REVIEW

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A systematic review and meta-analysis in schoolchildren and adolescents with functional gastrointestinal disorders according to Rome IV criteria

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ABSTRACT – Objective – To determine the prevalence of functional gastrointestinal disorders (FGIDs) in children according to Rome IV criteria. **Methods –** We included cohorts and observational descriptive studies, including information for the prevalence of FGIDs according to Rome IV criteria in children 4 to 18 years old. We searched the MEDLINE (Ovid), EMBASE, LILACS, and CENTRAL databases from May 2016 to nowadays. Gray literature and other databases were also consulted. The risk of bias was assessed using the STROBE Statement. The results were reported in forest plots of the estimated effects of the included studies with a 95% confidence interval (95%CI). **Results –** We included 14 studies involving a total of 17427 participants. Three studies were conducted in Europe, two in North America, and nine in Latin America. Most studies were school-based (n=14670, 84.18%), participants were mostly female (55.49%), white (51.73%), 8 to 18 years old (77.64%), and assisted to a public school (81.53%). Thirteen studies used the Questionnaire on Pediatric Gastrointestinal Symptoms (QPGS-RIV) to assess FGIDs. We found a global prevalence for FGIDs of 23% (95%CI 21–25%, I2 99%). Main disorders were functional constipation (FC) with 12% (95%CI 11–15%) followed by functional dyspepsia (FD) (5%, 95%CI 11–15%) and irritable bowel syndrome (IBS) (3%, 95%CI 2–4%). The prevalence of FGIDs was higher in the Americas, representing 23.67% (95%CI 21.2–26.2%, I2 91.3%). **Conclusion –** FGIDs are present in one of four children and adolescents, representing a common condition in this age group the central disorders were FC, FD, and IBS.

Keywords – Functional gastrointestinal disorders; Rome IV criteria; schoolchildren; adolescents.

INTRODUCTION

Functional gastrointestinal disorders (FGIDs) can be defined as frequent and recurrent gastrointestinal complaints involving different locations of the digestive system that other conditions cannot better explain after a careful medical evaluation[1].

According to Rome III criteria, the prevalence of FGIDs in children and adolescents was 9.9% to 27.5%[2-5]. Later in 2016, Rome IV criteria were published featuring crucial changes for diagnosis; thus, the relevance to these new criteria lies in acknowledging the role of the gut-brain interaction in the physiopathology of FGIDs[1,6-8]. This approach recognizes gut motility, sensitivity, immune function, microbiota, central nervous processing, the role of genetics, epigenetics, microbiology, social and psychological factors as elements that can mark the path to development and maintenance of symptoms[9-11]. Also, Rome IV criteria remarks that in the absence of an objective laboratory marker that can confirm the diagnosis, clinical examination remains critical for assessing FGIDs. Thus, allowing the clinician to identify these disorders and initiate treatment early, improving personal and family life quality.

According to Rome II and III criteria, Boronat et al.[12] analyzed the prevalence of FGIDs in the pediatric population. Although it has been four years since the publication of the Rome IV criteria, this is the first metanalysis for the prevalence of FGIDs in children and adolescents according to these criteria.

According to Rome IV criteria, we aim to determine the global prevalence of FGIDs in children and adolescents from 4 to 18 years.

METHODS

We performed this review according to the recommendations of the Cochrane Collaboration[13] and following the PRISMA Statement[14].

Eligibility criteria

Study designs: we included cohorts and observational descriptive studies.

Participants

Studies involving:

Children from 4 to 18 years, both male and female.

Identification of DGBIs according to only to Pediatric Roma IV criteria based on Questionnaire on Pediatric Gastrointestinal

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Symptoms (QPGS-RIV, parental and/or self-report form), medical records, or clinical evaluation in a clinical or non-clinical setting.

Report of epidemiological data (prevalence) concerning DGBIs.

Primary outcome

Determine the global prevalence and subtypes of FGIDs on children from 4 to 18 years according to Roma IV criteria.

