hypersensitivities among FGID patients. Food intolerance is frequently reported among individuals with FGIDs, encompassing conditions such as IBS, FD and GERD. (Boettcher and Crowe, 2013; Chey et al., 2002)

Of the 342 participants 41.9 percent people were consuming medication for gastric issues since past one month for any FGID. Of the people taking medication for gastric issues 58.7 percent included people who were age greater than 50years .Within the FGIDs functional heart burn , reflex hypersensitivity , functional dyspepsia, belching disorder, rumination syndrome, functional constipation, functional abdominal bloating or distension was found to be associated with consuming medication for any gastric issues since past one month. A narrative review in the context of current understanding of antacids and its role in treating heartburn has mentioned that antacids represent a significant category of non-prescription medications widely available worldwide. (Garg et al., 2022). According to the study done by Garg et al, Consumers seeking relief from acid indigestion and heartburn invest considerable funds in these over-the-counter remedies. These products offer symptomatic relief from various gastrointestinal issues. According to the World Gastroenterology Organization, if one frequently experiences heartburn, it's essential to focus on two main goals while self-treating first, to completely relieve the symptoms, and second, to improve ones overall quality of life. When

heartburn symptoms decrease, it can have a big impact on how one feel both mentally and physically. These researches mentions that using antacids, either by themselves or along with other treatments, has been shown to make people feel better overall by reducing symptoms like heartburn and improving energy levels, ability to move around, social interactions, and emotional well-being. (Garg et al., 2022)

4.3 Public health facilities for GI problems

The changing lifestyle factors, altered dietary patterns, and behavioural shifts have given rise to numerous gastric-related health issues for adults in the population. The current allocation of human resources in public health facilities within the state lacks specialist positions of gastroenterologist, as indicated by the Rural Health Statistics data for the year 2021-2022. (Ministry of Health and Family Welfare, Government of India, 2023) for example, presently gastroenterologist facilities in Ernakulam district are only available in two health facilities, (General Hospital Ernakulam and Medical College Hospital Kalamassery). This deficiency results in people resorting to over-the-counter medication, which can potentially lead to health complications in the future. Moreover, this situation has significant economic implications, as the absence of specialized facilities in the public sector forces individuals to seek medical consultations in the private sector. This can make substantial out of pocket expenses, particularly in rural areas of the district.

Hence it is recommended to increase the capacity building of existing human resource such that a sub setting of primary and secondary gastric cases can be done at the primary level and those who require a higher prioritization can be referred to the secondary or tertiary care centers where they get required treatment or can be referred back with accurate diagnosis for which the medicines can be provided from the primary care centres. Giving proper awareness to the existing medical officers based on the diet practices, and exercises which a patient with gastric disease should follow in order to

curb the disease. (The Indian Express, 2017)

4.4 Strength and limitation

This study stands as one of the pioneering endeavors to evaluate the prevalence of FGIDs within a specific population of Ernakulam district, Kerala, by employing the latest Rome IV criteria.

However, the limitiations include the lack of evidence confirming that any structural or motility abnormality underlies the reported symptoms. Diagnostic tests such as upper endoscopy and pH impedance testing, which are essential for identifying such abnormalities, were not conducted. Therefore, the study's ability to determine the root cause of symptoms is limited.

4.5 Conclusion

The prevalence of FGID was high in the study population, and the patterns in the occurrence of different FGIDs differ with respect to demographic factors such as age, area of residence and educational qualification. FGIDs are preventable diseases. Preventive measures play a pivotal role in managing FGIDs, primarily through lifestyle modifications and dietary practices. Moreover, early detection and prompt treatment of FGIDs are crucial to prevent the progression of these conditions and the onset of severe complications. Further research is warranted to explore the underlying mechanisms and risk factors contributing to the development of FGIDs in this population.

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ANNEXURE 1

PARTICIPANT INFORMATION SHEET (ENGLISH)

Achutha Menon Centre for Health Science Studies (AMCHSS)

Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST)

Thiruvananthapuram

INFORMATION SHEET

FUNCTIONAL GASTROINTESTINAL DISEASES [FGIDs] AMONG ADULTS OF AGE 18-69YRS IN ERNAKULAM DISTRICT, KERALA.

I, Dr Karthika C M, a final year Master of Public Health (MPH) student at AMCHSS, I'm conducting a research study on Functional gastrointestinal diseases among adults aged 18 to 69 years in Ernakulam District, Kerala. Your participation in this study is highly valuable. This information sheet is designed to provide you with essential details about the study to help you make an informed decision regarding participation.

Purpose of the study

The primary objective of this study is to determine the prevalence of functional gastrointestinal diseases in adults aged 18 to 69 residing in Ernakulam District, Kerala.

Study Procedures

If you decide to participate, you will be asked to participate in a structured interview. This interview will include questions about your gastrointestinal health, lifestyle, medical history, and demographic information. The interview may take approximately 20-30 minutes to complete. You are free to answer at your own pace, and if you are uncomfortable with any question, you can request to skip it.

Confidentiality

Your participation in this study is voluntary, and all the information you provide will be kept strictly confidential. Your personal details will not be disclosed in any research reports or publications. Data will be analysed in an aggregate form to ensure anonymity.

Risks and Benefits

There are no known risks associated with participating in this study. There may not be direct benefits to you, Some questions may be a bit uncomfortable, but your participation will contribute to advancing our understanding of gastrointestinal diseases in the community. This knowledge may eventually lead to improved healthcare practices

and may contribute to better healthcare strategies and recommendations for the region.

Participation and Withdrawal

Your participation in this study is entirely voluntary. You have the right to withdraw from the study at any time during the interview without any penalty or loss of benefits. You may choose not to answer any specific questions that make you uncomfortable.

Contact Information

If you have any questions or concerns about the study, you can contact me, Dr Karthika C M (MPH Student at AMCHSS, SCTIMST, TVM). If you have concerns about your rights as a research participant, you may contact the Institutional Review Board (IRB) at AMCHSS, SCTIMST, TVM.

PRINCIPAL INVESTIGATOR

Dr KARTHIKA C M

MPH STUDENT

AMCHSS, SCTIMST

MEDICAL COLLEGE (PO), THIRUVANANTHAPURAM-11

Email: karthikamohan001@gmail.com

Phone no: 9946600935

IRB MEMBER SECRETARY

DR. SRINIVAS G

MEMBER SECRETARY

INSTITUTIONAL REVIEW BOARD,

SCTIMST, TRIVANDRUM, 695011

CONTACT NUMBER: 04712524689(OFFICE)

Email id: srinivasg@sctimst.ac.in

Annexure 2

Consent form (English)

Achutha Menon Centre for Health Science Studies (AMCHSS)

Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST), Thiruvananthapuram

CONSENT FORM

I---------- have read/ heard and understood all the information provided in the research information sheet. I understand that my participation in this study is entirely voluntary. By signing/ putting thumb impression I confirm my voluntary participation in this study. I understand that I can withdraw my participation at any time during the interview without any explanation and I also understand that my identity and personal information will be kept confidential. I have been informed who should be contacted for further clarification. I agree to take part in this study.

Name of the Participant:

Signature of the Participant:

Thumb Impression (if unable to sign):

Date:

Annexure 3

Achutha Menon Centre for Health Science Studies (AMCHSS)

Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST),

Thiruvananthapuram

CHECKLIST

Serial no of household/participant	Eligible individual present in the house (Y/N)	Willing to participate (Y/N)	Interview conducted/completed (yes/no)	Reason for non-participation(if refused to participate)	Remarks

Annexure 4

Achutha Menon Centre for Health Science Studies (AMCHSS)

Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST), Thiruvananthapuram

Interview schedule (English)

Sl No	Question	Coding Criterion	Code options	others
IDENTIFICATION INFORMATION				
1	Participant ID number (**to be filled by the investigator**)			
SOCIO-DEMOGRAPHIC INFORMATION				
2	Age	Completed age as on 01.01.2024		
3	Gender	Male	0	
		Female	1	
4	Area of residence	Rural	0	
		Urban	1	
5	Educational Qualification (Highest level attained so far)	Informal Education	**0**	
		Formal-Primary Education (up to 7th Std)	1	
		Secondary education (Up to 10th Std)	2	
		Senior Secondary Education (Higher secondary)	3	
		Graduate and above	4	
6	What is your occupation?	Student	0	
		Self-employed-(farmer/shop keepers/mason/carpenter/ labour / drivers)	1	
		Govt employee	2	

		Non govt employee- IT sector/ other office jobs/ health workers/ accountants /others	3	
		Home maker	4	
LIFESTYLE FACTORS				
6.	Do you consume alcohol such as beer, wine, spirit, toddy	No	0	
		Yes	1	
7.	Do you currently smoke any tobacco products such as cigarettes, or other local product?	No	0	
		Yes	1	
8.	Do you currently use any smokeless tobacco products such as [chewing tobacco, betel, other local]?	No	0	
		Yes	1	
9.	How often do you consume carbonated drinks? (soda, cola, Pepsi etc)	Once a day	0	
		2-3times a week	1	
		Rarely	2	
		Never	3	
10.	How often do you consume Tea/coffee?	1-2times per day	0	

		More than 2times per day	1	
		Rarely	2	
		Never	3	
Other morbidities & History of medication				
11	Do you have Diabetes?	Yes	1	(If yes) Do you consume medication(yes /no)
		No	0	
12.	Do you have Hypertension?	Yes	1	(If yes) Do you consume medication(yes /no)
		No	0	
13.	Do you have any Thyroid disorders?	Yes	1	(If yes) Do you consume medication(yes /no)
		No	0	
14	Is your cholesterol level within normal limits?	Yes	1	(If no) Do you consume medication(yes /no)
		No	0	
15.	Did you consume any antibiotics since past 1month?	Yes	1	
		No	0	
16	Do you have any kind of allergy?	Yes	1	(If yes) Do you consume medication (yes/no) Specify type of allergy [eg food allegy with skin irritations or dust allery with respiratory symptoms)
		No	0	
17.	Do you have any History of haemorrhoids (piles) / fistula	Yes	1	(If yes) Do you consume medication (yes/no)
		No	0	
18.	Are you having medication for any	Yes	1	

	gastric issues since past 1month?	No	0	(If yes) are you taking medication ? Mention name …..
19.	Are you taking medication for any other illness since past 1month?(renal,liver,depression etc)	Yes	1	(If yes) Mention name …..
		No	0	

ROME IV DIAGNOSTIC QUESTIONNAIRE FOR ADULTS

English for the United States

Question	*Answer*
1. In the last 3 months, how often did you have a feeling of a lump or something stuck in your throat?	⓪Never→***Skip to question 5*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time
2. Has it been 6 months or longer since you started having this feeling of lump or something stuck in your throat?	⓪No ①Yes

3. How often did the feeling of a lump or something stuck in your throat happen between meals - when you were not eating? (Percent of times when you had this feeling)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
4. When you had the feeling of a lump or something stuck in your throat, how often did it hurt to swallow? (Percent of times when you had this feeling)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
5. In the last 3 months, how often did you have pain in the middle of your chest (not related to heart problems)?	⓪Never→***Skip to question 9*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time
6. Has it been 6 months or longer since you started having this pain in the middle of your chest?	⓪No ①Yes

7. When you had this chest pain, how often did it feel like burning? (Percent of times with this chest pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
8. When you had this symptom of chest pain, how often was it associated with food sticking after swallowing? (Percent of times with this chest pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
9. In the last 3 months, how often did you have heartburn (a burning discomfort or burning pain in your chest)?	⓪Never→***Skip to question 12*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time

10. Did you continue to have heartburn (burning discomfort or burning pain in your chest) when you took twice the standard recommended dose of medication for reflux?	⓪No ①Yes ②I don't know because I have not tried this
11. Has it been 6 months or longer since you started having this heartburn (burning discomfort or burning pain in your chest)?	⓪No ①Yes
12. In the last 3 months, how often did food or drinks get stuck in your chest after swallowing or go down slowly through your chest?	⓪Never→***Skip to question 14*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time
13. Has it been 6 months or longer since you started having this problem in your chest of food getting stuck or going down slowly?	⓪No ①Yes
14. In the last 3 months, how often did you feel so full after a regular-sized meal (the amount you normally eat) that it interfered with your usual activities?	⓪Never→***Skip to question 16*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time

15. Has it been 6 months or longer since you started having these episodes of fullness after meals that was severe enough to interfere with your usual activities?	⓪No ①Yes
16. In the last 3 months, how often were you unable to finish a regular-sized meal because you felt too full?	⓪Never→***Skip to question 18*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time
17. Has it been 6 months or longer since you started having these episodes of feeling too full to finish regular-sized meals?	⓪No ①Yes
18. In the last 3 months, how often did you have pain or burning in the middle part of your upper abdomen (above your belly button but not in your chest), that was so severe that it interfered with your usual activities?	⓪Never→***Skip to question 21*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time

19. When you had this pain or burning in the middle part of your upper abdomen, how often did it stop or get better after bowel movement or passing gas? (Percent of times you had the pain or burning)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
20. Has it been 6 months or longer since you started having this pain or burning in the middle part of your upper abdomen?	⓪No ①Yes
21. In the last 3 months, how often did you have nausea that was so severe that it interfered with your usual activities?	⓪Never→***Skip to question 23*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time
22. Has it been 6 months or longer since you started having this nausea?	⓪No ①Yes

23. In the last 3 months, how often did you vomit?	⓪Never→***Skip to question 32*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time
24. Has it been 6 months or longer since you started having this vomiting?	⓪No ①Yes
25. Did you make yourself vomit? (Percent of times you vomited)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
26. Did you have episodes in the last year of frequent vomiting that started suddenly, lasted up to one week, and then stopped?	⓪No ①Yes
27. Did you have at least three such episodes of frequent vomiting in the last year?	⓪No ①Yes
28. Between the episodes of frequent vomiting, were there one or more weeks when you did not vomit at all?	⓪No ①Yes
29. Did you take hot baths or showers to relieve your vomiting?	⓪No ①Yes
30. Do you use cannabis (pot or marijuana)?	⓪Never →***Skip to question 32*** ①Occasionally ②Regularly

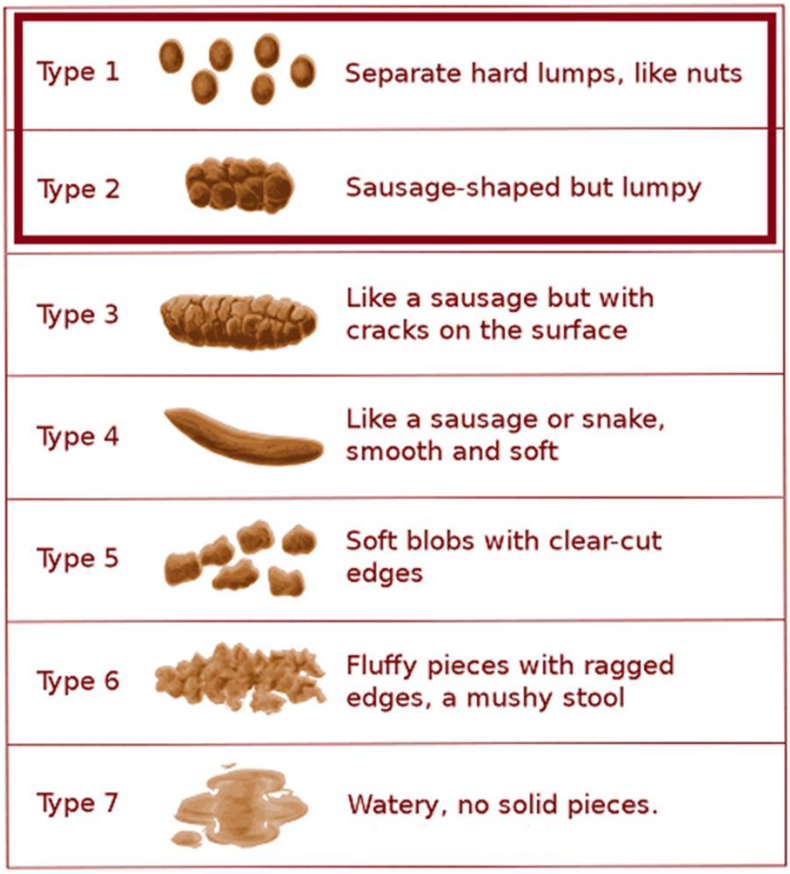
31. When you stopped using cannabis for several weeks, did the vomiting disappear?	⓪No ①Yes ②I don't know because I have not stopped using cannabis that long
32. In the last 3 months, how often did food come back up into your mouth after you swallowed it?	⓪Never→***Skip to question 38*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time

33. Has it been 6 months or longer since you started having this problem (food coming back up into your mouth)?	⓪No ①Yes
34. How often did you have retching (heaving) before food came back up into your mouth? (Percent of times when food came back up)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
35. When food came back up into your mouth, how often did you vomit or feel sick to your stomach? (Percent of times when food came back up)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
36. Did the food stop coming back up into your mouth when it turned sour?	⓪No ①Yes
37. How often was the food that came back up into your mouth recognizable food with a pleasant taste? (Percent of times when food came back up)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always

38. In the last 3 months, how often did you experience belching that was so severe that it interfered with your usual activities?	⓪Never→***Skip to question 40*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time
39. Has it been 6 months or longer since you started having this belching that was severe enough to interfere with your usual activities?	⓪No ①Yes
40. In the last 3 months, how often did you have pain anywhere in your abdomen?	⓪Never→***Skip to question 49*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time
41. How often did this pain in your abdomen happen close in time to a bowel movement -- just before, during, or soon after? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always

42. How often did your stools become either softer than usual or harder than usual when you had this pain? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
43. How often did your stools become either more frequent than usual or less frequent than usual when you had this pain? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
44. For women: How often did your pain get worse with menstrual bleeding? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always OThis question does not apply to me
45. How often did your pain start or get worse after eating a meal? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always

