Prevalence of Functional Gastro-Intestinal Disorders among School Aged Children in Cairo Governorate

Thesis

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By

Mariam Sherif Mourad
M.B.B.Ch (2010)
Faculty of Medicine, Ain Shams University

Under the supervision of

Prof. Mostafa Abd El Aziz Al Hodhod
Professor of Paediatrics,
Faculty of Medicine, Ain Shams University

Prof. Ahmed Mohamed Hamdy
Professor of Paediatrics,
Faculty of Medicine, Ain Shams University

Dr. Ahmed Tohamy Ahmed Ibrahim
Lecturer of Paediatrics,
Faculty of Medicine – Ain Shams University

Faculty of Medicine
Ain Shams University
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List of Abbreviations

Abb.	Stands for
AM	*Abdominal Migraine*
ARS	*Adolescent Rumination Syndrome*
CBT	*Cognitive Behavioural Therapy*
CVS	*Cyclic Vomiting Syndrome*
EPS	*Epigastric Pain Syndrome*
FAP	*Functional Abdominal Pain*
FAPS	*Functional Abdominal Pain Syndrome*
FC	*Functional Constipation*
FD	*Functional Dyspepsia*
FGID	*Functional Gastrointestinal Disorder*
FI	*Fecal Incontinence*
FODMAP	*Fermentable Oligosaccharides, Disaccharides, Monosaccharides and Polyols*
GER	*Gastroesophageal Reflux*
GI	*Gastrointestinal*
HIS	*International Headache Society*
HRQOL	*Health Related Quality of Life*
IBS	*Irritable Bowel Syndrome*
ICHD	*International Classification of Headache Disorders*
NASPGHN	*North American Society for Pediatric Gastroenterology, Hepatology and Nutrition*
NRFI	*Non Retentive Fecal Incontinence*
NSAID	*Non-Steroidal Anti-Inflammatory Drug*

List of Abbreviations (Cont...)

Abb.	Stands for
PDS	*Postprandial Distress Syndrome*
PEG	*Polyethylene Glycol*
RAP	*Recurrent Abdominal Pain*
RCT	*Randomized Controlled Trial*
SNRI	*Serotonin and Norepinephrine Reuptake Inhibitors*
TCA	*Tricyclic Antidepressants*

INTRODUCTION

The term 'functional gastrointestinal disorder (FGID)' is used to define several variable combinations of chronic or recurrent gastrointestinal (GI) symptoms that do not have an identified underlying pathophysiology. In the absence of any objective marker, the identification and classification of FGIDs are based on symptoms ***(Apley et al., 1958).*** The term *functional* emphasizes that many of the symptoms may accompany normal development (e.g., infant regurgitation) or may be a response to otherwise normal internal or external cues (e.g., constipation following painful stooling) ***(Apley et al., 1958).***

One of the earliest descriptions of a FGID in children was by Apley, ***(Apley et al., 1958)*** who described a group of children in the community who complained of abdominal pain with no clear etiology that persisted and interfered with daily activities. He coined the phrase *recurrent abdominal pain* (RAP) to describe this condition. Using Apley's definition, 10%-17% of school-aged children have RAP ***(Apley, 1975).*** Now, however, the term *RAP* has been modified and subdivided into more defined groups. The most recent revision by the Rome Paediatric Working Group on Functional GI Disorders occurred in 2006 ***(Hyman et al., 2006)***. The process involved group consensus using clinical experience as well as an extensive review of the literature. The goal of this paediatric

working group was to make the criteria more useful for both clinicians and researchers, easing efforts to make accurate and definitive diagnosis in these children as well as provide additional evidence-based data regarding FGIDs in children ***(Hyman et al., 2006).*** Two studies reviewed the classification of children who previously had been described as having RAP and divided them into subtypes according to the Paediatric Rome criteria. The majority of these RAP children met the criteria for irritable bowel syndrome (45%) or functional dyspepsia (16%), whereas the third most frequent was functional abdominal pain (7.5%) ***(Hyams and Hyman, 1998).*** Another recent study using prospective methods suggested that 65% of RAP children had irritable bowel syndrome and 35% had functional abdominal pain (the latter group may have included some children with functional dyspepsia) ***(Greco et al., 2007).***

The most widely accepted classification for FGID based on the 'Rome diagnostic criteria III,' which have classified 24 FGIDs into oesophageal (heart burn, dysphagia, globus), gastroduodenal (dyspepsia, post-prandial distress syndrome, epigastric pain syndrome, aerophagia, cyclic vomiting and rumination), bowel (IBS, functional bloating, functional constipation, functional diarrhoea, unspecified bowel disorder), biliary, anorectal (functional incontinence, defecation disorders, pain associated with defecation) and abdominal pain (abdominal migraine, functional pain syndrome) subcategories.