Exclusion criteria

No specific data for age group (bracket).

A previous version of Rome Criteria (I, II, or III) or different criteria.

Organic disease.

Information sources

We searched MEDLINE (OVID), EMBASE, LILACS, and the Cochrane Central Register of Controlled Trials (Central) from May 2016 to nowadays (see appendix 1). We scanned references from relevant articles identified through the search, conferences, thesis databases, Open Grey, Google Scholar, and others to ensure literature saturation. We contacted authors by e-mail in case of missing information. There were no setting or language restrictions.

Data collection

Two researchers reviewed each reference by title and abstract. Then full texts of relevant studies were scanned, applied pre-specified inclusion and exclusion criteria, and extracted the data. Disagreements were resolved by consensus, and where disagreement could not be solved.

Two trained reviewers used a standardized form to extract the following information from each article: study design, geographic location, authors names, title, objectives, inclusion and exclusion criteria, number of patients included, losses to follow up, timing, definitions of outcomes, outcomes and association measures and funding source.

Data analysis / synthesis of results

The statistical analysis was performed using Stata® 14 and Review Manager 5.3 (RevMan® 5.3). For categorical outcomes, we reported information about risk differences (RD), odds ratio (OR), risk ratio (RR), and/or hazard ratio (HR) with 95% confidence intervals (95%CI) according to the type of variables. We pooled the information with a random effect meta-analysis according to the expected heterogeneity. The results were reported in forest plots of the estimated effects of the included studies with a 95%CI. Heterogeneity was evaluated using the I2 test. For the interpretation, it was determined that the values of 25%, 50%, and 75% in the I2 test correspond to low, medium, and high levels of heterogeneity, respectively. We tried to perform a meta-regression according to the number and the quality of the studies.

Publication bias

An evaluation was conducted to identify reporting or publication bias using the STROBE statement[15].

Sensitivity analysis

We performed a sensitivity analysis extracting weighted studies and running the estimated effect to find differences.

Subgroup analysis

Continent: America, Asia, Europe, Africa, Oceania .

DGBIs subtype according to Rome IV criteria.

RESULTS

Study selection

A total of 2588 studies were identified through a database search. After exclusion, a total of 14 containing information for children and adolescents (4 to 18 years old) were included[5,8,16-27] (FIGURE 1).