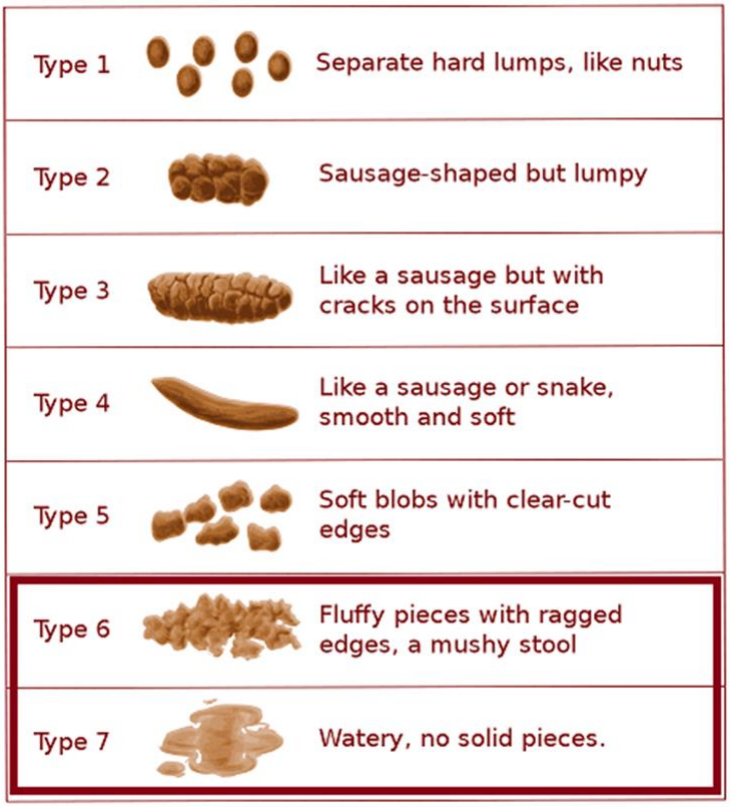
46. When you had this pain, how often did it limit or restrict your usual activities (for example, work, household activities, and social events)? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
47. Has this pain in your abdomen been continuous or almost continuous? (Continuous means that it never goes away during waking hours)	⓪No ①Yes
48. Has it been 6 months or longer since you started having this pain?	⓪No ①Yes



49. In the last 3 months, how often did you have hard or lumpy stools that looked like Type 1 or 2 in the picture above? (Percent of all bowel movements)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
50. Did you have hard or lumpy stools (like Type 1 or 2) when you were not taking drugs for diarrhea?	⓪No, or rarely ①Yes

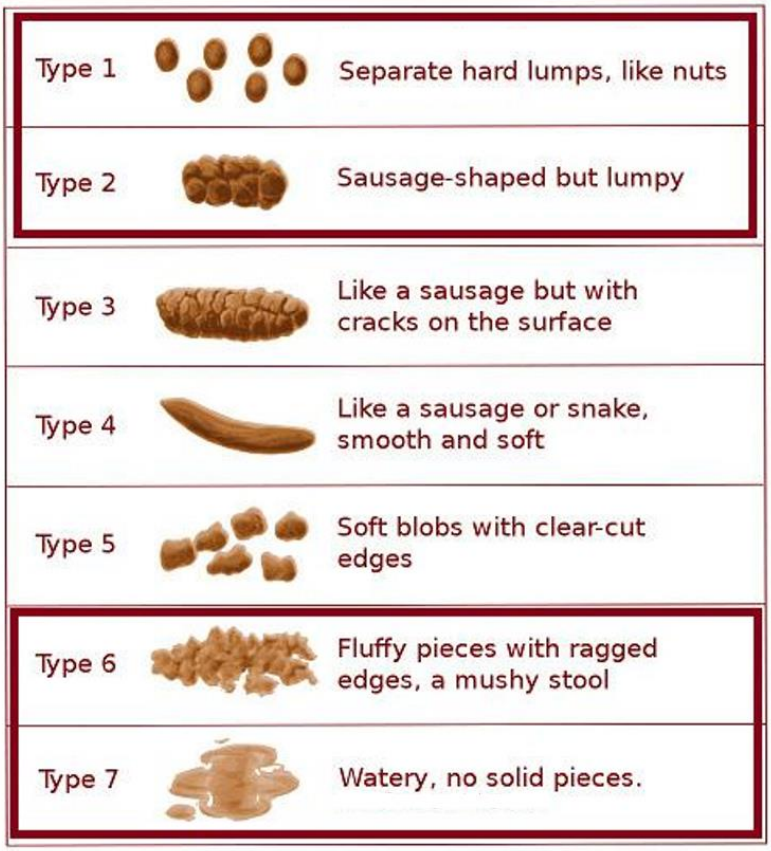
51. In the last 3 months, how often did you have fewer than three bowel movements a week without taking a laxative medication or enema? (Percent of weeks)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
52. In the last 3 months, how often did you strain during bowel movements? (Percent of bowel movements)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
53. In the last 3 months, how often did you have a feeling of incomplete emptying after bowel movements? (Percent of bowel movements)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
54. In the last 3 months, how often did you have a sensation that the stool could not be passed (was blocked), when having a bowel movement? (Percent of bowel movements)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always

55. In the last 3 months, how often did you press on or around your bottom, or remove stool with your fingers, in order to have a bowel movement? (Percent of bowel movements)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
56. Did any of the symptoms of constipation listed in questions 49-55 above begin more than 6 months ago?	⓪No ①Yes
57. Are you currently taking a prescription medication for pain?	⓪No →***Skip to question 59*** ①Yes
58. Have any of the constipation symptoms listed in questions 49-55 above changed since you started taking prescription medication for pain?	⓪No ①Yes



59. In the last 3 months, how often did you have mushy or watery stools that looked like Type 6 or 7 in the picture above when you were not using drugs or other treatment for constipation? (Percent of all bowel movements)	⓪0% Never →***Skip to question 63*** ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
60. Did you have mushy and watery stools (like Type 6 or 7) when you were not using drugs or other treatment for constipation?	⓪No, or rarely ①Yes

61. How often did your symptom of mushy or watery stools happen following a meal? (Percent of mushy or liquid stools)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
62. Has it been 6 months or longer since you started having frequent mushy or watery stools?	⓪No ①Yes
63. In the last 3 months, how often did you have to rush to the toilet to have a bowel movement? (Percent of bowel movements)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always



Bowel movements of Type 1 or 2 and also of Type 6 or 7 in the picture above can be considered to be abnormal. Type 1 or 2 means you are constipated, and Type 6 or 7 means you have diarrhea.

64. In the last 3 months, when you had abnormal stools, what were they usually like?

① Usually constipation (like Type 1 or 2 in the picture)
②Usually diarrhea (like Type 6or 7)
③Both diarrhea and constipation - that is, more than ¼ of all the abnormal bowel movements were constipation and more than ¼ were diarrhea
④Not applicable, because I never or rarely had abnormal bowel movements

65. In the last 3 months, how often did you feel bloated or notice that your belly looked unusually large?	⓪Never→***Skip to question 67*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time
66. Has it been 6 months or longer since you started having this problem of feeling bloated or your belly looking unusually large?	⓪No ①Yes
67. Which of the following has been the most bothersome symptom for you in the last 3 months?	①Abdominal pain ②Watery or mushy stools, or having many bowel movements in a day ③Hard stools or going several days without having a bowel movement ④Bloating or your belly looking unusually large ⑤None of the above, but another symptom: (please write that symptom here): _____

68. In the last 6 months, how often did you have pain in the middle or right side of your upper abdomen?	⓪Never→***Skip to question 80*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time
69. How often did this pain last 30 minutes or longer? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
70. How often did this pain build up to a steady, severe level? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always

71. How often did this pain go away completely between episodes? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
72. How often did this pain stop you from your usual activities, or cause you to see a doctor urgently or go to the emergency department? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
73. How often did this pain in your upper abdomen happen just before, during, or immediately following a bowel movement? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
74. How often was this pain improved by changing your position from lying down to sitting, or from sitting to standing? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always

75. How often was this pain improved by taking medication to reduce acid? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
76. How often was this pain accompanied by nausea or vomiting? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
77. How often was this pain accompanied by pain in your back or your right shoulder blade? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always
78. How often did this pain wake you up from your sleep? (Percent of times with pain)	⓪0% Never ①10% ②20% ③30% ④40% ⑤50% ⑥ 60% ⑦ 70% ⑧80% ⑨90% ⑩100% Always

79. Have you had your gallbladder removed?	⓪No ①Yes

80. In the last 3 months, how often did you have accidental leakage of stool (fecal material)?	⓪Never→***Skip to question 83*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time
81. In the last 3 months, when this leakage occurred, on average what was the amount of stool that leaked?	①A small amount (only enough to stain underwear) ②Moderate amount (more than staining but less than a full bowel movement) ③Large amount (a full bowel movement)
82. Has it been 6 months or longer since you started having accidental leakage of stool?	⓪No ①Yes
83. In the last 3 months, how often have you had aching, pain, or pressure in the rectum when you were not having a bowel movement? (The rectum is the portion of your colon or large bowel just above the anal opening).	⓪Never→***Skip to question 87*** ①Less than one day a month ②One day a month ③Two to three days a month ④Once a week ⑤Two to three days a week ⑥Most days ⑦Every day ⑧Multiple times per day or all the time
84. How long did the aching, pain or pressure usually last?	①One minute or less ②More than a minute but less than 30 minutes ③30 minutes or longer
85. Did the aching, pain or pressure in your rectum usually disappear completely between episodes?	⓪No ①Yes
86. Has it been 6 months or longer since you started having this aching, pain or pressure in the rectum?	⓪No ①Yes

87. In the last 3 months, have you had any of the following symptoms? Check all that apply:	❑ Red blood in your stools two or more times? ❑ Black stools two or more times? ❑ Vomited blood two or more times? ❑ Temperature over 99^0 Fahrenheit (38^0 Centigrade) two or more times? ❑ Unintentionally lost over 10 pounds (4.5 kilograms)? ❑ Major change in bowel movements (change in frequency or consistency)? ❑ Persistent or worsening hoarseness of the voice? ❑ Persistent or worsening neck or throat pain? ❑ Chest pain on exertion or chest pain related to heart problems two or more times? ❑ Difficulty swallowing on two or more occasions?
88. Have you been told by your doctor that you are anemic (a low blood count or low iron)? (If female, not due to your menstrual period)?	⓪No ①Yes
89. Do you have a parent, brother, or sister who has (or had) one or more of the following? Check all that apply:	❑ Cancer of the esophagus, stomach, or colon? ❑ Ulcerative colitis or Crohn's disease? ❑ Celiac disease?

അനുബന്ധം 5
പഠനവിവരണം

അച്യുത മേനോൻ സെന്റർ ഫോർ ഹെൽത്ത് സയൻസ് സ്റ്റഡീസ് (AMCHSS)
ശ്രീചിത്ര തിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഫോർ മെഡിക്കൽ സയൻസസ് ആൻഡ് ടെക്നോളജി (SCTIMST)

തിരുവനന്തപുരം

കേരളത്തിലെ എറണാകുളം ജില്ലയിൽ 18-69 വയസ്പ്രായമുള്ള മുതിർന്നവരിൽ ദഹനനാളത്തിന്റെ പ്രവർത്തനപരമായ രോഗങ്ങളെ (FGIDs) കുറിച്ചുള്ള പഠനം.

എഎംസിഎച്ച്എസ്എസിലെ [AMCHSS] അവസാന വർഷ മാസ്റ്റർ ഓഫ് പബ്ലിക് ഹെൽത്ത് (എംപിഎച്ച്) വിദ്യാർത്ഥിനിയായ ഞാൻ, ഡോ കാർത്തിക സി എം, കേരളത്തിലെ എറണാകുളം ജില്ലയിൽ 18 മുതൽ 69 വയസ്സുവരെയുള്ള മുതിർന്നവർക്കിടയിലെ ദഹനനാളം ആമാശയം വൻകുടൽ ചെറുകുടൽ ആശ്രിതമായ രോഗങ്ങളെക്കുറിച്ച് ഞാൻ ഗവേഷണ പഠനം നടത്തുകയാണ്. ഈ പഠനത്തിലെ നിങ്ങളുടെ പങ്കാളിത്തം വളരെ വിലപ്പെട്ടതാണ്. പങ്കാളിത്തം സംബന്ധിച്ച് അറിവോടെയുള്ള തീരുമാനമെടുക്കാൻ നിങ്ങളെ സഹായിക്കുന്നതിന് പഠനത്തെക്കുറിച്ചുള്ള അവശ്യ വിശദാംശങ്ങൾ നിങ്ങൾക്ക് നൽകുന്നതിനാണ് ഈ വിവര ഷീറ്റ് രൂപകൽപ്പന ചെയ്തിരിക്കുന്നത്.

പഠനത്തിന്റെ ഉദ്ദേശം: കേരളത്തിലെ എറണാകുളം ജില്ലയിൽ താമസിക്കുന്ന 18 നും 69 നും ഇടയിൽ പ്രായമുള്ള മുതിർന്നവരിൽ ദഹനനാളത്തിൻ്റെ പ്രവർത്തനപരമായ രോഗങ്ങളുടെ വ്യാപനം നിർണ്ണയിക്കുക എന്നതാണ് ഈ പഠനത്തിന്റെ പ്രാഥമിക ലക്ഷ്യം.

പഠന നടപടിക്രമങ്ങൾ: നിങ്ങൾ പങ്കെടുക്കാൻ തീരുമാനിക്കുകയാണെങ്കിൽ, ഘടനാപരമായ ഒരു അഭിമുഖത്തിൽ പങ്കെടുക്കാൻ നിങ്ങളോട് ആവശ്യപ്പെടും. ഈ അഭിമുഖത്തിൽ നിങ്ങളുടെ ദഹനനാളത്തിന്റെ ആരോഗ്യം, ജീവിതശൈലി, മെഡിക്കൽ ചരിത്രം, ജനസംഖ്യാപരമായ വിവരങ്ങൾ എന്നിവയെക്കുറിച്ചുള്ള ചോദ്യങ്ങൾ ഉൾപ്പെടുന്നു. അഭിമുഖം പൂർത്തിയാകാൻ ഏകദേശം 60-90 മിനിറ്റ് എടുത്തേക്കാം. നിങ്ങളുടെ വേഗതയിൽ ഉത്തരം നൽകാൻ നിങ്ങൾക്ക് സ്വാതന്ത്ര്യമുണ്ട്, എന്തെങ്കിലും ചോദ്യത്തിൽ നിങ്ങൾക്ക് അസ്വസ്ഥതയുണ്ടെങ്കിൽ, അത് ഒഴിവാക്കാൻ നിങ്ങൾക്ക് അഭ്യർത്ഥിക്കാം.

രഹസ്യാത്മകത: ഈ പഠനത്തിൽ നിങ്ങളുടെ പങ്കാളിത്തം സ്വമേധയാ ഉള്ളതാണ്, നിങ്ങൾ നൽകുന്ന എല്ലാ വിവരങ്ങളും കർശനമായി രഹസ്യമായി സൂക്ഷിക്കും. നിങ്ങളുടെ സ്വകാര്യ വിവരങ്ങൾ ഏതെങ്കിലും ഗവേഷണ റിപ്പോർട്ടുകളിലോ പ്രസിദ്ധീകരണങ്ങളിലോ വെളിപ്പെടുത്തില്ല. അജ്ഞാതത്വം ഉറപ്പാക്കാൻ ഡാറ്റ മൊത്തത്തിലുള്ള രൂപത്തിൽ വിശകലനം ചെയ്യും.

അപകടസാധ്യതകളും നേട്ടങ്ങളും : ഈ പഠനത്തിൽ പങ്കെടുക്കുന്നതുമായി ബന്ധപ്പെട്ട അപകടസാധ്യതകളൊന്നും തന്നെ ഇല്ല. നിങ്ങൾക്ക് നേരിട്ടുള്ള ആനുകൂല്യങ്ങൾ ഉണ്ടാകണമെന്നില്ല, ചില ചോദ്യങ്ങൾ അൽപ്പം അസ്വസ്ഥത ഉണ്ടായേക്കാം, എന്നാൽ നിങ്ങളുടെ പങ്കാളിത്തം സമൂഹത്തിൽ ദഹനസംബന്ധമായ രോഗങ്ങളെക്കുറിച്ചുള്ള ഞങ്ങളുടെ ധാരണ വർദ്ധിപ്പിക്കുന്നതിന് സഹായിക്കും. ഈ അറിവ് ആത്യന്തികമായി മെച്ചപ്പെട്ട ആരോഗ്യപരിചരണ രീതികളിലേക്ക് നയിച്ചേക്കാം, കൂടാതെ ഈ പ്രദേശത്തിനായുള്ള മികച്ച ആരോഗ്യ സംരക്ഷണ തന്ത്രങ്ങൾക്കും ശുപാർശകൾക്കും സംഭാവന നൽകിയേക്കാം.

പങ്കാളിത്തവും പിൻവലിക്കലും: ഈ പഠനത്തിൽ നിങ്ങളുടെ പങ്കാളിത്തം പൂർണ്ണമായും സ്വമേധയാ ഉള്ളതാണ്. ഇന്റർവ്യൂ സമയത്ത് എപ്പോൾ വേണമെങ്കിലും ഈ പഠനത്തിൽ നിന്ന് പിന്മാറാൻ നിങ്ങൾക്ക് അവകാശമുണ്ട്. അസ്വാസ്ഥ്യമുണ്ടാക്കുന്ന ഏതെങ്കിലും പ്രത്യേക ചോദ്യങ്ങൾക്ക് ഉത്തരം നൽകേണ്ടതില്ലെന്ന് നിങ്ങൾക്ക് തീരുമാനിക്കാം.

