Faecal Impaction in Children: Protocol for a Systematic Review and Meta-Narrative Analysis of Definitions Used

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Introduction

Functional constipation (FC) is defined by the Rome IV criteria as a disorder of gut-brain interaction.[1] FC is of common occurrence in children and is associated with a reduced health-related quality of life.[2] In a systematic review that meta-analysed 33 paediatric studies from around the globe, FC reported a pooled prevalence of 9.5% (95% CI 7.5-12.1).[3] FC also incurs considerable healthcare costs attributing to about $3.9 billion annually.[4]

Faecal impaction is a common problem in children with constipation.[5, 6] Timely identification of the impaction minimizes complications and poor outcomes.[7] Multiple items of the Rome IV criteria for FC refer to faecal impaction. The criteria refer to key symptoms such as history of large diameter stools and presence of large faecal mass in the rectum. In children who have acquired toilet training skills, history of large diameter stools that can obstruct the toilet, also refers to faecal impaction. Additionally, the Rome IV criteria recommends differentiating patients with IBS-C from FC, based on the resolution of pain after disimpaction.[1] However, faecal impaction is not defined in its own right in any of these criteria.

Overall, there is a gap in the literature for investigating faecal impaction in children. Some controlled trials and research studies' protocol calls for the inclusion or exclusion of participants with faecal impaction; [8-12] however, a clear definition of faecal impaction is seldom explicitly stated. A recent systematic review of treatments for faecal impaction found a huge variability in

how it was practically defined, with the authors noting much clinical heterogeneity in the patients included that without a uniform definition is difficult for future researchers to address (in progress).

A definition is vital to compare results across studies that potentially could be measuring different clinical presentations and for understanding the appropriateness of different treatment modalities within such diverse clinical circumstances.

Despite the clinical, diagnostic, and prognostic importance of having a unified definition of faecal impaction, there is no universally accepted definition for faecal impaction. Previous researchers have attempted to define faecal impaction.[13] In 2005, the Paris Consensus on Childhood Constipation Terminology (PACCT) group sought to define it in effort to mitigate the existing gap for a definition. They defined faecal impaction as the accumulation of hard stools in the rectum or colon with the unlikely ability to pass it spontaneously. They also stated that it should be assessed by physical examination or by abdominal radiography when appropriate.[13] Still, there is a lack of consensus across multiple studies even after the publication of the recommended definition.

We conducted a systematic review to unveil what criteria are currently used to define faecal impaction and to recommend directions for creating a globally accepted definition.

Methods

Literature search

A comprehensive literature search will be conducted utilising prominent databases, including CENTRAL, MEDLINE, Embase, WHO ICTR, and ClinicalTrials.gov. The search will use the following terms: (Faecal OR rectal) AND impact* AND child*. The search will be conducted by an information specialist. The Meta-Analysis PRISMA 2020 checklist and Reporting Items for Systematic Reviews will be followed.

Inclusion criteria

All relevant publications from January 1993 to November 2023 on faecal impaction in children, adhering to the most recent CONSORT statement will be included.

Type of participants

Paediatric patients with faecal impaction between the ages of 4-18 years old.

Type of intervention

Any study that involves the examination and comparison of different interventions, drug dosages, or the absence of intervention will be eligible for inclusion using any research design (RCT, non-randomized trials, observational studies). All languages will be considered.

Type of outcome

Any outcome measures.

Exclusion criteria

Studies that exclusively focused on adults or children aged less than 4 years old will not be included. Additionally, opinion papers, commentaries, editorials, secondary evidence and review articles, and other non-interventional articles will also not be included in the review.

Screening

Titles and abstracts of studies will be screened independently in duplicate for eligibility. Full papers containing pertinent information will be retried and subsequently examined by two reviewers. A third author will resolve disagreements.

Data extraction

Data extraction will be conducted for all included studies. The extraction will be completed independently in duplicate, and disagreements will be resolved by a third reviewer. Data will be extracted for the following:

- Definitions for faecal impaction if explicitly stated
- Reference for definition utilised (if applicable)
- If there is no explicit definition, extract data that supports any implication of the definition used.
- Classification of the study as an explicit or implicit definition.
- Type of study
- Age of inclusion
- Location(s) of study

The extracted data will be recorded within a database file.

Definition of faecal impaction

Studies will be organised based on the designated type of definition: explicit or implicit. A common theme among definitions used will be identified.

- Mention of a time frame within the definition
- Reference for any definition
- Previous constipation or impaction experience
- Mention of constipation and how this may be defined (e.g. Rome criteria)
- Mention of bowel frequency
- Method of clinical assessment
- Terminology (faecaloma, faecal mass, etc.)

We will follow a meta-narrative approach, which emphasises similarities and differences observed among definitions. The execution of this method adheres to the RAMESES publication standards for meta-narrative reviews as outlined by Wong et al.[14]

Data analysis

The extracted data will be analysed for themes of convergence and disagreement on the terms used to define faecal impaction by the included studies' authors. No quantitative data will be analysed in the review apart from descriptive data and percentages.

Risk of bias assessment

Bias analysis is not applicable, as the included studies' level of bias does not affect the definition of faecal impaction. This meta-narrative review focuses solely on the definition as its exclusive outcome of interest.

Patient and Public Involvement

Patient involvement is not part of the scope of the review.

Research ethics approval

No ethics approval is required for this project.

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