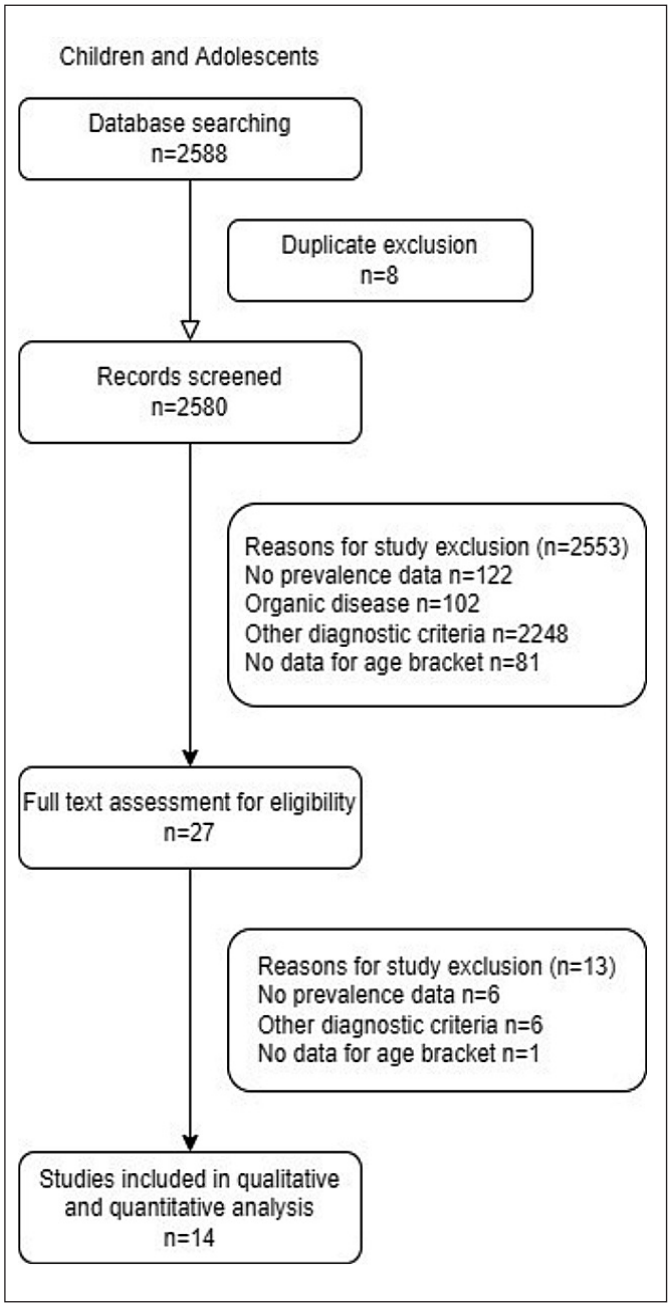

FIGURE 1. Flow chart of the study.

Characteristics of included studies

Eleven (78.57%) studies were conducted in the Americas (Colombia, Ecuador, and the USA), and three in Europe (The Netherlands, Croatia, and Italy); Colombia was the country where most studies were conducted[5,18-20,24].

The sample size varied from 118[16] to 3567 participants[5]. Nine studies were school-based, two were performed in the community, two were based on online panel communities, and one was conducted in a tertiary hospital. All Latin American studies were conducted in schools, whereas USA investigators and European investigators conducted theirs online and in the community. None of the studies was multicentric.

Zwiener et al.[23] included children 4 to 18 years old, whereas Zeevenhooven et al.[8] only included adolescents 15 to 17 years old. The rest of the authors included children of scholar age. Despite Robin et al.[22], Milošić et al.[26], and Russo et al.[27] performing their research in children 0 to 18 years old, for the analysis, we only included children older than four years old. Most of the included children were female (55.48% vs 44.52%), white (n=2868), mixed (n=1643), and black race (n=409). Regarding the studies performed in schools[5,16-21,24,25] most children assisted to public institutes (n=7264).

Most of the studies assessed FGIDs based on self-report using QPGS-IV (n=10), two studies used parental-report form, one used both strategies, and one used clinical records to diagnose these disorders (TABLE 1).

Risk of bias assessment

Using the STROBE strategy[28], we assessed the methodological quality of the included studies based on data regarding study design, setting, number of participants, sample size, outcomes, bias, limitations, and generalizability of the results. This strategy ensures proper and systematic evaluation of the strengths and weaknesses of each research.

The included articles had a median score of 19 points. The highest score (26 items) was achieved by Saps et al.[5], Robin et al.[22], Velasco-Benítez et al.[24], and Jativa-Marino al.[25], whereas Milošić et al.[26] reported a score of 15 points. The main limitations for the included studies relied on addressing possible bias, disclosing statistical methods, and performing sensitivity analysis. Other limitations included reporting follow-up time and boundaries for continuous variables, considering absolute risk in their results, discussing their limitations, assessing generalizability, and disclosing funding sources (TABLE 2).

Prevalence of FGIDs in subgroups

Overall prevalence for FGIDs was 23% (95%CI: 21% to 25%, I^2 99%) (FIGURE 2). The analysis for each FGID showed a higher prevalence for functional constipation (12%, 95%CI 11% to 15%, I^2 92%) followed by functional dyspepsia (unspecified: 5%, 95%CI 0.02 to 0.08, I^2 93%; postprandial distress syndrome: 4%, 95%CI 0,03 to 0.07, I^2 95%) and irritable bowel syndrome (3%, 95%CI 0.02 TO 0.04, I^2 86%) (FIGURE 2).