ബന്ധപ്പെടാനുള്ള വിവരങ്ങൾ: നിങ്ങൾക്ക് പഠനത്തെക്കുറിച്ച് എന്തെങ്കിലും ചോദ്യങ്ങളോ ആശങ്കകളോ ഉണ്ടെങ്കിൽ, നിങ്ങൾക്ക് എന്നെ ബന്ധപ്പെടാം, കാർത്തിക സി എം (എംപിഎച്ച് വിദ്യാർത്ഥി, എഎംസിഎച്ച്എസ്എസ് AMCHSS, എസ്സിടിഎംഎസ്ടി SCTIMST, തിരുവനന്തപുരം). ഒരു ഗവേഷണ പങ്കാളി എന്ന നിലയിലുള്ള നിങ്ങളുടെ അവകാശങ്ങളെക്കുറിച്ച് നിങ്ങൾക്ക് ആശങ്കകളുണ്ടെങ്കിൽ, നിങ്ങൾക്ക് AMCHSS, SCTIMST, TVM എന്നതിലെ സ്ഥാപന അവലോകന ബോർഡുമായി (IRB) ബന്ധപ്പെടാം.

പ്രിൻസിപ്പൽ ഇൻവെസ്റ്റിഗേറ്റർ

കാർത്തിക സി എം
എംപിഎച്ച് വിദ്യാർത്ഥി
AMCHSS, SCTIMST
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അനുബന്ധം 6

സമ്മതപത്രം (മലയാളം)

അച്യുത മേനോൻ സെന്ററർ ഫോർ ഹെൽത്ത് സയൻസ് സ്റ്റഡീസ് (AMCHSS)
ശ്രീചിത്ര തിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഫോർ മെഡിക്കൽ സയൻസസ് ആൻഡ് ടെക്നോളജി (SCTIMST),
തിരുവനന്തപുരം

<u>അനുമതി പത്രം</u>

ഞാൻ ---------- ഗവേഷണ വിവര ഷീറ്റിൽ നൽകിയിരിക്കുന്ന എല്ലാ വിവരങ്ങളും വായിക്കുകയും / കേൾക്കുകയും മനസ്സിലാക്കുകയും ചെയ്തിട്ടുണ്ട്. ഈ പഠനത്തിൽ എൻ്റെ പങ്കാളിത്തം പൂർണ്ണമായും സ്വമേധയാ ഉള്ളതാണെന്ന് ഞാൻ മനസ്സിലാക്കുന്നു. ഈ പഠനത്തിൽ എൻ്റെ സ്വമേധയാ ഉള്ള പങ്കാളിത്തം ഒപ്പിടുന്നതിലൂടെ/ തള്ളവിരലടയാളം ഇടുന്നതിലൂടെ ഞാൻ സ്ഥിരീകരിക്കുന്നു. അഭിമുഖത്തിനിടയിൽ എപ്പോൾ വേണമെങ്കിലും ഒരു വിശദീകരണവുമില്ലാതെ എൻ്റെ പങ്കാളിത്തം പിൻവലിക്കാമെന്നും എൻ്റെ ഐഡന്റിറ്റിയും വ്യക്തിഗത വിവരങ്ങളും രഹസ്യമായി സൂക്ഷിക്കുമെന്നും ഞാൻ മനസ്സിലാക്കുന്നു. കൂടുതൽ വ്യക്തതയ്ക്കായി ആരെയാണ് ബന്ധപ്പെടേണ്ടതെന്ന് എന്നെ അറിയിച്ചിട്ടുണ്ട്. ഈ പഠനത്തിൽ പങ്കെടുക്കാൻ ഞാൻ സമ്മതിക്കുന്നു.

പങ്കെടുക്കുന്നയാളുടെ പേര്:

പങ്കാളിയുടെ ഒപ്പ്:

വിരലടയാളം: സാക്ഷിയുടെ പേരും ഒപ്പും

(ഒപ്പ് ചെയ്യാൻ കഴിയുന്നില്ലെങ്കിൽ)

തീയതി:

അനുബന്ധം 7

സമ്മതപത്രം (മലയാളം)

അച്യുത മേനോൻ സെന്റർ ഫോർ ഹെൽത്ത് സയൻസ് സ്റ്റഡീസ് (AMCHSS)

ശ്രീചിത്ര തിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഫോർ മെഡിക്കൽ സയൻസസ് ആൻഡ് ടെക്നോളജി (SCTIMST),

തിരുവനന്തപുരം

മലയാള ചോദ്യാവലി

തീയതി:

വിഭാഗം 01

Sl No	ചോദ്യം	കോഡിംഗ്മാനദണ്ഡം	കോഡ്ഓപ്ഷനുകൾ	മറ്റുള്ളവ
തിരിച്ചറിയൽവിവരം				
1	പങ്കാളിയുടെഐഡിനമ്പർ (അന്വേഷകൻപൂരിപ്പിക്കണം)			
സാമൂഹിക-ജനസംഖ്യാവിവരങ്ങൾ				
2	വയസ്സ് (വർഷങ്ങളിൽ)	01.01.2024-ന് പൂർത്തിയാക്കിയപ്രായം		
3	ലിംഗഭേദം	പുരുഷൻ	0	
		സ്ത്രീ	1	
		ട്രാൻസ്ജെൻഡർ	2	
		വ്യക്തമാക്കിയിട്ടില്ല	3	
4	വിദ്യാഭ്യാസയോഗ്യത (ഇതുവരെനേടിയിട്ടുള്ളഉയർന്നതലം)	അനൗപചാരിക വിദ്യാഭ്യാസം	**0**	
		ഔപചാരിക-പ്രാഥമികവിദ്യാഭ്യാസം (ഏഴാംക്ലാസ്വരെ)	1	
		സെക്കൻഡറിവിദ്യാഭ്യാസം (പത്താംക്ലാസ്വരെ)	2	
		സീനിയർസെക്കൻഡറിവിദ്യാ	3	

		ഭ്യാസം (ഹയർസെക്കൻഡറി)		
		ബിരുദവുംഅതിനുമുകളിലും	4	
5	നിങ്ങളുടെതൊഴിൽഎന്താണ്?	വിദ്യാർത്ഥി	1	
		സ്വയംതൊഴിൽ-(കർഷകൻ/കടസൂക്ഷിപ്പുകാർ/മേസൺ/ആശാരി/തൊഴിലാളി/ഡ്രൈവർമാർ)	2	
		സർക്കാർജീവനക്കാരൻ	3	
		സർക്കാരിതരജീവനക്കാരൻ-ഐടിമേഖല/മറ്റ്ഓഫീസ്ജോലികൾ/ആരോഗ്യപ്രവർത്തകർ/അക്കൗണ്ടന്റുമാർ / മറ്റുള്ളവർ	4	
		വീട്ടുജോലി	5	
ജീവിതശൈലിഘടകങ്ങൾ				
6	നിങ്ങൾമദ്ധ്യംകഴിക്കാറുണ്ടോ? (ബിയർ, വൈൻ, സ്പിരിറ്റ്, കള്ള്)	ഇല്ല	0	
		ഉണ്ട്	1	
7	നിങ്ങൾനിലവിൽസിഗരറ്റ്പോലെയുള്ളഏതെങ്കിലുംപുകയിലഉൽപ്പന്നങ്ങളോമറ്റ്പ്രാദേശികഉൽപ്പന്നങ്ങളോവലിക്കുന്നുണ്ടോ?	ഇല്ല	0	
		ഉണ്ട്	1	

8	നിങ്ങൾനിലവിൽ [പുകയില, വെറ്റില, മറ്റ്പ്രാദേശികം] പോലുള്ളപുകയില്ലാത്തപുകയിലഉൽപ്പന്നങ്ങൾഉപയോഗിക്കുന്നുണ്ടോ?	ഇല്ല	0	
		ഉണ്ട്	1	
9	നിങ്ങൾഎത്രതവണകാർബണേറ്റഡ്പാനീയങ്ങൾകഴിക്കുന്നു? (സോഡ, കോള, പെപ്സിമുതലായവ)	ദിവസത്തിൽഒരിക്കൽ	0	
		ആഴ്ചയിൽ 2-3 തവണ	1	
		വല്ലപ്പോഴും	2	
		ഒരിക്കലുമില്ല	3	
10	എത്രതവണനിങ്ങൾചായ/കാപ്പികഴിക്കുന്നു?	ദിവസത്തിൽഒന്നോരണ്ടോതവണ	0	
		ദിവസേനരണ്ടിലധികംതവണ	1	
		വല്ലപ്പോഴും	2	
		ഒരിക്കലുമില്ല	3	
മറ്റു രോഗാവസ്ഥകളും മരുന്നുകളുടെചരിത്രവും				
11	നിങ്ങൾക്ക്പ്രമേഹമുണ്ടോ?	ഉണ്ട്	1	(ഉണ്ടെങ്കിൽ) നിങ്ങൾമരുന്ന്കഴിക്കാറുണ്ടോ? (ഉണ്ട്/ഇല്ല)
		ഇല്ല	0	
12	നിങ്ങൾക്രക്കതാദിസമ്മർദ്ധംഉണ്ടോ?	ഉണ്ട്	1	ഉണ്ടെങ്കിൽ) നിങ്ങൾമരുന്ന്കഴിക്കാറുണ്ടോ? (ഉണ്ട്/ഇല്ല)
		ഇല്ല	0	
13	നിങ്ങൾക്ക്തൈറോയ്ഡ്തകരാറുകൾഉണ്ടോ?	ഉണ്ട്	1	ഉണ്ടെങ്കിൽ) നിങ്ങൾമരുന്ന്കഴിക്കാറുണ്ടോ? (ഉണ്ട്/ഇല്ല
		ഇല്ല	0	
14	നിങ്ങളുടെ കൊളസ്ട്രോൾ അളവ് സാധാരണ പരിധിക്കുള്ളിലാണോ?	അതേ	1	അല്ലെങ്കിൽ നിങ്ങൾമരുന്ന്കഴിക്കാറു
		അല്ല	0	

				ണ്ടോ? (ഉണ്ട്/ ഇല്ല
15	കഴിഞ്ഞ 1 മാസത്തിൽനിങ്ങൾഎന്തെങ്കിലുംആന്റിബയോട്ടിക്കുകൾകഴിച്ചിട്ടുണ്ടോ?	ഉണ്ട്	1	
		ഇല്ല	0	
16	നിങ്ങൾക്ക്ഏതെങ്കിലുംതരത്തിലുള്ളഅലർജിയുണ്ടോ?	ഉണ്ട്	1	ഉണ്ടെങ്കിൽ) നിങ്ങൾമരുന്ന്കഴിക്കാറുണ്ടോ? (ഉണ്ട്/ ഇല്ല അലർജിയുടെതരംവ്യക്തമാക്കുക (ഉദ്ധാഹാരംഏതെങ്കിലുംആഹാരത്തിനോട്അലർജി/ മറ്റുതരംഅലർജികൾ, ഏതാണെന്ന്വിശദീകരിക്കുക) …..….
		ഇല്ല	0	
17	നിങ്ങൾക്ക്ഹെമറോയ്ഡുകൾ (പൈൽസ്) / ഫിസ്റ്റുലയുടെഎന്തെങ്കിലുംചരിത്രംഉണ്ടോ?	ഉണ്ട്	1	ഉണ്ടെങ്കിൽ) നിങ്ങൾമരുന്ന്കഴിക്കാറുണ്ടോ? (ഉണ്ട്/ ഇല്ല
		ഇല്ല	0	
18	കഴിഞ്ഞ 1 മാസമായിദഹനസംബന്ധമായ പ്രശ്നങ്ങൾക്ക്നിങ്ങൾമരുന്ന്കഴിക്കുന്നുണ്ടോ?	ഉണ്ട്	1	(ഉണ്ടെങ്കിൽ) പേര്സൂചിപ്പിക്കുക....
		ഇല്ല	0	
19	കഴിഞ്ഞഒരുമാസമായിനിങ്ങൾമറ്റേതെങ്കിലുംഅസുഖത്തിന്മരുന്ന്കഴിക്കുന്നുണ്ടോ?	ഉണ്ട്	1	(ഉണ്ടെങ്കിൽ) പേര്സൂചിപ്പിക്കുക....
		ഇല്ല	0	

വിഭാഗം 02- ROME 4

മുതിർന്നവർക്കുള്ളരോഗനിർണയത്തിനായുള്ളചോദ്യാവലി

ചോദ്യം	ഉത്തരം
1. കഴിഞ്ഞമൂന്ന്മാസകാലയളവിൽതങ്ങളുടെതൊണ്ടയിൽഒരുമുഴയോമറ്റെന്തെങ്കിലും തടസ്സംഉള്ളയതായോഎത്രതവണതോന്നിയിട്ടുണ്ട്?	0.ഒരിക്കലുമില്ല (ചോദ്യം 5 ലേക്പോവുക) 1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ

	2.മാസത്തിൽഒരുദിവസം 3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ 5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം 6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
2.തൊണ്ടയിൽമുഴയോ, മറ്റെന്തെങ്കിലുംതടസ്സംഉള്ളഈതോന്നലുണ്ടായിട്ട് 6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ?	1. ഉണ്ട് 0..ഇല്ല
3.ആഹാരംകഴിക്കുന്നതിൻ്റെഇടവേളകളിൽ(ആഹാരംകഴിക്കാതിരിക്കുമ്പോൾ)താങ്കളുടെതൊണ്ടയിൽമുഴയുള്ളതായോമറ്റെന്തെങ്കിലുംതടസ്സം ഉള്ളയതായോഎത്രതവണതോന്നിയിട്ടുണ്ട്(എത്രതവണതോന്നൽഉണ്ടായെന്ന്ശതമാനത്തിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
4.താങ്കളുടെതൊണ്ടയിൽമുഴയുള്ളതായോമറ്റെന്തെങ്കിലുംതടസ്സം ഉള്ളയതായോതോന്നിയസമയത്ത്എത്രതവണവിഴുങ്ങുമ്പോൾവേദനഅനുഭവപ്പെട്ടു (എത്രതവണവേദനഉണ്ടായെന്ന്ശതമാനത്തിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
5.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽഎപ്പോഴൊക്കെതാങ്കളുടെനെഞ്ചിൻ്റെമദ്ധ്യഭാഗത്തേവേദനഅനുഭവപ്പെട്ടിരുന്നു (ഹൃദയപ്രശ്നങ്ങളുമായിബന്ധപ്പെട്ടതല്ലാതെ)	0.ഒരിക്കലുമില്ല (ചോദ്യം 9 ലേക്പോവുക) 1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ 2.മാസത്തിൽഒരുദിവസം

	3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ 5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം 6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
6.താങ്കളുടെനെഞ്ചിൻറെമധ്യഭാഗത്തെവേദനതുടങ്ങിയിട്ട് 6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ?	1. ഉണ്ട് 0.ഇല്ല
7.നിങ്ങൾക്ക്ഈനെഞ്ചുവേദനഉണ്ടായപ്പോൾഎത്രതവണഅത്നെഞ്ചിൽഎരിച്ചിൽആയിതോന്നി (എത്രതവണഎരിച്ചിൽഉണ്ടായെന്ന്ശതമാനത്തിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
8.നിങ്ങൾക്ക്ഈനെഞ്ചുവേദനഉണ്ടായപ്പോൾ, വിഴുങ്ങുമ്പോൾഭക്ഷണംഒട്ടിയിരിക്കുന്നതായിഎത്രതവണതോന്നി? (എത്രതവണതോന്നൽഉണ്ടായെന്ന്ശതമാനത്തിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
9.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽഎത്രതവണതാങ്കൾക്ക്നെഞ്ചരിച്ചിൽഉണ്ടായിട്ടുണ്ട് (നെഞ്ചരിച്ചിൽഅല്ലെങ്കിൽഎരിച്ചിലോടുകൂടിയവേദന)	0.ഒരിക്കലുമില്ല (ചോദ്യം 12 ലേക്പോവുക) 1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ 2.മാസത്തിൽഒരുദിവസം 3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ

	5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം 6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
10.പുളിച്ചുതികട്ടലിനായിനിർദ്ദേശിച്ചമരുന്നുകൾ ഇരട്ടിഅളവിൽകഴിച്ചിട്ടുംതാങ്കൾക്ക്നെഞ്ചരിച്ചിൽ (നെഞ്ചരിച്ചിൽ /എരിച്ചിലോടുകൂടിയവേദന)ഉണ്ടായിരുന്നോ?	0.ഇല്ല 1.ഉണ്ട് 2.എനിക്കറിയില്ല, ഞാൻമരുന്ന്കഴിച്ചിട്ടില്ല
11.താങ്കൾക്ക്നെഞ്ചരിച്ചിൽഉണ്ടായിട്ട് 6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ? (നെഞ്ചരിച്ചിൽ /എരിച്ചിലോടുകൂടിയവേദന)	0.ഇല്ല 1.ഉണ്ട്
12.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽഭക്ഷണമോപാനീയങ്ങളോവിഴുങ്ങിയശേഷംതാങ്കളുടെനെഞ്ചിൽകുടുങ്ങുന്നതായോനെഞ്ചിലൂടെപതുക്കെതാഴോട്ട്പോകുന്നതയോഎത്രതവണഅനുഭവപ്പെട്ടിട്ടുണ്ട്?	0.ഒരിക്കലുമില്ല (ചോദ്യം 14 ലേക്പോവുക) 1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ 2.മാസത്തിൽഒരുദിവസം 3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ 5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം 6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
13.ഭക്ഷണമോപാനീയങ്ങളോവിഴുങ്ങിയശേഷംതാങ്കളുടെനെഞ്ചിൽകുടുങ്ങുന്നതായോനെഞ്ചിലൂടെപതുക്കെതാഴോട്ട്പോകുന്നതയോഅനുഭവപ്പെട്ടിട്ട് 6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്
14.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽസാധാരണയായിതാങ്കൾകഴിക്കുന്നഅളവിൽഭക്ഷണംകഴിച്ചതിനുശേഷംതാങ്കളുടെപതിവ്പ്രവർത്തനങ്ങളെതട	0.ഒരിക്കലുമില്ല (ചോദ്യം 16 ലേക്പോവുക)