Classification into mutually exclusive categories has been useful for performing epidemiological studies in homogeneous populations, but has inevitably lead to disregarding subjects with overlapping FGIDs, or with a not sufficiently standardized symptom presentation ***(Caplan et al., 2005).***

Children with FGID face demands of normal development and at the same time dealing with illness related issues, consequently normal development milestones are affected so as adequate nutrition status ***(Greco et al., 2007).*** Child's psychological development is impacted as these disorders interfere with normal behavioral development such as independence, self-care, dynamics with family and peer relationship; especially with pain due to investigations and treatment embarrassment which leads to increased school absenteeism ***(Greco et al., 2007).***

FGID is associated with worse quality of life, school absenteeism, and higher anxiety and depression scores ***(Campo et al., 2004).*** Children with a history of FGID also have higher prevalence of psychiatric conditions, socialization problems and use of medications ***(Greco et al., 2007).*** Also parent's frustration and incomprehension of child's recurrent symptoms along with financial exhaustion due to the utilization of health care resources and costly investigations which in case of FGID often yield minimally ***(Dhroove et al., 2010).***

AIM OF THE WORK

This study aims to measure the prevalence of FGID among a representative sample of school aged children, in order to:

- Determine the socio-demographic characteristics of children affected by FGID.
- Asses the effect of FGID on health related quality of life concerning both the child and the parent\caregiver.

FUNCTIONAL GASTROINTESTINAL DISORDERS

Functional gastrointestinal disorders

The term Functional Gastrointestinal Disorder '(FGID)' is used to define several and variable combinations of chronic or recurrent gastrointestinal (GI) symptoms that do not have an identified underlying pathophysiology. In the absence of any objective marker, the identification and classification of FGIDs are based on symptoms ***(Apley et al., 1958).*** Functional gastrointestinal disorders (FGIDs) account for 2% to 4% of all general paediatric office visits ***(Nurko and Di Lorenzo, 2008).***

FGIDs are common all over the world ***(Drossman, 2006)***, with functional dyspepsia (FD) and irritable bowel syndrome (IBS) being the two most common ***(Oshima and Miwa, 2015b)***. Best estimates on prevalence of FGIDs come from community studies, which are –however- scanty from Asia, where one-third of the world's population live ***(Makharia et al., 2011)***. Urbanization and civilization are associated with higher prevalence of these conditions ***(Gwee, 2005)***.

Though FD and IBS are common, variation in prevalence of these conditions has been reported in different parts of the world, with figure as low as 4.2% of IBS in 3rd world countries and as high as 9-29.2% in the West ***(Oshima and Miwa, 2015a)***. In contrast, frequency of dyspepsia in the eastern,

middle eastern community is 30.4% and in the West 7-45% ***(Mahadeva and Goh, 2006)***. Such wide variation in prevalence of these conditions might be related to socio-cultural factors, urbanization, method of survey, symptom reporting, diagnostic criteria, dietary and environmental factors ***(Sperber et al., 2016)***. Frequency of several risk factors of dyspepsia and IBS are different between the East and the West and also among different eastern countries ***(Ghoshal et al., 2011)***. Frequency of acute infectious diarrhea, which is associated with development of post-infectious IBS and dyspepsia, is different in tropical regions than the temperate countries ***(Ghoshal et al., 2011)***.

CLASSIFICATION OF FGID ACCORDING TO ROME III

Until a decade ago "functional gastrointestinal disorders" was a label used for the conditions with uncertain etiology and was a diagnosis of exclusion. When Rome criteria were defined to diagnose function Functional gastrointestinal disorders (FGD) become an important positive diagnosis

Validation of pediatric Rome II criteria was done by Caplan et al. in 2005. They found that at least half of the patients classified as having functional problems not at least one pediatric Rome II criteria for Functional gastrointestinal disorders (FGID) ***(Caplan et al., 2005).***

Another study by Saps and Di-Lorenzo reported low inter-observer reliability (45-47%) for Rome II criteria among pediatric gastroenterologists ***(Saps and Di Lorenzo, 2005).***

To overcome drawbacks in Rome II criteria. They were revised and modified in 2006 and Rome III criteria were developed.

Validity and reliability of Rome III criteria in diagnosis FGID in children need yet to be studied. Functional bowel disorder helps to let the child and the parents known that the symptoms they are feeling are real but not dangerous or life threatening and also helps to direct the treatment appropriately. Once the diagnosis is made a simple explanation of the