Prevalence for FGIDs in different continents

The higher prevalence for FGIDs was reported among North and South American countries representing 23.67% (95%CI 21.29% to 26.22%; I^2 91.3%) of children aged 4 to 18 years old (TABLE 3).

DISCUSSION

Rome IV criteria reflect a novel insight in diagnosing FGIDs, reassuring clinical examination as the main feature for diagnosis, and addressing neurobiology of pain as a pilar of the physiopathology of these disorders. According to previous Rome criteria, a prevalence for FGIDs between 9.9% and 27.5% in children-adolescents[2,3,5] was reported being this frequency variable among settings and countries.

For instance, in 2017, Boronat et al.[12] published a systematic review including children from 4 to 18 years and reported a global prevalence of FGIDs according to Rome II, and III criteria varying from 9.9% to 87% in some series, most common disorders in this sample were cyclic vomiting, irritable bowel syndrome (IBS) and functional constipation.

In this sample, a wide heterogeneity was identified, raising the question of whether non-addressed variables or bias could be playing a role in data dispersion. However, we found that the global prevalence for FGIDs according to Rome IV criteria was similar to previously reported data. Functional constipation and IBS remain among the central disorders.

In the continent sub-analysis, the studies conducted in the Americas reported the highest prevalence for FGIDs with a highly heterogenic sample that could be explained by demographic characteristics, setting, sampling strategies, and FGIDs diagnosis. Only in Latin America the prevalence of FGIDs in children and adolescents is reported between 13.4% and 29%[2-4,29-32]. However, the most frequent FGID in Ecuador and Colombia is functional constipation[3,4], whereas Argentinean data reports abdominal migraine as the primary disorder in their population[31]. This situation reflects that despite geographical proximity, other factors such as ancestral origins, socioeconomic and demographic data can lead to a difference in epidemiology of FGIDs as is expected in a heterogenic population[9]. Also, school-based studies may represent only a tiny portion of characteristics from a given community.

Strengths and limitations

We conducted this metanalysis using the PRISMA, Cochrane Collaboration, and STROBE strategy to follow a standardized method that assures proper search and qualitative analysis in terms of acknowledgment of bias, statistical methods, and external validity of studies concerning FGIDs according to Rome IV criteria in children and adolescents. Our data remains coherent with previously published information reassuring the role of Rome IV criteria in allowing the clinician to achieve an early diagnosis and initiate appropriate treatment improving life quality for the patient and families.

The difference in settings, patients' age, study methodology, and quality may condition the heterogeneity showed in the prevalence of FGIDs, but other confounders and variables cannot be discarded. Cross-sectional studies are more accessible in logistic terms but are not ideal for prevalence assessment. Thus, data extracted from these studies can be carefully extrapolated, recalling that cause-effect relationships are less valid and that possible methodological deficiencies such as sample size, setting, and possible bias can be present[33]. On the other hand, recruiting patients in schools could constitute a selection bias. Reported bias related to delay in publication (file drawer bias) and language must also be recognized. However, an active search for gray literature and non-published data was performed to ensure a comprehensive literature search, including various languages other than English.

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TABLE 1. Included studies and frequency of functional gastrointestinal disorders in schoolchildren and adolescents.