സ്സപ്പെടുത്തുംവിധംഅമിതമായിവയറുനിറഞ്ഞതായിഎത്രതവണതോന്നിയിട്ടുണ്ട്?	1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ 2.മാസത്തിൽഒരുദിവസം 3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ 5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം 6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
15.താങ്കളുടെദൈനംദിനപ്രവർത്തനങ്ങളെബാധിക്കുന്നതരത്തിൽഅമിതമായിവയറുനിറഞ്ഞപോലെതോന്നുന്നആരോഗ്യപ്രേശ്നങ്ങൾആരംഭിച്ചിട്ട് 6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്
16.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽഅമിതമായിവയറുനിറഞ്ഞതായിതോന്നുന്നതിനാൽഎത്രതവണസാധാരണകഴിക്കുന്നഅളവിലുള്ളഭക്ഷണംകഴിക്കാൻസാധിച്ചിട്ടില്ല?	0.ഒരിക്കലുമില്ല (ചോദ്യം 18 ലേക്പോവുക) 1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ 2.മാസത്തിൽഒരുദിവസം 3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ 5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം 6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
17.സാധാരണഅളവിലുള്ളഭക്ഷണംകഴിച്ചുതീർക്കാൻകഴിയാത്തവണ്ണംവയറുനിറയുന്നതായിതോന്നുന്നഈപ്രശ്നംതാങ്കൾഅനുഭവിക്കാൻതുട	0.ഇല്ല 1.ഉണ്ട്

ങ്ങിയിട്ട്6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ	
18.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽതാങ്കളുടെദൈനംദിനപ്രവർത്തനങ്ങളെതടസപ്പെടുത്തുന്നവിധത്തിൽവയറിൻറെമുകളിൽമധ്യഭാഗത്ത് (താങ്കളുടെപൊക്കിളിനുമുകളിൽപക്ഷേനെഞ്ചിൽഅല്ല) എത്രതവണവേദന / എരിച്ചിൽഉണ്ടായിട്ടുണ്ട്?	0.ഒരിക്കലുമില്ല (ചോദ്യം 21 ലേക്പോവുക) 1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ 2.മാസത്തിൽഒരുദിവസം 3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ 5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം 6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
19.താങ്കളുടെവയറിൻറെമുകളിൽമധ്യഭാഗത്വേദനയോഎരിച്ചിലോഉണ്ടായപ്പോൾമലവിസർജനത്തിനുശേഷം, കീഴ്ശ്വാസംപോയതിനുശേഷംവേദന / എരിച്ചിൽമാറിയതായൊകുറവായതായോഎത്രതവണഅനുഭവപ്പെട്ടിട്ടുണ്ട്? (എത്രതവണഅനുഭവപെട്ടിട്ടുണ്ടെന്ന്ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
20.താങ്കളുടെവയറിൻറെമുകൾഭാഗത്ത്ഈവേദനയോ /എരിച്ചിലോതുടങ്ങിയിട്ട് 6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ	0.ഇല്ല 1.ഉണ്ട്
21.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽതാങ്കളുടെദൈനംദിനപ്രവർത്തനങ്ങളെതടസപ്പെടുത്തുന്നവിധത്തിൽഎത്രതവണതാങ്കൾക്ക്ഓക്കാനം /മനംപിരട്ടൽ ഉണ്ടായിട്ടുണ്ട്?	0.ഒരിക്കലുമില്ല (ചോദ്യം 23 ലേക്പോവുക) 1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ 2.മാസത്തിൽഒരുദിവസം 3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ

	5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം 6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
22.താങ്കൾക്ക് ഓക്കാനം /മനംപിരട്ടൽ തുടങ്ങിയിട്ട്6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്
23.കഴിഞ്ഞമൂന്ന്മാസകാലയളവിൽഎത്രതവണ താങ്കൾഛർദ്ധിച്ചു?	0.ഒരിക്കലുമില്ല (ചോദ്യം 32 ലേക്പോവുക) 1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ 2.മാസത്തിൽഒരുദിവസം 3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ 5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം 6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
24.താങ്കൾക്ക് ഛർദ്ധിൽതുടങ്ങിയിട്ട് 6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്
25.താങ്കൾസ്വന്തമായിഛർദ്ധിപ്പിക്കാൻശ്രമിച്ചിട്ടുണ്ടോ?	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും

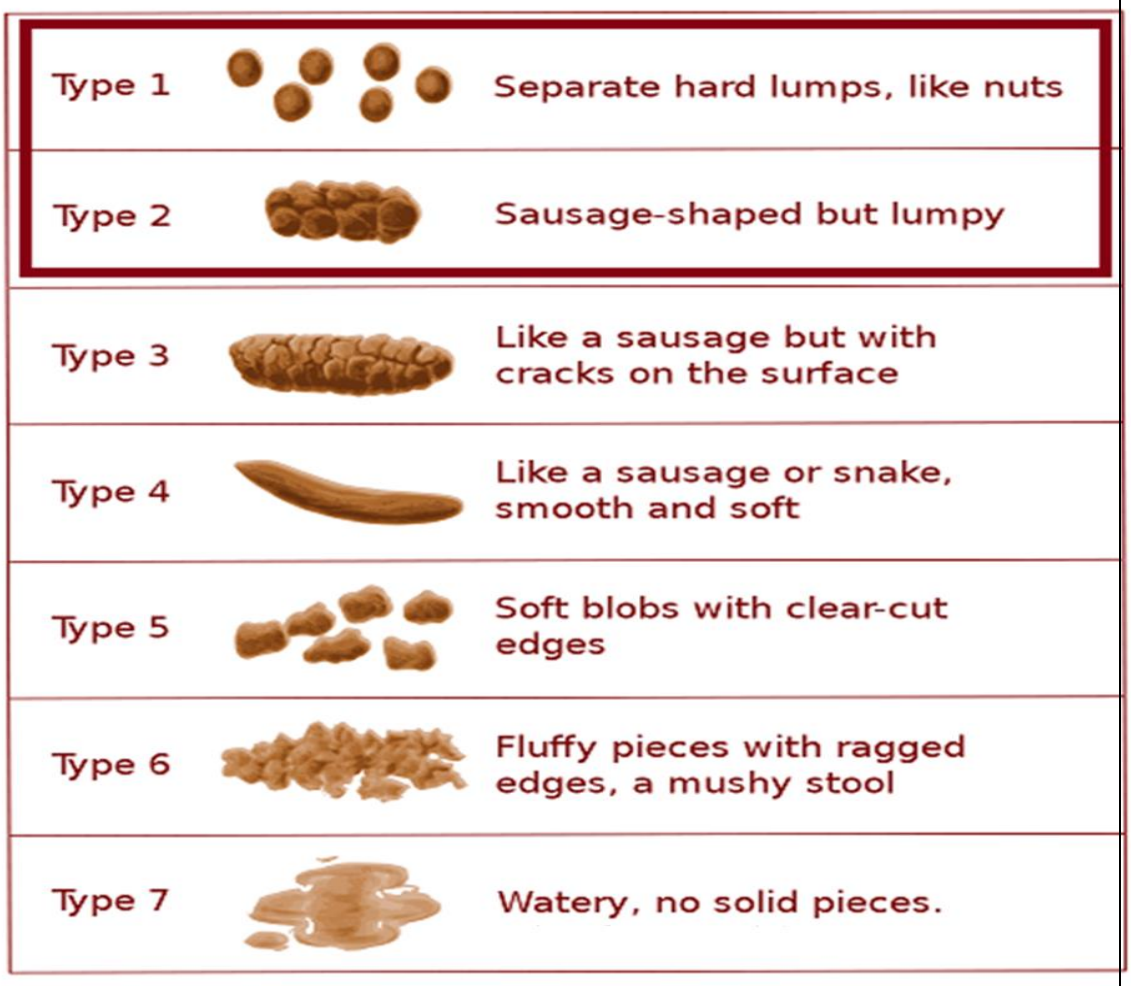
26.പെട്ടെന്ന്തുടങ്ങുകയുംഒരാഴ്ച്ചനീളുകയുംഅവസാനിക്കുന്നതുമായഇടക്കിടക്കുള്ളഛർദ്ധിൽകഴിഞ്ഞവർഷംതാങ്കൾക്ക്ഉണ്ടായിരുന്നോ?	0.ഇല്ല 1.ഉണ്ട്
27.ഇത്തരത്തിലുള്ളഛർദ്ധിൽകഴിഞ്ഞവർഷംകുറഞ്ഞത്മൂന്ന്തവണഎങ്കിലുംതാങ്കൾക്ക്അനുഭവപെട്ടിട്ടുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്
28.തുടർച്ചയായഛർദ്ധിൽഉണ്ടായസമയത്ത്ഒന്നോഅതിലധികമോആഴ്ച്ചഛർദ്ധിക്കാതിരുന്നിട്ടുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്
29.ഛർദ്ധിലിൽനിന്ന്ആശ്വാസംലഭിക്കാൻതാങ്കൾചൂടുവെള്ളത്തിൽകുളിക്കാറുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്
30.താങ്കൾകഞ്ചാവ്ഉപയോഗിക്കുമോ? (കഞ്ചാവ് /മരിജുവാന)	0.ഒരിക്കലുമില്ല(ചോദ്യം 32 ലേക്പോവുക) 1.വല്ലപ്പോഴും 2.പതിവായി
31.താങ്കൾകഞ്ചാവ്ഉപയോഗംഅനേകംആഴ്ചകളായിനിർത്തിയപ്പോൾഛർദ്ധിൽനിന്നുവോ?	0.ഇല്ല 1.ഉണ്ട് 2.ഞാൻകഞ്ചാവ്ഉപയോഗംനിർത്തിയിട്ട്അധികംകാലമായില്ലഅതുകൊണ്ട്എനിക്കറിയില്ല
32.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽആഹാരംകഴിച്ചശേഷംതിരികെവായിലേക്കുതികട്ടിവരാറുള്ളതായിഎത്രതവണഅനുഭവപ്പെട്ടു?	0.ഒരിക്കലുമില്ല (ചോദ്യം 38 ലേക്പോവുക) 1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ 2.മാസത്തിൽഒരുദിവസം 3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ 5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം 6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
33.ആഹാരംകഴിച്ചശേഷംതിരികെവായിലേക്കുതികട്ടിവരുന്നപ്രശ്നംആരംഭിച്ചിട്ട് 6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്

34.ആഹാരംവായിലേക്കുതികട്ടിവരുന്നത്തിനു മുൻപ്എത്രതവണതാങ്കൾക്ക്ഓക്കാനംഅനുഭവപ്പെട്ടിട്ടുണ്ട്? (എത്രതവണതികട്ടിവരൽഉണ്ടായെന്ന്ശതമാനത്തിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
35.ആഹാരംവായിലേക്ക്തികട്ടിവരുമ്പോൾഎത്രതവണതാങ്കൾക്ക്ഛർദ്ധിഅഥവാവയറിന്അസ്വസ്ഥതഉണ്ടായി? (എത്രതവണതികട്ടിവരൽഉണ്ടായെന്ന്ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
36.ഭക്ഷണംപുളിച്ചപ്പോൾ/ദാഹിച്ചപ്പോൾതാങ്കളുടെവായിലേക്ക്തികട്ടിവരുന്നത്നിന്നോ?	0.ഇല്ല 1.ഉണ്ട്
37.താങ്കളുടെവായിലേക്ക്തികട്ടിവരുന്നഭക്ഷണംരുചികരമെന്ന്എത്രതവണതോന്നിയിട്ടുണ്ട്?	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
38.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽതാങ്കളുടെദൈനംദിനപ്രവർത്തനങ്ങളെതടസപ്പെടുത്തുന്നവിധത്തിൽതീവ്രമായഏമ്പക്കംഎത്രതവണഅനുഭവപെട്ടു	0.ഒരിക്കലുമില്ല (ചോദ്യം 40 ലേക്പോവുക) 1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ 2.മാസത്തിൽഒരുദിവസം 3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ 5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം

	6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
39.താങ്കളുടെദൈനംദിനപ്രവർത്തനങ്ങളെതടസപ്പെടുത്തുന്നവിധത്തിൽതീവ്രമായഏമ്പക്കംതുടങ്ങിയിട്ട്6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്
40.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽതാങ്കളുടെവയറ്റിലെവിടെയെങ്കിലുംഎപ്പോഴെങ്കിലുംവേദനഉണ്ടായിരുന്നോ?	0.ഒരിക്കലുമില്ല (ചോദ്യം 49 ലേക്ക് പോവുക) 1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ 2.മാസത്തിൽഒരുദിവസം 3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ 5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം 6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
41.താങ്കൾക്ക്ഈവയറുവേദനമലശോധനക്ക്തൊട്ടുമുൻപോ /വിസർജനസമയത്തോ/അതിനുശേഷമോഎത്രതവണഅനുഭവപ്പെട്ടിട്ടുണ്ട് (എത്രതവണവേദനഉണ്ടായെന്ന്ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും

42.താങ്കൾക്കുവയറുവേദനഉണ്ടായപ്പോൾതാങ്കളുടെമലശോധനസാധാരണയെക്കാൾഅയഞ്ഞതായോമുറുക്കമുള്ളതായോതോന്നിയിട്ടുണ്ട്? (എത്രതവണവേദനഉണ്ടായെന്ന്ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
43.താങ്കൾക്കുവയറുവേദനഉണ്ടായപ്പോൾഎത്രതവണതാങ്കളുടെമലശോധനപതിവിലുംകൂടുതലായോകുറഞ്ഞതായോഅനുഭവപെട്ടു? (എത്രതവണവേദനഉണ്ടായെന്ന്ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
44.സ്ത്രികൾക്ക് :ആർത്തവസമയത്ത്എത്രതവണഈവേദനകൂടിയതായിതോന്നി? (എത്രതവണവേദനഉണ്ടായെന്ന്ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും 11 ഈചോദ്യംഎന്നെബാധിക്കുന്നതല്ല
45.എത്രതവണആഹാരംകഴിച്ചതിനുശേഷംവേദനതുടങ്ങുന്നതായോകൂടുന്നതായോഅനുഭവപെട്ടു? (എത്രതവണവേദനഉണ്ടായെന്ന്ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും

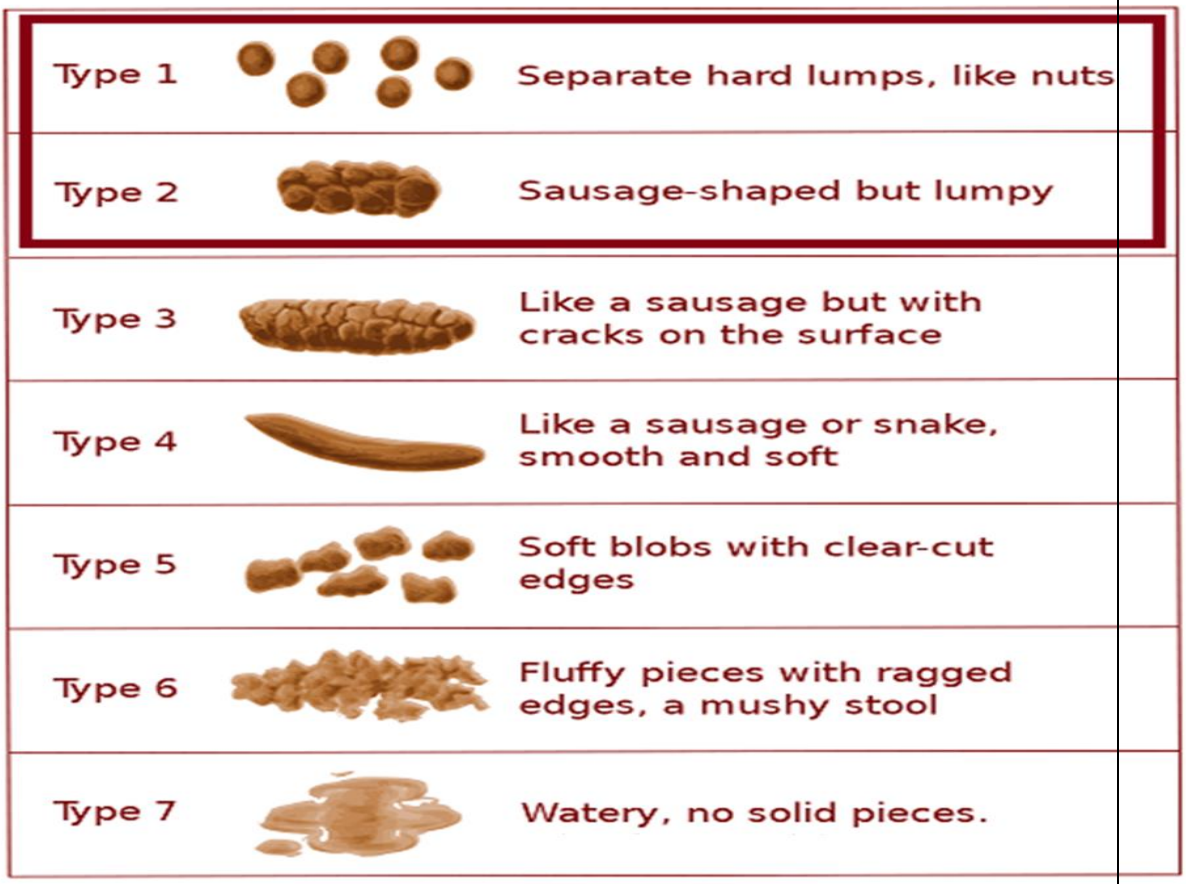
46.താങ്കൾക്കവയറുവേദനഉണ്ടായിരുന്നപ്പോൾഎത്രതവണഅത്താങ്കളുടെദൈനംദിനപ്രവർത്തനങ്ങളെ (ജോലിക്ക്പോവുക,വീട്ടുജോലികൾചെയ്യുക,ചടങ്ങുകളിൽപങ്കെടുക്കുക)തടസപ്പെടുത്തി? (എത്രതവണവേദനഉണ്ടായെന്ന്ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
47.നിങ്ങളുടെഈവയറുവേദനഉണർന്നിരിക്കുമ്പോൾതുടർച്ചയായിഅനുഭവപ്പെട്ടിരുന്നോ?	0.ഇല്ല 1.ഉണ്ട്
48.ഈവയറുവേദനതുടങ്ങിയിട്ട്6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്