Author	Study desing	Continent	Country	Setting	Age bracket	FGIDs assessment	n	≥1 FGIDs	FGIDs subgroups													
									Functional constipation	Functional dyspepsia (Postprandial distress syndrome)	Functional dyspepsia (Epigastric pain syndrome)	Functional dyspepsia (unspecified)	Irritable bowel syndrome	Functional abdominal pain not otherwise specified	Aerophagia	Functional nausea	Functional vomiting	Cyclic vomiting syndrome	Abdominal migraine	Nonretentive fecal incontinence	Rumination
Mendez 2020	Cross-sectional	Americas	Colombia	School-based	11–18 years	Self-report QPGS-IV	118	43	11	NR	NR	19	6	NR	NR	NR	NR	NR	NR	NR	NR
Jativa 2019	Cross-sectional	Americas	Ecuador	School-based	11/12/8 years	Self-report QPGS-IV	951	137	137	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Axelrod 2019	Cross-sectional	Americas	Colombia	School-based	10–18 years	Self-report QPGS-IV	1497	338	194	35	4	NR	29	14	6	4	0	0	5	0	7
Zeevenhooven 2019	Cross-sectional	Europe	Netherlands	Community	15–17 years	Self-report QPGS-IV	102	27	3	10	2	3	0	0	0	0	0	1	0	0	0
Velasco-Benítez 2018a	Prospective longitudinal	Americas	Colombia	School-based	10–18 years	Self-report QPGS-IV	330	132	75	NR	NR	17	20	16	NR	NR	NR	NR	NR	NR	NR
Velasco-Benítez 2018b	Cross-sectional	Americas	Ecuador	School-based	8–15 years	Self-report QPGS-IV	951	212	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Velasco-Benítez 2018c	Cross-sectional	Americas	Colombia	School-based	8–18 years	Self-report QPGS-IV	3567	755	382	NR	NR	108	83	85	19	3	22	16	18	3	16
Robin 2018	Cross-sectional	Americas	United States	Online panel community	0–18 years	Parental report QPGS-VI	959	240	135	69	4	NR	49	30	25	5	13	19	11	2	0
Zwiener 2017	Cross-sectional	Americas	United States	Online panel community	4–18 years	Parental report QPGS-VI	1075	262	144	80	5	NR	54	29	32	6	14	19	12	2	0
Velasco-Benítez 2020	Cross-sectional	Americas	Colombia	School-based	10–18 years	Self-report QPGS-IV	1497	338	194	35	4	NR	29	14	6	4	18	NR	5	NR	7
Saps 2018	Cross-sectional	Americas	Colombia	School-based	8–18 years	Self-report QPGS-IV	3567	755	382	97	11	NR	83	85	19	3	22	NR	18	3	16
Jativa-Marino 2019	Cross-sectional	Americas	Ecuador	School-based	8–15 years	Self-report QPGS-IV	951	212	137	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Milošić 2019	Cross-sectional	Europe	Croatia	Tertiary hosital	0–18 years	Clinical records	1729	271	91	NR	NR	40	46	61	NR	NR	NR	NR	NR	NR	NR
Russo 2019	Cross-sectional	Europe	Italy	Community	0–17 years	Parental and self-report QPGS-VI	133	28	28	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

NR: No report

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TABLE 2. Risk of bias assessment.

Authors	STATEMENTS																															
	Title		Intro-duction		Methods												Results										Discussion				Other	
	Specifies study design	Adequate summary	Provides background	Details objectives	Details key elements of study design	Describes setting and follow-up	Elegibility criteria and methods	Describes outcomes	Details assessment for variable	Adresses possible bias	Details Study size measurement	Details handling of quantitative variables	Describes statistical methods	Details analysis for subgroups	Details analysis for missing data	Describes sampling strategy	Performs sensitivity analysis	Details number of individuals	Details reasons for exclusion	Shows flow diagram	Provides participants characteristics	Indicates missing data	Describes follow-up time	Reports number of outcome events	Gives unadjusted/confounder-ajusted estimates	Reports category boundaries (for continuous variables)	Translates relative risk to absolute risk	Reports other subgroup analysis	Summarizes key results according to objective	Discusses limitations	Provides interpretation of results	Discusses generalisability of results	Discloses sources of funding
	1a	1b	2	3	4	5	6	7	8	9	10	11	12a	12b	12c	12d	12e	13a	13b	13c	14a	14b	14c	15	16a	16b	16c	17	18	19	20	21	22
Mendez 2020	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	0	?	1	1	0	1	0	?	1	?	?	?	?	1	0	1	0	0
Jativa 2019	1	1	1	1	1	1	1	1	1	0	0	1	1	?	0	0	?	1	0	0	1	0	?	1	?	?	?	?	1	0	1	0	0
Axelrod 2019	0	1	1	1	1	1	1	1	1	0	0	1	1	1	0	0	?	1	0	0	0	0	?	1	?	?	?	?	1	1	1	0	0
Zeevenhooven 2019	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	?	1	1	0	1	0	?	1	?	?	?	?	1	0	1	0	0
Velasco-Benítez 2018a	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	0	?	1	0	0	1	0	?	1	?	?	?	1	1	0	1	0	0
Velasco-Benítez 2018b	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	?	1	0	0	1	0	?	1	?	?	?	1	1	0	1	0	0
Velasco-Benítez 2018c	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	?	1	0	0	1	1	?	1	?	?	?	1	1	0	1	0	0
Robin 2018	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	?	1	1	0	1	1	?	1	0	?	?	1	1	1	1	1	0
Zwiener 2017	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	?	?	1	0	0	1	1	?	1	0	?	?	?	1	0	1	1	1
Velasco-Benítez 2020	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	?	1	0	?	0	1	1	1	1	0	0
Saps 2018	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	?	1	0	?	0	1	1	1	1	1	0
Jativa-Marino 2019	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	?	1	0	?	0	1	1	1	1	1	0
Milošić 2019	0	1	1	1	1	1	1	1	1	0	0	1	1	0	0	?	?	1	0	0	1	0	?	1	0	?	?	0	1	0	1	0	0
Russo 2019	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	?	?	1	1	0	1	0	?	1	0	?	?	1	1	1	1	0	1