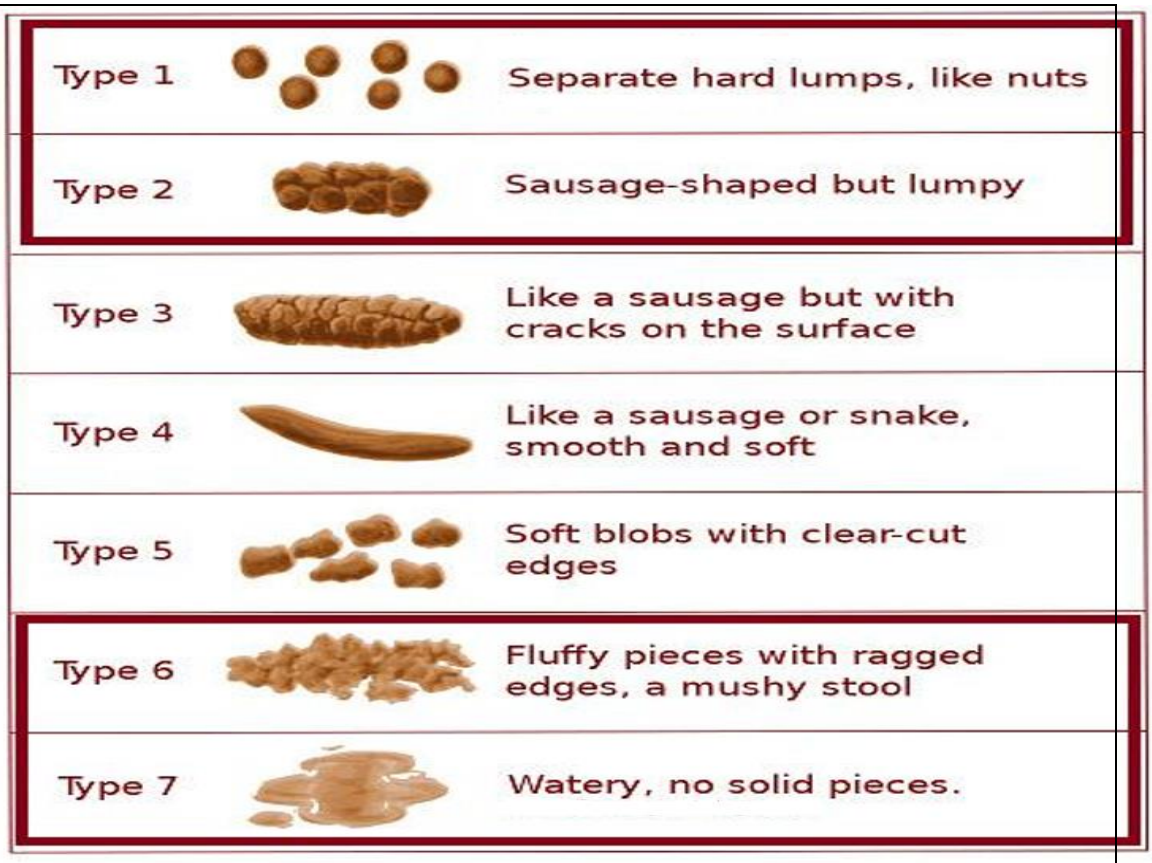
49.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽമുകളിലെചിത്രത്തിൽനൽകിയിട്ടുള്ളടൈപ്പ് 1 അല്ലെങ്കിൽ 2 പോലെതോന്നിപ്പിക്കുന്നകട്ടിയുള്ളതോകട്ടപിടിച്ചതോആയമലശോധനഎത്രതവണഉണ്ടായിട്ടുണ്ട്?	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
50.താങ്കൾവയറിളക്കത്തിന്മരുന്ന്കഴിക്കാത്തപ്പോൾകട്ടിയുള്ളതോകട്ടപിടിച്ചതോആയമലശോധന (ടൈപ്പ്1 അല്ലെങ്കിൽ2 പോലെ)ഉണ്ടായിരുന്നോ?	0.ഇല്ലഅല്ലെങ്കിൽഅപൂർവമായി 1.ഉണ്ട്
51.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽതാങ്കളുടെമലശോധനആഴ്ചയിൽമൂന്ന്തവണയിൽകുറവായിഎത്രതവണഅനുഭവപ്പെട്ടു(ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
52.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽതാങ്കളുടെമലശോധനസമയത്ത്താങ്കൾക്ക്ബലംപ്രയോഗിക്കേണ്ടി/ബുദ്ധിമുട്ടേണ്ടിവന്നിട്ടുണ്ടോ? (ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും

53.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽതാങ്കളുടെമല ശോധനഅപൂർണമായി (മലശോധനക്ക്ശേഷംപൂർണ്ണമായില്ലഎന്നതോന്നൽ)എത്രതവണതോന്നി? (ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
54.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽമലശോധനസമയത്ത്മലംപുറത്തുവരാതെതടസപ്പെട്ടിരിക്കുന്നതുപോലെഎത്രതവണതോന്നി?(ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
55.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽമലശോധനക്കായിഎത്രതവണതാങ്കളുടെഗുദത്തിനുചുറ്റുപാടുംഅമർത്തുകയോകൈവിരലുകൾകൊണ്ട്തള്ളുകയോചെയ്തിട്ടുണ്ട്? (ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
56.മുകളിലെ49 -55 വരെഉള്ളമലബന്ധത്തിൻറെലക്ഷണങ്ങൾ6 മാസത്തിനുമുൻപ്ആരംഭിച്ചിട്ടുണ്ടോ? (കട്ടിയായമലശോധന, ആഴ്ചയിൽമൂന്നുതവണയിലുംകുറവ്മലശോധന, മലംപോകാനുള്ളബുദ്ധിമുട്ട്, പൂർണ്ണമായില്ലഎന്നതോന്നൽമലംപുറത്തവരാനുള്ളതടസ്സം, മുതലായവ)	0.ഇല്ല 1.ഉണ്ട്
57.താങ്കൾനിലവിൽനിർദേശിതമായകുറിപ്പടിപ്രകാരംവേദനക്കുള്ളമരുന്ന്കഴിക്കുന്നുണ്ടോ?	0.ഇല്ല(ചോദ്യം 59 ലേക്പോവുക) 1.ഉണ്ട്

58.കുറിപ്പടിപ്രകാരംവേദനക്കുള്ളമരുന്ന്കഴിച്ചിട്ട്മുകളിൽപറഞ്ഞ 49 -55 വരെയുള്ളമലബന്ധത്തിൻറെലക്ഷണങ്ങളിൽഏതിനെങ്കിലുംമാറ്റംവന്നിട്ടുണ്ടോ	0.ഇല്ല 1.ഉണ്ട്



59.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽമലബന്ധത്തിന്താങ്കൾമരുന്നുകളോമറ്റ്ചികിത്സാകളോഉപയോഗിക്കാതിരുന്നപ്പോൾമുകളിലെചിത്രത്തിലെടൈപ്പ് 6 അല്ലെങ്കിൽ 7 പോലെതോന്നിക്കുന്നമൃദുവോദ്രാവകംപോലെഉള്ളമലശോധനഎത്രതവണഉണ്ടായിട്ടുണ്ട്?	⓪ 0% ഒരിക്കലുമില്ല (ചോദ്യം 63 ലേക്ക്പോവുക) ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
60.താങ്കൾമലബന്ധത്തിന്മരുന്നുകളോമറ്റ്ചികിത്സാകളോഉപയോഗിക്കാതിരുന്നപ്പോൾമുകളിലെചിത്രത്തിലെടൈപ്പ്6 അല്ലെങ്കിൽ7 പോലെതോന്നിക്കുന്നമൃദുവോദ്രാവകംപോലെഉള്ളമലശോധനഉണ്ടായിരുന്നോ?	0.ഇല്ലഅല്ലെങ്കിൽഅപൂർവമായി 1.ഉണ്ട്
61. ഭക്ഷണത്തിനുശേഷംഎപ്പോഴൊക്കെമൃദുവായതോദ്രാവകരൂപത്തിലുള്ളതോആയമലശോധനയുടെലക്ഷണങ്ങൾഉണ്ടായിട്ടുണ്ട്?	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
62. താങ്കൾക്ക്പതിവായിമൃദുവായതോദ്രാവകരൂപത്തിലുള്ളതോആയമലശോധനആരംഭിച്ചിട്ട്6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്
63. കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽമലവിസർജനംനടത്താൻഎത്രപ്രാവശ്യംടോയ്ലെറ്റിലേക്ക്തിരക്കിട്ടുപോകേണ്ടിവന്നു?	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും



മുകളിലെടൈപ്പ് 1 അല്ലെങ്കിൽ 2 ,ടൈപ്പ് 6 അല്ലെങ്കിൽ 7 മലവിസർജ്ജനംഅസാധാരണമായികണക്കാക്കാംടൈപ്പ് 1 ,2 എന്നാൽതാങ്കൾക്ക്മലബന്ധംഉണ്ടെന്നുംടൈപ്പ് 6 ,7 എന്നാൽതാങ്കൾക്കവയറിളക്കംഉണ്ടെന്നുംഅർത്ഥമാകുന്നു

64.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽതാങ്കൾക്ക്അസാധാരണമായമലശോധനഉണ്ടായപ്പോൾഅത് എങ്ങനെയുള്ളതായിരുന്നു?	1 .സാധാരണയായിമലബന്ധം (ചിത്രത്തിലെടൈപ്പ്1 ,2പോലെ) 2 .സാധാരണയായിവയറിളക്കം (ചിത്രത്തിലെടൈപ്പ്6 ,7പോലെ) 3 . വയറിളക്കവുംമലബന്ധവും (രണ്ടും)- 1/ 4ൽഏറേമലവിസർജ്ജനം മലബന്ധമായും,1 / 4ൽഏറേമലവിസർജ്ജനം വയറിളക്കമായും . 4 .ബാധകമല്ല,എനിക്ക്അസാധാരണമായമലശോധ

	നഉണ്ടായിട്ടില്ലഅല്ലെങ്കിൽ വിരളമാണ്
65.കഴിഞ്ഞമൂന്ന്മാസത്തിനിടയിൽതാങ്കൾക്കുവയർവീർത്തതായോഅല്ലെങ്കിൽഅസാധാരണമായവിധംവലുതായതയോകാണപ്പെട്ടോ?	0.ഒരിക്കലുമില്ല (ചോദ്യം 67 ലേക്പോവുക) 1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ 2.മാസത്തിൽഒരുദിവസം 3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ 5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം 6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
66.താങ്കൾക്കുവയർവീർത്തതായോഅല്ലെങ്കിൽഅസാധാരണമായവിധംവലുതായതയോഅനുഭവപ്പെടാൻതുടങ്ങിയിട്ട് 6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്
67. കഴിഞ്ഞ3മാസത്തിനിടയിൽതാങ്കൾക്ക് ഏറ്റവുംഅസ്വസ്ഥതഉണ്ടാക്കിയലക്ഷണംഇവിടെകൊടുത്തിരിക്കുന്നവയിൽഏതാണ്?	1. വയറുവേദന 2. ദ്രവം/മൃദുരൂപത്തിലെമലം/ ദിവസത്തിൽപലതവണയുള്ളമലവിസർജനം 3. മുറുകിയമലം / പലദിവസവുംമാലവിസർജനംനടക്കാതിരിക്കുക 4. വയറുവീർക്കൽ / അസാധാരണമായിവയർവലുതായിതോന്നുക 5. മുകളിൽപറഞ്ഞതൊന്നുംഅല്ലപക്ഷെമറ്റൊരുലക്ഷണം (ദയവായിവിശദീകരി

	ക്കുക ---------- ----------)
68.കഴിഞ്ഞ6 മാസത്തിനിടയിൽതാങ്കളുടെവയറിന്റെമദ്ധ്യഭാഗത്ത്അല്ലെങ്കിൽവയറിന്റെമുകൾഭാഗത്തുവശത്ത്എത്രതവണവേദനഅനുഭവപെട്ടു?	0.ഒരിക്കലുമില്ല (ചോദ്യം 80 ലേക്പോവുക) 1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ 2.മാസത്തിൽഒരുദിവസം 3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ 5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം 6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
69.എത്രതവണഈവേദന30 മിനിറ്റിൽകൂടുതൽനീണ്ടുനിന്നു? (ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
70.എത്രതവണഈവേദനതീവ്രതയോടെതുടരുന്നതായിഅനുഭവപെട്ടു? (ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും

71.ഇത്തരത്തിലുള്ളവേദനയുടെഇടവേളകളിൽ വേദനപൂർണമായുംമാറുന്നതായിഎത്രതവണ തോന്നിയിട്ടുണ്ട്? (ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
72.ഈവേദനഎപ്പോഴൊക്കെതകളുടെദൈനംദിന പ്രവർത്തനങ്ങൾക്ക്തടസ്സമുണ്ടാക്കി, അടിയന്തരമായിഡോക്ടറെകാണുന്നതിന്കാര ണമായിഅല്ലെങ്കിൽഅത്യാഹിതവിഭാഗത്തിൽ പോകുന്നതിന്ഇടയാക്കി? (ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
73.താങ്കളുടെവയറിന്റെമുകൾഭാഗത്തുള്ളഈ വേദനമലവിസർജനത്തിന്തൊട്ട്മുൻപോ /വിസർജനസമയത്തോ /അതിനുശേഷമോഎത്രതവണഅനുഭവപെട്ടു? (ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
74.കിടക്കുകയോഇരിക്കുകയോചെയ്യുന്നഅവ സ്ഥക്ക്മാറ്റമുണ്ടാകുമ്പോൾഅതായത്കിടക്കയി ൽനിന്ന്എഴുന്നേറ്റിരിക്കുക / ഇരിക്കുന്നിടത്തുനിന്നുംഇരുന്നേറ്റ്നിൽക്കുകതുട ങ്ങിയമാറ്റങ്ങൾവരുത്തുമ്പോൾവേദനയുടെകാ ഠിന്യംകുറയുന്നതായിഎത്രതവണഅനുഭവപെ ട്ടു? (ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും

75.അസിഡിറ്റികുറയ്ക്കാനുള്ളമരുന്ന്കഴിക്കുമ്പോൾവേദനഎത്രമാത്രംകുറയുന്നുണ്ട്? (ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
76.ഈവേദനയോടൊപ്പംഓക്കാനം / ചർദ്ധിഎത്രതവണഉണ്ടായി? (ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
77.ഈവേദയയോടൊപ്പംതാങ്കൾക്ക്പുറംവേദനഅല്ലെങ്കിൽവലതുതോൾഭാഗത്തേവേദനഎത്രതവണഉണ്ടായിട്ടുണ്ട്? (ശതമാനനിരക്കിൽപറയാമോ?)	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും
78.ഈവേദനകാരണംതാങ്കൾഉറക്കത്തിൽനിന്നുംഉണർന്നഅവസരങ്ങൾഎത്രതവണഉണ്ടായിട്ടുണ്ട്?	⓪ 0% ഒരിക്കലുമില്ല ① 10% ② 20% ③ 30% ④ 40% ⑤ 50% ⑥ 60% ⑦ 70% ⑧ 80% ⑨ 90% ⑩ 100% എല്ലായിപ്പോഴും

79.താങ്കളുടെപിത്തസഞ്ചിനീക്കംചെയ്യേണ്ടിവന്നിട്ടുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്
80. കഴിഞ്ഞമൂന്നുമാസത്തിനിടയിൽഎപ്പോഴെങ്കിലുംതാങ്കൾഅറിയാതെമലശോധനഉണ്ടായിട്ടുണ്ടോ?	0.ഒരിക്കലുമില്ല (ചോദ്യം 83 ലേക്പോവുക) 1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ 2.മാസത്തിൽഒരുദിവസം 3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ 5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം 6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
81. . കഴിഞ്ഞമൂന്നുമാസത്തിനിടയിൽതാങ്കൾഅറിയാതെമലശോധനഉണ്ടായപ്പോൾഎത്രമാത്രംമലംഉണ്ടായിരുന്നു?	1വളരെകുറച്ചു (അടിവസ്ത്രത്തിൽനിറംപുരളാൻമാത്രം) 2. കുറച്ചുകൂടുതൽ(നിറംപുരളാൻഉള്ളതിനേക്കാളുംകൂടുതൽവളരെകൂടുതൽഅല്ല) 3. വളരെകൂടുതൽ (കൂടുതൽഅളവിൽ)
82.താങ്കൾഅറിയാതെഉള്ളമലശോധനതുടങ്ങിയിട്ട് 6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്
83.കഴിഞ്ഞമൂന്നുമാസത്തിനിടയിൽമലവിസർജ്ജനസമയത്തല്ലാതെമലാശയത്തിൽകഴപ്പ്, വേദന, സമ്മർദ്ദം, എന്നിവഎപ്പോഴൊക്കെഉണ്ടായിട്ടുണ്ട്?	0.ഒരിക്കലുമില്ല (ചോദ്യം 87 ലേക്പോവുക) 1.മാസത്തിൽഒരുദിവസത്തിൽതാഴെ 2.മാസത്തിൽഒരുദിവസം

	3.മാസത്തിൽരണ്ടുമൂന്ന്ദിവസം 4.ആഴ്ച്ചയിൽഒരിക്കൽ 5.ആഴ്ച്ചയിൽരണ്ടോമൂന്നോദിവസം 6.മിക്കവാറുംദിവസങ്ങളിൽ 7.എല്ലാദിവസവും 8.ദിവസത്തിൽപലപ്രാവശ്യംഅല്ലെങ്കിൽഎപ്പോഴും
84.മലാശയത്തിൽകഴപ്പ്, വേദന, സമ്മർദ്ദം, എന്നിവസാധാരണആയിഎത്രസമയംനീണ്ടുനിൽക്കും	1ഒരുമിനിറ്റോഅതിൽകുറവോ 2ഒരുമിനിട്ടിൽകൂടുതൽ30 മിനിറ്റിൽകുറവ് 3.30 മിനിറ്റോആതിൽകൂടുതലോ
85മലാശയത്തിൽകഴപ്പ്, വേദന, സമ്മർദ്ദം, എന്നിവസംഭവിക്കുന്നത്നിശ്ചിതഇടവേളകളിൽപൂർണ്ണമായുംഅപ്രത്യക്ഷംആകാറുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്
86.മലാശയത്തിൽകഴപ്പ്, വേദന, സമ്മർദ്ദം, എന്നിവതുടങ്ങിയിട്ട് 6 മാസമോഅതിൽകൂടുതലോആയിട്ടുണ്ടോ?	0.ഇല്ല 1.ഉണ്ട്
87കഴിഞ്ഞമൂന്നുമാസത്തിനുള്ളിൽതാങ്കൾക്ക്താഴെപറയുന്നഏതെങ്കിലുംലക്ഷണംഉണ്ടായോ? ബാധകമായവഎല്ലാംഅടയാളപ്പെടുത്തുക	0.ഇല്ല 1. രണ്ടോഅതിലധികമോതവണതാങ്കളുടെമാലത്തിൽ