Key: No information ? , Meets criteria x , Does not meet criteria 0

STATEMENTS
1a Indicate the study's design with a commonly used term in the title or the abstract.
1b Provide in the abstract an informative and balanced summary of what was done and what was found.
2 Explain the scientific background and rationale for the investigation being reported.
3 State specific objectives, including any prespecified hypotheses.
4 Present key elements of study design early in the paper.
5 Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection.
6 Give the eligibility criteria, and the sources and methods of selection of participants.
7 Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable.
8 For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group.
9 Describe any efforts to address potential sources of bias.
10 Explain how the study size was arrived at.
11 Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why.
12a Describe all statistical methods, including those used to control for confounding.
12b Describe any methods used to examine subgroups and interactions.
12c Explain how missing data were addressed.
12d If applicable, describe analytical methods taking account of sampling strategy.
12e Describe any sensitivity analyses.
13a Report numbers of individuals at each stage of study—e.g. numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed.
13b Give reasons for non-participation at each stage.
13c Consider use of a flow diagram.
14a Give characteristics of study participants (e.g. demographic, clinical, social) and information on exposures and potential confounders.
14b Indicate number of participants with missing data for each variable of interest.
14c Indicates follow-up time
15 Report numbers of outcome events or summary measures.
16a Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g., 95% confidence interval). Make clear which confounders were adjusted for and why they were included.
16b Report category boundaries when continuous variables were categorized.
16c If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period.
17 Report other analyses done—e.g. analyses of subgroups and interactions, and sensitivity analyses.
18 Summarise key results with reference to study objectives.
19 Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias.
20 Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence.
21 Discuss the generalisability (external validity) of the study results.
22 Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based.