	ചുവന്നരക്തത്തിന്റെസാന്നിദ്ധ്യംഉണ്ടായി 2.രണ്ടോഅതിലധികമോതവണകറുപ്പ്നിറത്തിലുള്ളമലം 3.രണ്ടോഅതിലധികമോതവണരക്തംചേർക്കുക. 4.രണ്ടോഅതിലധികമോതവണശരീരോഷ്മാവ്99F ഉണ്ടായോ? 5.4 - 5Kg ഭാരംഉദ്ദേശരഹിതമായികുറഞ്ഞു 6.മലവിസർജനത്തിൽപ്രധാനമായവ്യത്യാസം 7.ശബ്ദംപരുക്കനായനിൽക്കുകയോഅതിന്റെതീവ്രതകൂടുകയോചെയ്തു 8.രണ്ടോഅതിലധികമോതവണഅദ്വാനിക്കുമ്പോഴുള്ളതോഹൃദയസംബന്ധമായപ്രേശ്നത്താൽഉള്ളതോആയനെഞ്ചുവേദന 9.രണ്ടോഅതിലധികമോതവണവിഴുങ്ങാനുള്ളബുദ്ധിമുട്ട്ഉണ്ടായി
88.താങ്കൾക്കവിളർച്ച (അനീമിയ) ഉണ്ടെന്ന്താങ്കളുടെഡോക്ടർപറഞ്ഞിട്ടുണ്ടോ? (സ്ത്രീകൾക്ക്അര്ഥവമായിബന്ധപ്പെടാതെ)	0.ഇല്ല 1.ഉണ്ട്
89.താങ്കളുടെമാതാപിതാക്കൾ, സഹോദരിസഹോദരന്മാർഇവരിൽആർക്കെങ്കിലുംതാഴെപറയുന്നരോഗങ്ങൾനിലവിൽഉള്ളടയോമുൻപ്ഉണ്ടായതായോഅറിയുമോ?ബാധകമായവഎല്ലാംഅടയാളപ്പെടുത്തുക	1.അന്നനാളം, ആമാശയം, മലാശയത്തിലെകാൻസർ 2.കുടൽപുണ്ണ് (ulcerative colitis)അല്ലെങ്കിൽവായമുതൽമലാശയംവരെഎവിടെങ്കിലുംവീക്കം(crohn's disease) 3.കുടലിലെവീക്കം(celiac disease)

ANNEXURE 8

Scoring Algorithm for the Rome IV Diagnostic Questionnaire for Adults

The diagnostic criteria for each of the disorders of gut-brain interaction are listed below. Following each criterion there is bold and italicized text to indicate (a) the questions in the Rome IV Diagnostic Questionnaire that capture this information and (b) the frequency threshold that defines a clinically significant frequency of occurrence for this symptoms. In the scoring algorithm, “Question” is abbreviated as Q; thus Q3 stands for Question 3.

For some of the disorders of gut-brain interaction, the working teams concluded that clinical evaluation or laboratory tests are required to make the diagnosis. These supplemental tests are identified in red font. There are no questions in the questionnaire for these criteria.

For some disorders, Supportive Criteria were identified. For example in diagnostic criteria for Postprandial Distress Syndrome, the Gastroduodenal Committee indicated, among other supportive criteria, that “vomiting warrants consideration of another disorder,” and “symptoms that are relieved by evacuation of feces or gas should generally not be considered as part of dyspepsia.” These supportive criteria are not included in the scoring algorithm because they are not required for diagnosis, although there are questions in the questionnaire that address some of these supportive criteria.

A. Esophageal Disorders

A1. FUNCTIONAL CHEST PAIN

*Must fulfill **all** of the following for the last 3 months:*

1. Retrosternal chest pain or discomfort at least weekly*
   Q5 = at least 2-3 days per week
2. Absence of associated esophageal symptoms, such as heartburn and dysphagia
   Q7 = 20% or less
   Q8 = 20% or less
3. Absence of evidence that gastroesophageal reflux or eosinophilic esophagitis is the cause of the symptom
   Requires pH/impedance test and upper endoscopy
4. Absence of major esophageal motor disorders†
   Requires esophageal manometry test
5. Symptom onset at least 6 months prior to diagnosis
   Q6 = yes

*Cardiac causes should be ruled out

**Achalasia/EGJ outflow obstruction, diffuse esophageal spasm, Jackhammer esophagus, absent peristalsis

A2. FUNCTIONAL HEARTBURN

*Must fulfill **all** of the following for the last 3 months:*

1. Burning retrosternal discomfort or pain
   Q9 at least 2-3 days per week
2. No symptom relief despite optimal antisecretory therapy
   Q10 = "yes"
3. Absence of evidence that gastroesophageal reflux** or eosinophilic esophagitis is the cause of the symptom
   Requires pH/impedance test and upper endoscopy
4. Absence of major esophageal motor disorders†
   Requires esophageal manometry test
5. Symptom onset at least 6 months prior to diagnosis
   Q11 = yes

**Elevated acid exposure time and/or symptom reflux association

†Achalasia/EGJ outflow obstruction, diffuse esophageal spasm, Jackhammer esophagus, absent peristalsis

A3. REFLUX HYPERSENSITIVITY

*Must fulfill **all** of the following for the past 3 months:*

1. Retrosternal symptoms including heartburn and chest pain
   Q5 = at least 2-3 days per week, AND
   Q9 = at least 2-3 days per week
2. Normal endoscopy and absence of evidence that eosinophilic esophagitis is the cause of the symptoms
3. Absence of major esophageal motor disorders*
4. Evidence of triggering of symptoms by reflux events despite normal acid exposure on pH- or pH-impedance monitoring†
5. Symptom onset at least 6 months prior to diagnosis
   Q6 = yes, AND
   Q11 = yes

*Achalasia/EGJ outflow obstruction, diffuse esophageal spasm, Jackhammer esophagus, absent peristalsis

†Response to antisecretory therapy does not exclude the diagnosis

A4. GLOBUS

*Must fulfill **all** of the following for the last 3 months:*

1. Persistent or intermittent, non-painful sensation of a lump or foreign body in the throat with no structural lesion identified on physical examination, laryngoscopy, or endoscopy
   Q1 = at least weekly
   a. Occurrence of the sensation between meals
      Q3 = more than 50% of the time
   b. Absence of dysphagia or odynophagia
      Q12 = less than one day a month
      Q4 = 20% of the time or less
   c. Absence of a gastric inlet patch in the proximal esophagus
      Requires upper endoscopy
2. Absence of evidence that gastroesophageal reflux or eosinophilic esophagitis is the cause of the symptom
   Requires pH/impedance test and upper endoscopy
3. Absence of major esophageal motor disorders**
   Requires esophageal motility test
4. Symptom onset at least 6 months prior to diagnosis
   Q2 = yes

**Achalasia/EGJ outflow obstruction, diffuse esophageal spasm, Jackhammer esophagus, absent peristalsis

A5. FUNCTIONAL DYSPHAGIA

*Must fulfill **all** of the following criteria for the last 3 months:*

1. Sense of solid and/or liquid foods sticking, lodging, or passing abnormally through the esophagus
   Q12 = at least weekly
2. Absence of evidence that esophageal mucosal or structural abnormality is the cause of the symptom
   Requires upper endoscopy
3. Absence of evidence that gastroesophageal reflux or eosinophilic esophagitis is the cause of the symptom
   Requires pH/impedance test and upper endoscopy
4. Absence of major esophageal motor disorders*
   Requires esophageal motility test
5. Symptom onset at least 6 months prior to diagnosis
   Q13 = yes

**Achalasia/EGJ outflow obstruction, diffuse esophageal spasm, Jackhammer esophagus, absent peristalsis

B. Gastroduodenal Disorders

B1. FUNCTIONAL DYSPEPSIA

Must fulfill criteria for B1a (PDS) or B1B (EPS) below.

B1a. Postprandial Distress Syndrome

*Must fulfill **at least one** of the following at least 3 days a week for the past 3 months:*

1. Bothersome postprandial fullness (i.e., severe enough to impact on usual activities)
   Q14 = at least 2-3 days per week
   Q15 = yes
2. Bothersome early satiation (i.e., severe enough to prevent finishing a regular size meal)
   Q16 = at least 2-3 days per week
   Q17 = yes

No evidence of organic, systemic, or metabolic disease that is likely to explain the symptoms on routine investigations (including at upper endoscopy)

B1b. Epigastric Pain Syndrome

Must fulfill the following criteria at least 1 day a week for the past 3 months:

1. Bothersome epigastric pain (i.e., severe enough to impact on usual activities) OR
2. Bothersome epigastric burning (i.e., severe enough to impact on usual activities)
   Q18 = at least weekly
3. No evidence of organic, systemic, or metabolic disease that is likely to explain the symptoms on routine investigations (including at upper endoscopy).
4. Symptom onset at least 6 months prior to diagnosis
   Q20 = yes

B2. BELCHING DISORDERS

Must fulfill the following criteria for the last 3 months:

1. Bothersome (i.e., severe enough to impact on usual activities) belching from the esophagus or stomach more than 3 days a week
   Q38 = most days
2. Symptom onset at least 6 months prior to diagnosis
   Q39 = yes

B2a. Excessive Supragastric Belching (from esophagus)

B2b. Excessive Gastric Belching (from stomach)

Differentiation between gastric and supragastric belching requires impedance testing.

B3. NAUSEA AND VOMITING DISORDERS

B3a. Chronic Nausea and Vomiting Syndrome

*Must fulfill **all** of the following criteria for the last 3 months:*

1. At least one of the following:
    1. Bothersome nausea (i.e. severe enough to impact on usual activities)
        Q21 = at least weekly
        Q22 = yes
    2. Vomiting
        Q23 = at least weekly
        Q24 = yes
2. Self-induced vomiting is excluded
    Q25 is 20% or less
3. Eating disorders, regurgitation, and rumination are excluded
4. No evidence of organic, systemic, or metabolic diseases that is likely to explain the symptoms on routine investigations (including at upper endoscopy)

B3b. Cyclic Vomiting Syndrome

*Must fulfill **all** of the following criteria for the last 3 months:*

1. Stereotypical episodes of vomiting regarding onset (*acute*) and duration (*less than one week*)
    Q26 = yes
2. At least three discrete episodes in the prior year and two episodes in the past six months, occurring at least one week apart
    Q27 = yes
3. Absence of vomiting between episodes
    Q28 = yes
4. Symptom onset at least 6 months prior to diagnosis
    Q24 = yes

B3c. Cannabinoid Hyperemesis Syndrome

*Must fulfill **all** of the following:*

1. Stereotypical episodic vomiting resembling cyclic vomiting syndrome (CVS) in terms of onset, duration, and frequency
    Q26 = yes
    Q27 = yes
2. Presentation after prolonged use of cannabis
    Q30 = regular use
3. Relief of vomiting episodes by sustained cessation of cannabis use
    Q31 = yes or “don’t know because I have not stopped using that long”

4. Symptom onset at least 6 months prior to diagnosis
   Q24 = yes

B4. RUMINATION SYNDROME

*Must fulfill **all** of the following criteria for the last 3 months:*

1. Persistent or recurrent regurgitation of recently ingested food into the mouth with subsequent spitting or remastication and swallowing
   Q32 = at least 2-3 days per month
2. Regurgitation is not preceded by retching
   Q34 = 20% or less often
3. Symptom onset at least 6 months prior to diagnosis
   Q33 = yes

C. Bowel Disorders

C1. IRRITABLE BOWEL SYNDROME

Must fulfill the following criteria for the past 3 months:

1. Recurrent abdominal pain
   Q40 = at least weekly
2. Pain is associated with **two or more** of the following criteria:
   a. Related to defecation
      Q41 = at least 30% of occasions
   b. Associated with a change in frequency of stool
      Q42 = at least 30% of occasions
   c. Associated with a change in form (appearance) of stool
      Q43 = at least 30% of occasions
3. Symptom onset at least 6 months prior to diagnosis
   Q48 = yes

IBS Subtypes

When using the Rome IV Diagnostic Questionnaire, IBS subtypes are based on patient perception of the usual consistency of abnormal stools. Question 64 uses a picture of the Bristol Stool Scale to define abnormal stools and to classify them as follows:

IBS-C if abnormal stools are usually constipation (types 1-2),
IBS-D if abnormal stools are usually diarrhea (types 6-7),
IBS-M if abnormal stools are mixed with at least 1/4 constipation AND at least 1/4 diarrhea,
IBS-U if the subject never or rarely has abnormal stools

C2. FUNCTIONAL CONSTIPATION

Must fulfill all of the following 4 criteria during the last 3 months:

1. Must fulfill **two or more** of the following:*
   a. Straining with defecation
      Q52 = at least 50% of stools
   b. Lumpy or hard stools (Bristol Stool Form Scale 1-2)
      Q49 = at least 50% of stools
      Q50 = yes
   c. Sensation of incomplete evacuation
      Q53 = at least 50% of stools
   d. Sensation of anorectal obstruction/blockage
      Q54 = at least 40% of stools
   e. Manual maneuvers to facilitate defecation
      Q55 = at least 20% of stools
   f. Fewer than three spontaneous stools per week
      Q51 = at least 40% of stools
2. Loose stools are rarely present without the use of laxatives
   Q60 = “no or rarely”, OR
   Q59 = 20% or less of stools
3. Insufficient criteria for irritable bowel syndrome or OIC*
4. Symptom onset at least 6 months prior to diagnosis
   Q56 = yes

*For research studies, the thresholds used to define an abnormal frequency below were determined by the Rome Normative GI Symptom Survey as the 90th percentile of symptom frequency for the population. However, for clinical use the thresholds are 25% or greater for all six symptoms of constipation.

**For research studies, patients meeting criteria for IBS or opioid-induced constipation (OIC) should not be given a

diagnosis of FC. However, clinicians recognize that these conditions may overlap.

C3. FUNCTIONAL DIARRHEA

Must fulfill all of the following criteria for the last 3 months:

1. Loose or watery stools
   Q59 = at least 30% of stools
2. Without predominant abdominal pain or bothersome bloating
   Q67 = diarrhea (is the most bothersome symptom)
3. Symptom onset at least 6 months prior to diagnosis
   Q62 = yes
4. Patients meeting criteria for IBS-D should be excluded.

C4. FUNCTIONAL ABDOMINAL BLOATING/DISTENSION

*Must fulfill **all** of the following criteria for the last 3 months:*

1. Recurrent bloating and/or distension
   Q65 = at least weekly
2. Abdominal bloating and/or distension predominates over other symptoms
   Q67 = bloating or distension is most bothersome symptom
3. There are insufficient criteria for a diagnosis of irritable bowel syndrome, functional constipation, functional diarrhea, or post-prandial distress syndrome.
4. Symptom onset at least 6 months prior to diagnosis
   Q66 = yes

C5. UNSPECIFIED FUNCTIONAL BOWEL DISORDER

Must have at least one of the following bowel symptoms for the past 3 months with symptom onset at least 6 months prior to diagnosis:

1. Abdominal pain
   Q40 = at least weekly
   Q48 = yes
2. Constipation (any one of 6 symptoms) plus Q56 = yes
   a. Q52 = at least 50% of stools
   b. Q49 = at least 50% of stools
   c. Q53 = at least 50% of stools
   d. Q54 = at least 40% of stools
   e. Q55 = at least 20% of stools
   f. Q51 = at least 40% of stools
3. Diarrhea
   Q59 = at least 30% of stools
   Q60 = yes
4. Bloating or distention

Q65 = at least weekly
Q66 = yes

5. Does not meet criteria for IBS, FC, OIC, FDr, FAB/D, or PDS.

C6. OPIOID-INDUCED CONSTIPATION

Must fulfill all of the following criteria for the past 3 months:

1. Currently taking prescription medication for pain
   Q57 = yes
2. New, or worsening, symptoms of constipation when initiating, changing, or increasing opioid therapy
   Q58 = yes
3. Must fulfill *two or more* of the following:
   a. Straining with defecation
      Q52 = at least 50% of stools
   b. Lumpy or hard stools (Bristol Stool Form Scale 1-2)
      Q49 = at least 50% of stools
      Q50 = yes
   c. Sensation of incomplete evacuation
      Q53 = at least 50% of stools
   d. Sensation of anorectal obstruction/blockage
      Q54 = at least 40% of stools
   e. Manual maneuvers to facilitate defecation
      Q55 = at least 20% of stools
   f. Fewer than three spontaneous stools per week
      Q51 = at least 40% of stools
4. Loose stools are rarely present without the use of laxatives
   Q60 = “no or rarely”, OR
   Q59 = 20% or less of stools

D. Central Nervous System Disorders of GI Pain

D1. CENTRALLY MEDIATED ABDOMINAL PAIN SYNDROME*

*Must fulfill **all** of the following criteria for the past 3 months:*

1. Continuous or nearly continuous abdominal pain
   Q40 = at least weekly
   Q47 = yes
2. No or only occasional relationship of pain with physiological events (e.g., eating, defecation or menses)†
   Q45 = 20% or less
   Q41 = 20% or less
   Q44 = 20% or less OR Q44 = not applicable

3. Pain limits some aspect of daily functioning††
   Q46 = at least 30%
4. The pain is not feigned
5. Pain is not explained by another structural or functional gastrointestinal disorder or other medical condition
6. Symptom onset at least 6 months prior to diagnosis
   Q48 = yes

†Some degree of gastrointestinal dysfunction may be present

††Daily function could include impairments in work, intimacy, social/leisure, family life, and caregiving for self or others

D2. NARCOTIC BOWEL SYNDROME/OPIOID-INDUCED GI HYPERALGESIA

Diagnosis requires physician interpretation of medical history; it cannot be diagnosed by self-report questionnaire.

E. Gallbladder and Sphincter of Oddi Disorders

E1. BILIARY PAIN

Must fulfill all of the following criteria for the past 3 months:

1. Pain located in the epigastrium and/or right upper quadrant
   Q68 = at least 2-3 days per month
2. Pain fulfills all of the following criteria:
   - **a.** Builds up to a steady level
     Q70 = at least 30% of pain episodes
   - **b.** Lasts 30 minutes or longer
     Q69 = at least 30% of pain episodes
   - **c.** Occurring at different intervals (not daily) [For understandability, this was translated as “Disappears entirely between episodes”]
     Q71 = at least 30% of pain episodes
   - **d.** Severe enough to interrupt daily activities or lead to an emergency department visit
     Q72 = at least 30% of pain episodes
   - **e.** Not significantly related to bowel movements
     Q73 = 10% or less of pain episodes
   - f. Not significantly relieved by postural change

Q74 = 10% or less of pain episodes

g. Not significantly related to acid suppression

Q75 = 10% or less of pain episodes

3. Symptom onset at least 6 months prior to diagnosis

E1a. Functional Gallbladder Disorder

*Must include **both** of the following for the past 3 months with symptom onset at least 6 months prior to diagnosis:*

1. Criteria for biliary pain*
2. Absence of gallstones or other structural pathology

E1b. Functional Biliary Sphincter of Oddi Disorder

*Must include **all** of the following for the past 3 months with symptom onset at least 6 months prior to diagnosis:*

1. Criteria for biliary pain*
2. Elevated liver enzymes or dilated bile duct, but not both
3. Absence of bile duct stones or other structural abnormalities

E2. FUNCTIONAL PANCREATIC SPHINCTER OF ODDI DISORDER

*Must include **all** of the following for the past 3 months with symptom onset at least 6 months prior to diagnosis:*

1. Documented recurrent episodes of pancreatitis (typical pain with amylase or lipase >3 times normal and/or imaging evidence of acute pancreatitis)
2. Other etiologies of pancreatitis excluded
3. Negative endoscopic ultrasound
4. Abnormal sphincter manometry

F. Anorectal Disorders

F1. FECAL INCONTINENCE

Must meet all criteria for the past 3 months:

1. Recurrent uncontrolled passage of fecal material in an individual with a developmental age of at least 4 years

   Q80 = at least 2-3 days a month

2. Symptom onset at least 6 months prior to diagnosis*

   Q82 = yes

*For clinical purposes, less frequent fecal incontinence or shorter duration of symptoms may suffice to initiate treatment.

F2. FUNCTIONAL ANORECTAL PAIN

F2a. Levator Ani Syndrome

*Must include **all** of the following criteria for the past 3 months:*

1. Chronic or recurrent rectal pain or aching
   Q83 = at least one day per month
2. Episodes last 30 minutes or longer
   Q84 = 30 minutes or longer
3. Tenderness during traction on the puborectalis
4. Exclusion of other causes of rectal pain such as inflammatory bowel disease, intramuscular abscess, anal fissure, thrombosed hemorrhoids, prostatitis, coccygodynia and major structural alterations of the pelvic floor
5. Symptom onset at leat 6 months prior to diagnosis
   Q86 = yes

F2b. Unspecified Functional Anorectal Pain

*Must include **all** of the following criteria for the past 3 months:*

1. Chronic or recurrent rectal pain or aching
   Q83 = at least one day per month
2. Episodes last 30 minutes or longer
   Q84 = 30 minutes or longer
3. Without tenderness during traction on the puborectalis
4. Exclusion of other causes of rectal pain such as inflammatory bowel disease, intramuscular abscess, anal fissure, thrombosed hemorrhoids, prostatitis, coccygodynia and major structural alterations of the pelvic floor
5. Symptom onset at leat 6 months prior to diagnosis
   Q86 = yes

F2c. Proctalgia Fugax

*Must include **all** of the following for the past 3 months:*

1. Recurrent episodes of pain localized to the rectum and unrelated to defecation
   Q83 = at least one day per month
2. Episodes last from seconds to minutes
   Q84 = less than 30 minutes
3. There is no anorectal pain between episodes
   Q85 = yes

4. Exclusion of other causes of rectal pain such as inflammatory bowel disease, intramuscular abscess, anal fissure, thrombosed hemorrhoids, prostatitis, coccygodynia and major structural alterations of the pelvic floor
5. Symptom onset at leat 6 months prior to diagnosis

Q86 = yes

F3. FUNCTIONAL DEFECATION DISORDER

*Must include **all** of the following criteria for the past 3 months:*

1. The patient must satisfy diagnostic criteria for functional constipation and/or irritable bowel syndrome with constipation
2. During repeated attempts to defecate, there must be features of impaired evacuation, as demonstrated by 2 of the following 3 tests:
   a. Abnormal balloon expulsion test
   b. Abnormal anorectal evacuation pattern with manometry or anal surface EMG
   c. Impaired rectal evacuation by imaging

Subcategories F3a and F3b apply to patients who satisfy criteria for FDD

F3a. Inadequate Defecatory Propulsion

Must fulfill all diagnostic criterion for past 3 months with symptom onset at least 6 months prior to diagnosis.

1. Meets criteria for FC or IBS-C
2. Inadequate propulsive forces as measured with manometry or without inappropriate contraction of the anal sphincter and/or pelvic floor muscles**

F3b. Dyssynergic Defecation

Must fulfill all diagnostic criterion for past 3 months with symptom onset at least 6 months prior to diagnosis.

1. Meets criteria for FC or IBS-C
2. Inappropriate contraction of the pelvic floor as measured with anal surface EMG or manometry with adequate propulsive forces during attempted defecation

Table 2. Functional Gastrointestinal Disorders: Disorders of Gut–Brain Interaction

A. Esophageal Disorders	
A1. Functional chest pain	A4. Globus
A2. Functional heartburn	A5. Functional dysphagia
A3. Reflux hypersensitivity	

B. Gastroduodenal Disorders	
B1. Functional dyspepsia	B3. Nausea and vomiting disorders
B1a. Postprandial distress syndrome (PDS)	B3a. Chronic nausea vomiting syndrome (CNVS)
B1b. Epigastric pain syndrome (EPS)	B3b. Cyclic vomiting syndrome (CVS)
B2. Belching disorders	B3c. Cannabinoid hyperemesis syndrome (CHS)
B2a. Excessive supragastric belching	B4. Rumination syndrome
B2b. Excessive gastric belching	

C. Bowel Disorders	
C1. Irritable bowel syndrome (IBS)	C2. Functional constipation
IBS with predominant constipation (IBS-C)	C3. Functional diarrhea
IBS with predominant diarrhea (IBS-D)	C4. Functional abdominal bloating/distension
IBS with mixed bowel habits (IBS-M)	C5. Unspecified functional bowel disorder
IBS unclassified (IBS-U)	C6. Opioid-induced constipation

D. Centrally Mediated Disorders of Gastrointestinal Pain
D1. Centrally mediated abdominal pain syndrome (CAPS)
D2. Narcotic bowel syndrome (NBS)/ Opioid-induced GI hyperalgesia

E. Gallbladder and Sphincter of Oddi (SO) Disorders
E1. Biliary pain
E1a. Functional gallbladder disorder
E1b. Functional biliary SO disorder
E2. Functional pancreatic SO disorder

F. Anorectal Disorders	
F1. Fecal incontinence	F2c. Proctalgia fugax
F2. Functional anorectal pain	F3. Functional defecation disorders
F2a. Levator ani syndrome	F3a. Inadequate defecatory propulsion
F2b. Unspecified functional anorectal pain	F3b. Dyssynergic defecation

G. Childhood Functional GI Disorders: Neonate/Toddler	
G1. Infant regurgitation	G5. Functional diarrhea
G2. Rumination syndrome	G6. Infant dyschezia
G3. Cyclic vomiting syndrome (CVS)	G7. Functional constipation
G4. Infant colic	

H. Childhood Functional GI Disorders: Child/Adolescent	
H1. Functional nausea and vomiting disorders	H2a1. Postprandial distress syndrome
H1a. Cyclic vomiting syndrome (CVS)	H2a2. Epigastric pain syndrome
H1b. Functional nausea and functional vomiting	H2b. Irritable bowel syndrome (IBS)
H1b1. Functional nausea	H2c. Abdominal migraine
H1b2. Functional vomiting	H2d. Functional abdominal pain – NOS
H1c. Rumination syndrome	H3. Functional defecation disorders
H1d. Aerophagia	H3a. Functional constipation
H2. Functional abdominal pain disorders	H3b. Nonretentive fecal incontinence
H2a. Functional dyspepsia	

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WHEREAS, ROME is willing to provide Licensee with a license, pursuant to the terms and conditions of this Agreement; and

NOW THEREFORE, the parties agree as follows:

AGREEMENT

1. Grant of License.

1.1. Grant. Subject to the terms and conditions of this Agreement, and during the Term of this Agreement, ROME grants to Licensee a nonexclusive, non-transferable, non-assignable (except for as provided herein) license **("Licensee")** to the Content described in **Exhibit A.**

ROME acknowledges that the Study may be conducted by Licensee, its affiliates and/or their contractors and agrees that the rights granted to Licensee under this Agreement will also benefit to such affiliates and contractors only to the extend necessary for the conduct of the study.

ROME acknowledges that Licensee may have to communicate the instrument(s) to ethics committees, Institution Review Boards or any regulatory authorities to conduct the Study and ROME hereby authorizes such communication.

Usage. The License shall be limited to the purpose of using the instrument to for thesis work ("**Licensee Course**").

Usage by Licensee shall further be limited by Licensor's Right of Editorial Control. No deletions, alterations, or changes may be made to the Content without the written consent of ROME.

1.2 . Right of Editorial Control. In the event ROME believes in its sole discretion that a particular use of, access by, or display by or of Content by Licensee will have an adverse effect on the image or reputation of ROME, Licensee shall modify such use, access, or display of the Content to address ROME's concerns.

1.3 . **Reservation of Rights.** All other rights with respect to the Content (including any reproductions or derivative works thereof), whether now existing or which may hereafter come into existence, which are not expressly granted to Licensee herein, are reserved in ROME.

2. Term and Termination.

Term. The initial term ("**Term**") of this Agreement shall cover the duration of use specified in Section 1.1 from the Effective Date and according to the terms specified (if any) in Exhibit A.

Renewal. This contract covers the duration of this particular use specified in Section 1.1 and ends when this intended use is completed.

2.1. Termination. Any party may terminate this Agreement:

2.1.1. if there is a material breach, and such breach is not cured within ten (10) days of receipt of notice concerning such breach; or
2.1.2. if a party enters bankruptcy proceedings; or if a party ceases to operate or becomes insolvent.

2.2. Obligations Upon Termination or Expiration. Upon expiration or termination of this Agreement, Licensee shall (i) immediately cease using, accessing, displaying or otherwise making available all Content; (ii) within ten (10) days after expiration or termination, destroy or render inaccessible Content provided by ROME, in any and all forms, along with a written certification that all such materials have been destroyed or rendered inaccessible; and (iii) within ten (10) days after termination or expiration, pay to ROME all sums then owed and outstanding. Upon termination or expiration of this Agreement, all rights granted herein shall automatically revert to ROME without further notice.

2.3. Refunds. This copyright license is based on the requested anticipated number of instruments and translations and based on this, the license fee is nonrefundable upon a fully executed agreement.

3. Fees/Royalties.

3.1. Flat Fee. In consideration of the License granted in this Agreement, Licensee shall pay to ROME a fee of **$0.00 USD** following full execution of this agreement and within (30) days of receipt of invoice.

3.2. Billing and Payment. For faster processing time, a wire is preferred over mailing a check. Wire instructions can be found below. If additional invoice needs to be created for the Licensee, the Rome Foundation will provide this within 10 (ten) days of this agreement being executed and upon validation of the License. Licensee agrees to pay the invoice within 30 days of receipt. The payment shall be sent to the Rome Foundation at the wire instructions below, or by mail to 14460 Falls of Neuse Rd. Ste. 149-116 Raleigh, NC 27614. The Fees shall be exclusive of any sales, use, value added, withholding or similar tax and the Licensee shall be liable for any such taxes.

ROME FOUNDATION WIRE TRANSFER INSTRUCTIONS

Bank Name: **Pinnacle Bank**

International Wires: 150 3rd Avenue South Nashville, TN 37201

Bank Phone: 866-755-5428

Incoming Wire Routing/ABA: 064008637

Beneficiary Account Number: 800108337197

SWIFT Code: **PNFPUS44**

ACH PAYMENTS DOMESTIC ONLY
Rome Foundation

Routing number: 064008637

Account number: 800108337197

4. Proprietary Rights.

4.1. Ownership. Licensee acknowledges and agrees that the Content is and shall remain the exclusive property of ROME. Licensee shall not reproduce, copy, sell, sublicense, lease, display, perform, modify, transfer or distribute the ROME Content and any derivative works thereof, other than as expressly permitted by this Agreement.

4.2. Copyright Notice. All Content (including any promotional materials in which the Content or ROME Marks appear) shall bear the following copyright notice (or other reasonable notices requested by ROME):

4.2.1. Images: "*Copyright (or ©) 2016 Rome Foundation, Inc. All Rights Reserved."*
4.2.2. Reprints: "*Reprinted with permission from the Rome Foundation; all rights reserved."*

4.3. Trademark Usage. Neither party shall use any of the other's marks, logos or other identifiers ("**Marks**") in any manner, without the trademark owner's prior written approval. The parties reserve the right to review any proposed use of their respective Marks and to require changes in such further use, and the other agrees to comply with any such requirements. Each party acknowledges and agrees that: (i) it shall not use the other's Marks in a manner likely to diminish the Marks' commercial value; (ii) it shall not knowingly permit any third party to use the other's Marks unless authorized to do so in writing; (iii) it shall not knowingly use or permit the use of any mark, name, or image likely to cause confusion with the other's Marks; (iv) all goodwill associated with use of the Marks shall inure to the party owning the Marks; (v) the Marks are and shall remain the sole property of their owner; (vi) nothing in this Agreement shall confer in either party any license rights or right of ownership in the other's Marks (and Licensee shall not make any representation to that effect), or use the other's Marks in a manner that suggests that such rights are conferred.

4.4. Breach or Threatened Breach. In the event of a breach or a threatened breach of any of the provisions of this Section, Licensee acknowledges that a breach or threatened breach shall result in irreparable harm to ROME, and ROME shall be entitled to seek a preliminary injunction restraining any such person or entity from such breach. Nothing contained herein shall be construed as prohibiting ROME from pursuing such other remedies as may be available to ROME for any such breach.

5. Confidential Information.

5.1. Definition. Each party acknowledges that it may be exposed to certain information that is not generally known to the public and that would be considered confidential and proprietary by the other party ("**Confidential Information**"). Confidential Information includes, without limitation, all competitively sensitive or secret business, marketing and technical information disclosed by one party to another,

such as proposed products and services, affiliate and customer lists, strategic and tactical business planning materials, sales and technical training materials, information disclosed in customer conferences, meetings and seminars, materials obtained from the password protected portion of any party's web sites or other web sites utilized in connection with this Agreement, source code, development-level documentation and similar technical information and the contents of this Agreement. **In addition, the financial terms of this Agreement shall be considered Confidential Information.** Confidential Information does not include such portions of any disclosed information which: (i) are or become generally available to the public other than as a result of a disclosure by a party or any of its agents, representatives, affiliates, employees or consultants in violation of its or their obligations of confidentiality hereunder; or (ii) become available to a party on a non-confidential basis from a source which is not prohibited from disclosing such information to that party by a legal, contractual or fiduciary obligation to the other party.

5.2. **Confidentiality Obligation.** Each party agrees that, with respect to received Confidential Information, it (i) shall protect such Confidential Information from unauthorized disclosure using the highest commercially reasonable standard of care, (ii) shall not disclose such Confidential Information to any third party except the party's lawyers, accountants, underwriters and other professionals, and (iii) shall not use such Confidential Information (other than as specifically authorized by this Agreement) without the prior written consent of the other party. These mutual obligations with respect to Confidential Information shall continue for the shorter of five (5) years following the date of termination of this Agreement, or until such information becomes publicly known other than by breach of this Agreement by any party. Within five (5) calendar days after a party's request, or upon termination of this Agreement, all materials or media containing any Confidential Information shall either be returned to the originating party or destroyed by the other party, at the originating party's sole discretion, and each party agrees to certify its compliance with such obligation upon the request of the other party.

5.3. **Compelled Disclosure.** In the event that a party or anyone to whom that party transmits Confidential Information pursuant to this Agreement becomes legally compelled to disclose any of the Confidential Information ("**Compelled Party**"), the Compelled Party will provide the other party ("**Furnishing Party**") with prompt notice thereof so that the Furnishing Party may seek a protective order or other appropriate remedy or waive compliance with the provisions of this Agreement. In the event that such protective order or other remedy is not obtained by the Furnishing Party or the Furnishing Party waives compliance with the provisions of this Agreement, the Compelled Party will furnish or cause to be furnished only that minimum portion of the Confidential Information which the Compelled Party is legally required to furnish and will exercise commercially reasonable efforts to obtain reliable assurances that confidential treatment is accorded the Confidential Information so furnished.

6. Representations and Warranties.

6.1. ROME warrants and represents that it has the right and authority to enter into this Agreement and to grant the rights in the Content set forth herein, subject to the limitations and exclusions set forth herein; and that the Content does not and shall not infringe upon the rights or interests of any third party.