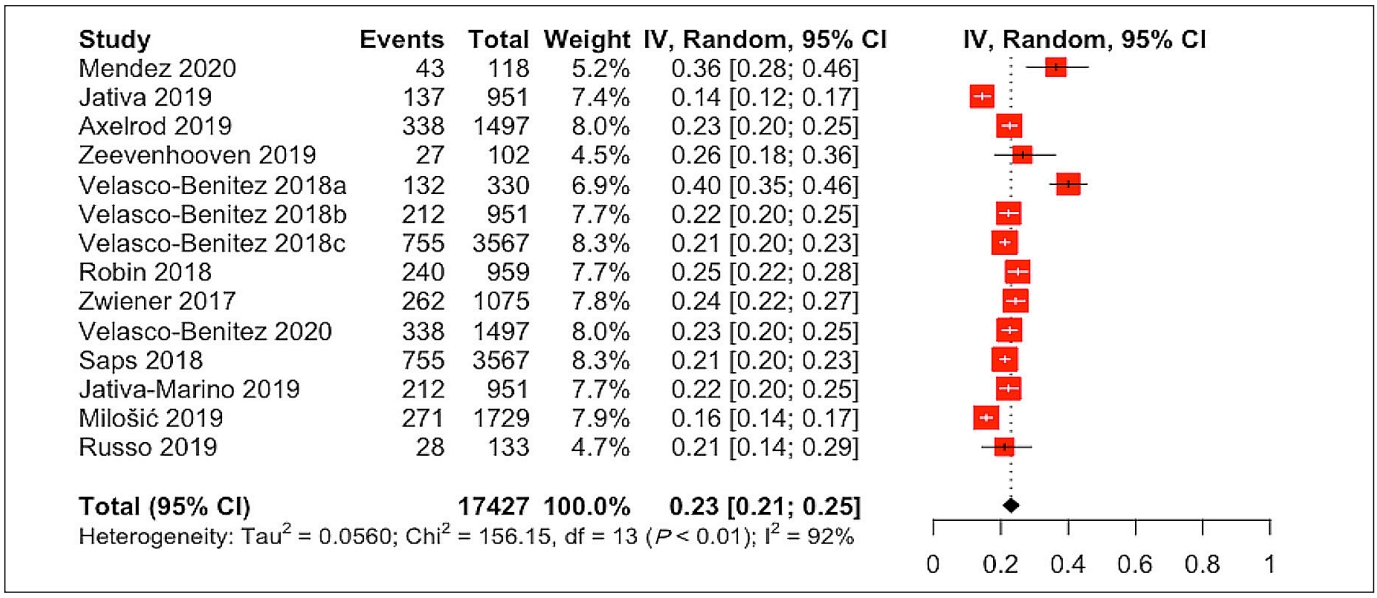

FIGURE 2. The global prevalence of FGIDs in schoolchildren and adolescents according to Rome IV criteria.

TABLE 3. Prevalence for FGIDs in continents.

Continent	Prevalence	CI95%	I2
America	23.67%	21.29% to 26.22%	91.3%
Europe	20.06%	14.17% to 27.60%	79.8%

CONCLUSION

FGIDs, as defined by Rome IV criteria, are present in 23% of children; the primary disorder continues to be functional constipation. The higher prevalence of FGIDs was found in the Americas. It is necessary to perform more studies with high methodological quality to ensure proper bias assessment and external validity. We suggest multicentric research with standardized conditions including children from all continents to characterize FGIDs worldwide properly.

Authors' contribution

Velasco-Benítez CA: participation in the study: data collection, survey execution, writing of text, and statistical analysis. Collazos-Saa LI: participation in the study: data collection, survey execution, writing of text, and statistical analysis. García-Perdomo HA: participation in the study: data collection, survey execution, writing of text, and statistical analysis.

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SUPPLEMENT

Search terms

Medline (OVID) and CENTRAL: *gastrointestinal diseases/ or "functional gastrointestinal disorde*".mp. or "cycli* vomiting".mp. or "functional nausea".mp. or "functional vomiting".mp. or *rumination syndrome/ or "rumination syndrome".mp. or "rumina* disorde*".mp. or aerophagy/ or "aerophag*".mp. or *dyspepsia/ or "functional dyspepsia".mp. or *irritable bowel syndrome/ or "irritable bowel".mp. or "abdom* migraine".mp. or "functional abdom* pain*".mp. or *constipation/ or "functional constipation".mp. or *fecal incontinence/ or *encopresis/ or "encopresis".mp. or "fecal soil*".mp. or "non-retentive fecal incontinence".mp. or "functional defecation disorder*".mp. AND *adolescent/ or adolescen*.mp. or *puberty/ or puber*.mp. or prepuber*.mp. or youth.mp. or teen*.mp. or schoolchild*.mp. or schoolage.mp. AND ("prevalence" or "frequency").mp.