6.2. Licensee represents and warrants that it has the power and authority to enter into this Agreement and to perform its obligations and, upon execution and delivery hereof, this Agreement shall constitute the valid and binding obligations of Licensee enforceable in accordance with its terms.

6.3. CONTENT IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND. LICENSEE EXPRESSLY AGREES THAT ITS RECEIPT AND USE OF THE CONTENT IS AT LICENSEE'S SOLE RISK, AND THAT THE ENTIRE RISK AS TO SATISFACTORY QUALITY, PERFORMANCE, ACCURACY AND EFFORT IS WITH LICENSEE. LICENSOR HEREBY DISCLAIMS ALL WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, WITH RESPECT TO THE CONTENT. LICENSOR SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, ACCURACY, AND THOSE ARISING FROM A COURSE OF DEALING OR USAGE OF TRADE.

7. Indemnification.

7.1. **By ROME.** ROME shall defend, indemnify and hold harmless Licensee from and against any claims, actions or demands, alleging or resulting from the breach of any of ROME's obligations, covenants, representations or warranties under this Agreement.

7.2. **By Licensee.** Licensee shall defend, indemnify and hold harmless ROME, its officers, employees, shareholders, directors, managers, members and suppliers, and those of its affiliates including parent companies and subsidiaries, from and against (i) any damages or liability of any kind arising from any use of Content other than the uses expressly permitted by this Agreement, and (ii) any claims, actions or demands, alleging or resulting from the breach of any of Licensee's obligations, covenants, representations, or warranties under this Agreement.

8. Limitation of Liability.

8.1. **Limitation of Liability**. Other than the indemnification obligation set forth herein, ROME shall have no liability or responsibility for claims or actions caused by or arising from use, access, or display of the Content not in accordance with this Agreement, that arise out of Licensee equipment malfunction or negligence, or that arise from the use, access or display of the Content in conjunction with products,

platforms, or materials not provided by Licensee in accordance with this Agreement. NOTWITHSTANDING THE FAILURE OF THE ESSENTIAL PURPOSE OF ANY REMEDY, IN NO EVENT WILL EITHER PARTY BE LIABLE FOR ANY INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES ASSOCIATED WITH LOSS OF PROFITS, LOSS OF BUSINESS OPPORTUNITIES OR LOSS OF GOODWILL) EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY MATTER BEYOND ITS REASONABLE CONTROL, IN EACH CASE REGARDLESS OF THE FORM OF THE CLAIM OR THE THEORY OF RECOVERY. TOTAL CUMULATIVE LIABILITY FOR ALL CLAIMS ARISING OUT OF OR RELATED TO ANY SUBJECT MATTER OF THIS AGREEMENT, REGARDLESS OF THE FORM OF THE CLAIM OR THE THEORY OF RECOVERY, **WILL IN NO EVENT EXCEED US$10,000.**

9. PROVISIONS RELATING TO THE FDA REGULATION

Pursuant to the U.S. regulation called the federal food drug and cosmetics act as amended by the generic drug enforcement act of 1992 (GDEA), ROME represents, warrants and covenants to Licensee as follows:

(i) to the best of its knowledge at the time of signing the Agreement neither it nor any individual employed or engaged by ROME have ever been and are not currently

(a) under investigation for debarment or debarred by any relevant health authority for debarment action (as detailed in the section 306 of the GDEA of 1992),
(b) excluded by any relevant agency for debarment action (as detailed in the section 306 of the GDEA of 1992),
(c) otherwise disqualified or restricted by the FDA or any other regulatory authority, nor will ROME knowingly utilize any debarred, excluded or disqualified personnel to perform services hereunder;

(ii) it will notify Licensee immediately in writing in the event any investigation or proceeding for debarment, exclusion or disqualification is initiated against ROME or any employee or personnel during the term of the Agreement or within one (1) year following its expiration or termination;

(iii) its employees or contractors are, and will continue to be, qualified and have, and will continue to have, sufficient technical expertise to perform ROME's obligations under this Agreement and will require such for other personnel; if ROME, or any of its employees or contractors involved in the services, or any other person or organization used by ROME in connection with the services should become debarred, disqualified or excluded during the term of this Agreement or within one

(1) year following its expiration or termination, provider agrees to notify Licensee promptly in writing.

10. MISCELLANEOUS

10.1 Survival. Sections of this Agreement relating to Confidential Information, Indemnification, Limitation of Liability, and Representations and Warranties shall survive the expiration or termination of this Agreement.

10.2 Waiver. Any waiver by either party of its rights under this Agreement shall not constitute a waiver of any other rights hereunder.

10.3 Assignment. Licensee shall not assign this Agreement or any of its rights hereunder or delegate any of its obligations hereunder except with the prior written consent of ROME, except if such assignment is made to the benefit of one of its affiliates, or to an acquirer or successor in interest in connection with a Change of Control of the Licensee.

10.4 Excusable Delay. If, for any reason beyond its control, either party is unable to comply with its responsibilities under this Agreement, then performance by that party shall be excused until the reason for such inability ceases to exist. In such circumstances, each party shall use its best efforts to comply with the essential portions of this Agreement. In the event that such inability shall exist for a period of at least thirty (30) days, the parties shall meet to negotiate a resolution of any such existing performance problems. If the parties fail to negotiate a resolution within thirty (30) days, the Agreement may be terminated at the option of either party.

10.5 Jurisdiction. Any legal action or proceeding concerning the validity, interpretation and enforcement of this Agreement, matters arising out of or related to this Agreement or its making, performance or breach, or related matters shall be brought exclusively in the federal or state courts of the State of North Carolina having jurisdiction, and all parties consent to the exclusive jurisdiction of those courts, waiving any objection to the propriety or convenience of such venues. The United Nations Convention on Contracts for the International Sale of Goods does not apply to or otherwise affect this agreement. The validity, interpretation and enforcement of this Agreement, matters arising out of or related to its making, performance or breach, and related matters shall be governed by the internal laws of the State of North Carolina (without reference to choice of law doctrine). Licensee agrees that service of process in any actions, controversies, and disputes arising from or relating to this Agreement may be effected by mailing a copy thereof by registered or certified mail (or any substantially similar form of mail), postage prepaid, to the other party however, nothing herein shall affect the right to effect service of process in any other manner permitted by law. The invalidity or unenforceability of any

part of this Agreement shall not affect the validity or enforceability of the balance hereof.

10.6 Illegal Provision. If any covenant or other provision of this Agreement is invalid, illegal, or incapable of being enforced by reason of any rule of law, administrative order, judicial decision or public policy, all other conditions and provisions of this Agreement shall, nevertheless, remain in full force and effect. The parties shall make changes to this Agreement as are necessary to cure the invalidity, consistent with the original objectives of the parties.

10.7 No Partnership or Joint Venture. Nothing in this Agreement or the relations between the parties to this Agreement shall be construed to constitute a partnership or joint venture between or among the parties to this Agreement. Licensee shall have no right or authority to bind or obligate ROME in any manner whatsoever and shall not expressly or impliedly incur any liability or obligation on behalf of ROME.

10.8. Notices. Any notice or demand required or permitted by this Agreement shall be in writing and shall be deemed given when received by the parties at the address set forth above.

10.9. Counterpart Execution. This Agreement may be executed by the parties on any number of separate counterparts, and all such counterparts so executed constitute one agreement binding on all the parties notwithstanding that all the parties are not signatories to the same counterpart.

10.10. Entire Agreement. This Agreement contains the entire agreement and understanding between the parties and may not be modified or amended except by written agreement executed by both of the parties.

IN WITNESS WHEREOF, each of the parties has caused a duly authorized officer or agent to execute this Agreement as of the dates set forth below.

ROME FOUNDATION, INC.	**Karthika CM**
By(Signature):: Mark Schmitter	By (Signature): Karthika.
Print Name: **Mark Schmitter**	Print Name: KARTHIKA - C·M.
Title: **Copyright & Licensing Director**	Title: Prevalance of FGIDs among 18 to 55yr Adult Population, Ernakulam District, Kerala.
Date: **August 8, 2023**	Date: 04-08-2023

EXHIBIT A
[LIST/DESCRIBE LICENSED CONTENT]

This contract covers the licensing of the Rome Foundation's Rome IV instruments:

- **Rome IV Adult Diagnostic Questionnaire**

In English and Hindi languages

श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौद्योगिकी संस्थान, त्रिवेन्द्रम
तिरुवनन्तपुरम - ६९५०११, केरल, इंडिया
SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM
Thiruvananthapuram - 695 011, Kerala, India
(An Institute of National Importance under Govt. of India)
Grams : Chitramet, Phone : +91-471-2443152, Fax : +91-471-2550728 / 2446433, E-mail : sct@sctimst.ac.in, Website : www.sctimst.ac.in

Institutional Ethics Committee

CDSCO Registration No: ECR/189/Inst/KL/2013/RR-21
DHR Registration No:EC/NEW/INST/2022/2775

SCT/IEC/2164/DECEMBER/2023 12.01.2024

Dr. Karthika CM
MPH Student, AMCHSS
SCTIMST, Thiruvananathapuram

Dear Dr. Karthika,

The Institutional Ethics Committee held on 30th December, 2023, reviewed and discussed your application to conduct the study titled "**FUNCTIONAL GASTROINTESTINAL DISORDERS [FGIDS] AMONG ADULTS OF AGE 18-69 YEARS - A CROSS SECTIONAL STUDY IN ERNAKULAM DISTRICT, KERALA" (IEC /2164).**

Principal Investigator	Dr. Karthika C M, MPH Student, AMCHSS, SCTIMST
Co-Principal Investigator(s)	Dr. Jissa V T, Scientist C, AMCHSS, SCTIMST
Duration of the study	6 months

The following members of the Ethics Committee were present at the meeting held on 30th December, 2023

SL. No.	Member Name	Highest Degree	Gender	Scientific /Non Scientific	Affiliation with Institution(s)
1.	Smt. Sathi Nair	MA (English Literature)	Female	Lay Person	No
2.	Dr. Kala Kesavan P	MBBS,MD	Female	Basic Medical Scientist	No
3.	Adv. Priya Kaimal	LLM, MBL	Female	Legal Expert	No
4.	Dr. P. Manickam	BSMS, MSc (Epid).,PhD	Male	Health Science Expert/ Social Scientist	No
5.	Dr. Christina George	MD Psychiatry	Female	Clinician	No
6.	Dr. Narayanan Namboodiri. K K	MBBS,MD,DM	Male	Clinician	Yes
7.	Dr. Biju Soman	MBBS,MD, DPH, MSc, DLSHTM	Male	Basic Medical Scientist	Yes

The following documents were reviewed:

Original submission

1. *Checklist Form*
2. *Covering letter addressed to the Chairman, IEC, SCTIMST dated01.12.2023*
3. *Responses /amendments made based on the Reviewer's comments*
4. *IEC Application Form*
5. *Declaration Form*
6. *Research Proposal*
7. *Information Sheet in English and Malayalam*
8. *Consent Form in English and Malayalam*
9. *Interview schedule in English and Malayalam*
10. *CV of Principal Investigator and Co-PI*
11. *Scoring Algorithm for the Rome IV Diagnostic Questionnaire for Adults*
12. *SRC Recommendation Letter*

Revised submission

1. *Checklist Form*
2. *Covering letter addressed to the Chairman, IEC, SCTIMST dated 11.01.2024*
3. *Responses /amendments made based on the Reviewer's comments*
4. *Copy of IEC Recommendation letter dated 09.01.2024*
5. *Responses /amendments made based on the Reviewer's comments*
6. *IEC Application Form*
7. *Declaration Form*
8. *Research Proposal*
9. *Checklist*
10. *Information Sheet in English and Malayalam*
11. *Consent Form in English and Malayalam*
12. *Interview schedule in English and Malayalam*
13. *CV of Principal Investigator and Co-PI*
14. *Scoring Algorithm from Rome foundation*
15. *Content License Agreement*

IEC Decision

The IEC approved the conduct of the study in the present form subject to getting the approval of the local authorities where the study is being conducted, copies of which should be submitted before initiation of the study to the IEC office.

Remarks:

The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study, any changes in the protocol and patient information/informed consent and asks to be provided a copy of the final report.

There was no member of the study team / Guide who participated in voting / decision making process. The ethics committee is organized and operated according to the requirements of Good Clinical Practice and the requirements of the Indian Council of Medical Research (ICMR).

Sincerely,

Dr. G. Srinivas
Member Secretary, IEC

MEMBER SECRETARY
INSTITUTIONAL ETHICS COMMITTEE (IEC)
SCTIMST, THIRUVANANTHAPURAM

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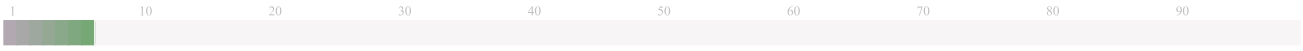
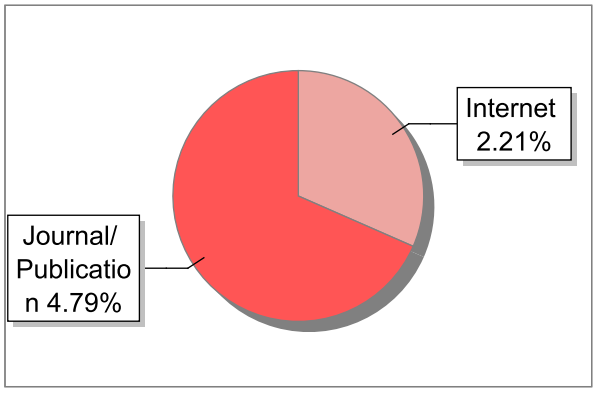
Submission Information

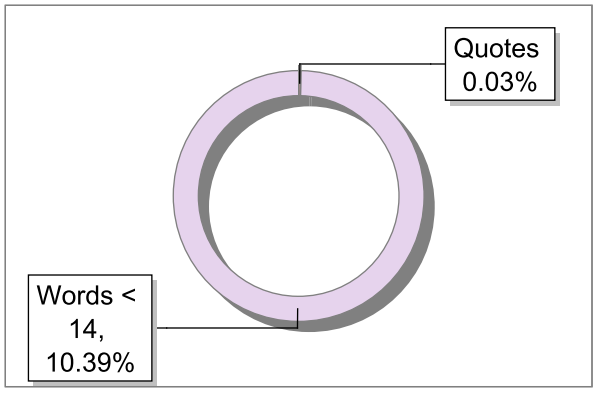
Author Name	Karthika
Title	FUNCTIONAL GASTRO-INTESTINAL DISORDERS (FGIDs) AMONG ADULTS OF AGE 18-69 YEARS-A CROSS-SECTIONAL STUDY IN ERNAKULAM DISTRICT, KERALA.
Paper/Submission ID	1686722
Submitted by	jissa@sctimst.ac.in
Submission Date	2024-04-23 15:27:15
Total Pages	59
Document type	Dissertation

Result Information

Similarity **7 %**







Exclude Information

Quotes	Excluded
References/Bibliography	Excluded
Sources: Less than 14 Words %	Excluded
Excluded Source	**0 %**
Excluded Phrases	Excluded

Database Selection

Language	English
Student Papers	Yes
Journals & publishers	Yes
Internet or Web	Yes
Institution Repository	Yes

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KADUNGALLOOR GRAMA PANCHAYAT

MUPPATHADAM.P.O, ALUVA-683110, Ph:0484 2604392
kadungalloorpanchayat@gmail.com

No: Date:16/01/2024

Dr.Karthika C M permitted to conduct her study **titiled "FUNCTIONAL GASTROINTESTINAL DISORDERS(FGIDS) AMONG ADULTS OF AGE 18-89 - A CROSS SECTIONAL STUDY IN ERNAKULAM DISTRICT, KERALA "** under the following wards of Kadungalloor Gramapanchayat.

1. Kizhakke Kadungalloor East
2. Kayantikkara
3. Kayantikkara south
4. Muppathadam south
5. Muppathadam west

SECRETARY
Kadungalloor Grama Panchayat

ALANGAD GRAMA PANCHAYAT

(ISO 9001:2015 Certified)

Neericode P.O, Aluva - 683511

Phone : 0484-2512267 Email : alangadgramapanchayat@gmail.com

No. SC1-456/23 **Date : 16/01/2024**

Dr. Karthika C M is permitted to conduct her study titled " FUNCTIONAL GASTROINTESTINAL DISORDERS (FGIDS) AMONG ADULTS OF AGE 18-69 – A CROSS SECTIONAL STUDY IN ERNAKULAM DISTRICT, KERALA " under the following wards of Alangad Gramapanchayat.

1. Neericode West
2. Koduvazhanga North
3. Thiruvalloor
4. Panayikkulam
5. Olanad

Shaji s

Secretary

Alangad Gramapanchayat

16/01/24

ഉദ്യോഗമണ്ഡൽ - 683 501
എറണാകുളം ജില്ല
ഫോൺ : 0484-2545559
E-mail : eloormunicipality@gmail.com

ഏലൂർ നഗരസഭ

എ.ഡി. സുജിൽ
ചെയർമാൻ

സോപാനം
ഏലൂർ നോർത്ത്
ഉദ്യോഗമണ്ഡൽ
മൊബൈൽ : 9349257144
E-mail: sujilad2013@gmail.com

15.01.2023

Dr. Karthika C M, is permitted to conduct her study titled "FUNCTIONAL GASTROINTESTINAL DISORDERS (FGIDS) AMONG ADULTS OF AGE 18 – 69 – A CROSS SECTIONAL STUDY IN ERNAKULAM DISTRICT, KERALA" under the following Wards of Eloor Municipality.

1. Eloor Dippo
2. Eloor North
3. Pathalam
4. Alupuram
5. Kuttikkattukara South
6. Puthalath
7. Kottakkunnu
8. Manjummel South
9. Parackal
10. Head Quarters West

A. D. SUJIL
CHAIRMAN
ELOOR MUNICIPALITY
UDYOGAMANDAL - 683 501

ELOOR MUNICIPALITY
UDYOGAMANDAL P.O.