Embase: ('digestive system function disorder'/mj OR 'gastrointestinal disease'/mj OR 'functional gastrointestinal disorder':ti,ab OR 'cyclic vomiting syndrome'/mj OR 'cyclic vomiting syndrome':ti,ab OR 'cyclical vomiting syndrome':ti,ab OR 'functional nausea':ti,ab OR 'functional vomiting':ti,ab OR 'rumination syndrome'/mj OR 'rumination syndrome':ti,ab OR 'rumination disorder':ti,ab OR 'aerophagia'/mj OR 'aerophagia':ti,ab OR 'aerophagy':ti,ab OR 'dyspepsia'/mj OR 'functional dyspepsia':ti,ab OR 'irritable colon'/mj OR 'colon, irritable':ti,ab OR 'abdominal migraine':ti,ab OR 'functional abdominal pain':ti,ab OR 'constipation'/mj OR 'functional constipation':ti,ab OR 'feces incontinence'/mj OR 'fecal incontinenc*':ti,ab OR 'encopresis':ti,ab OR 'fecal soil*':ti,ab OR 'non retentive fecal incontinenc*':ti,ab OR 'functional defecation disorder*':ti,ab) AND (prevalence:ti,ab OR incidence:ti,ab) AND ('adolescent'/mj OR 'adolescen*':ti,ab OR 'puberty'/mj OR prepuber*:ti,ab OR youth:ti,ab OR teen*:ti,ab OR schoolchild*:ti,ab OR schoolage:ti,ab) AND [embase]/lim

Velasco-Benítez CA, Collazos-Saa LI, García-Perdomo HÁ. Uma revisão sistemática e meta-análise em escolares e adolescentes com Distúrbios gastrointestinais funcionáis de acordo com os critérios de Roma IV. Arq Gastroenterol. 2022;59(2):304-13.

RESUMO – Objetivo – Determinar a prevalência de distúrbios gastrointestinais funcionáis (DGF) em crianças de acordo com os critérios de Roma IV. **Métodos –** Incluímos coortes e estudos observacionais descritivos, incluindo informações para a prevalência de DGF de acordo com os critérios de Roma IV em crianças de 4 a 18 anos. Pesquisamos nas bases de dados MEDLINE (Ovid), EMBASE, LILACS e CENTRAL de maio de 2016 até os dias atuais. A literatura cinzenta e outras bases de dados também foram consultadas. O risco de viés foi avaliado usando a Declaração STROBE. Os resultados foram relatados em parcelas florestais dos efeitos estimados dos estudos incluídos com um intervalo de confiança de 95% (95%IC). **Resultados –** Foram incluídos 14 estudos envolvendo um total de 17.427 participantes. Três estudos foram realizados na Europa, dois na América do Norte e nove na América Latina. A maioria dos estudos foi de base escolar (n=14.670, 84,18%), os participantes eram em sua maioria do sexo feminino (55,49%), brancos (51,73%), de 8 a 18 anos (77,64%) e atendidos em escola pública (81,53%). Treze estudos usaram o Questionário de Sintomas Gastrointestinais Pediátricos (QPGS-RIV) para avaliar DGF. Encontramos uma prevalência global de DGF de 23% (95%IC 21–25%, I2 99%). Os principais distúrbios foram constipação funcional (CF) com 12% (95%IC 11–15%) seguido de dispepsia funcional (DF) (5%, 95%IC 11–15%) e síndrome do intestino irritável (SII) (3%, 95%IC 2–4%). A prevalência de DGF foi maior nas Américas, representando 23,67% (95%IC 21, 2–26,2%, I2 91,3%). **Conclusão –** DGF estão presentes em uma de quatro crianças e adolescentes, representando uma condição comum nessa faixa etária. Os distúrbios centrais foram CF, DF e SII.

Palavras-chave – Distúrbios gastrointestinais funcionáis; critérios de Roma IV; escolares; adolescentes.

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