**Supplementary Online Content**

Boronat AC, Ferreira-Maia AP, Matijasevich A, Wang YP. Epidemiology of Functional Gastrointestinal Disorders in Children and Adolescents: a systematic review. *World Journal of Gastroenterology.*

**Appendix.** Search Strategies

**eTable S1.** Critical appraisal of eligible studies of the prevalence/frequency of functional gastrointestinal disorders (FGID) in children and adolescents

This supplementary material has been provided by the authors to give readers additional information about their work.

**Appendix. Search Strategies**

**Epidemiology of Functional Gastrointestinal Disorders in Children and Adolescents: a Systematic Review.**

**Search Methodology**

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**SEARCH #1**

**Search #1A**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"functional gastrointestinal disorders"[All Fields] OR (funcional[All Fields] AND gastrointestinal[All Fields] AND ("diagnosis"[Subheading] OR "diagnosis"[All Fields] OR "symptoms"[All Fields] OR "diagnosis"[MeSH Terms] OR "symptoms"[All Fields])) AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("child"[MeSH Terms:noexp] OR "adolescent"[MeSH Terms]))

*#Articles: 14*

**Search #1B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

ALL("functional gastrointestinal disorders" or "funcional gastrointestinal symptoms" and (epidemiology or prevalence or incidence) and "rome criteria" and Children and Adolescent) AND DOCTYPE(ar) AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) )

*#Articles 52*

**Search #1C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'functional gastrointestinal disorders' OR 'funcional gastrointestinal symptoms' AND ('epidemiology'/exp OR epidemiology OR 'prevalence'/exp OR prevalence OR 'incidence'/exp OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles 14*

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**SEARCH #2**

**Search #2A:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"functional nausea"[All Fields] OR "functional vomiting"[All Fields] OR "Cyclic vomiting syndrome"[All Fields] OR "vomiting disorders"[All Fields] OR "vomiting episodes"[All Fields] OR "early morning Nausea"[All Fields] OR "Bothersome Nausea"[All Fields] OR "Rumination Syndrome"[All Fields] OR "Aerophagia"[All Fields] AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("child"[MeSH Terms:noexp] OR "adolescent"[MeSH Terms]))

*#Articles: 2*

**Search #2B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

ALL "functional nausea" or "functional vomiting" or "Cyclic vomiting syndrome" or "vomiting disorders" or "vomiting episodes" or "early morning Nausea" or "Bothersome Nausea" or "Rumination Syndrome" or "Aerophagia" and (epidemiology or prevalence or incidence) and "rome criteria" AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) ) AND ( LIMIT-TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

*#Articles: 9*

**Search #2C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'functional nausea' OR 'functional vomiting' OR 'cyclic vomiting syndrome' OR 'vomiting disorders' OR 'vomiting episodes' OR 'early morning nausea' OR 'bothersome nausea' OR 'rumination syndrome' OR 'aerophagia' AND (epidemiology OR prevalence OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles: 3*

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**SEARCH #3**

**Search #3A:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"Cyclic vomiting syndrome"[All Fields] OR "vomiting episodes"[All Fields] AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("child"[MeSH Terms:noexp] OR "adolescent"[MeSH Terms]))

*#Articles: 1*

**Search #3B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

ALL "Cyclic vomiting syndrome" or "vomiting episodes" and (epidemiology or prevalence or incidence) and "rome criteria" AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) ) AND ( LIMIT-TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

*#Articles: 6*

**Search #3C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'cyclic vomiting syndrome' OR 'vomiting episodes' AND (epidemiology OR prevalence OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles: 2*

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**SEARCH #4**

**Search #4A:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"functional nausea"[All Fields] OR "functional vomiting"[All Fields] OR "early morning Nausea"[All Fields] OR "Bothersome Nausea"[All Fields] AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("child"[MeSH Terms:noexp] OR "adolescent"[MeSH Terms]))

*#Articles: 0*

**Search #4B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

ALL "functional nausea" OR "functional vomiting" or "early morning Nausea" OR "Bothersome Nausea" AND (epidemiology OR prevalence OR incidence) AND "rome criteria" AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) ) AND ( LIMIT-TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

*#Articles: 1*

**Search #4C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'functional nausea' OR 'functional vomiting' OR 'early morning nausea' OR 'bothersome nausea' AND (epidemiology OR prevalence OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles: 0*

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**SEARCH #5**

**Search #5A:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"functional nausea"[All Fields] OR "early morning Nausea"[All Fields] OR "Bothersome Nausea"[All Fields] AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("child"[MeSH Terms:noexp] OR "adolescent"[MeSH Terms]))

*#Articles: 0*

**Search #5B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

ALL "functional nausea" or "early morning Nausea" OR "Bothersome Nausea" AND (epidemiology OR prevalence OR incidence) AND "rome criteria" AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) ) AND ( LIMIT-TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

*#Articles: 1*

**Search #5C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'functional nausea' OR 'early morning nausea' OR 'bothersome nausea' AND (epidemiology OR prevalence OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles: 0*

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**SEARCH #6**

**Search #6A:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"functional vomiting"[All Fields] AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("child"[MeSH Terms:noexp] OR "adolescent"[MeSH Terms]))

*#Articles: 0*

**Search #6B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

ALL "functional vomiting" AND (epidemiology OR prevalence OR incidence) AND "rome criteria" AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) ) AND ( LIMIT-TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

*#Articles: 0*

**Search #6C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'functional vomiting' AND (epidemiology OR prevalence OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles: 0*

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**SEARCH #7**

**Search #7A:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"Rumination Syndrome"[All Fields] AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("child"[MeSH Terms:noexp] OR "adolescent"[MeSH Terms]))

*#Articles: 0*

**Search #7B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"Rumination Syndrome" and (epidemiology or prevalence or incidence) and "rome criteria" AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) ) AND ( LIMIT-TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

*#Articles: 0*

**Search #7C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'rumination syndrome' AND (epidemiology OR prevalence OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles: 0*

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**SEARCH #8**

**Search #8A:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"Aerophagia"[All Fields] AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("child"[MeSH Terms:noexp] OR "adolescent"[MeSH Terms]))

*#Articles: 2*

**Search #8B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

ALL "Aerophagia" and (epidemiology or prevalence or incidence) and "rome criteria" AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) ) AND ( LIMIT-TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

*#Articles: 6*

**Search #8C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'aerophagia' AND (epidemiology OR prevalence OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles: 3*

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**SEARCH #9**

**Search #9A:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"functional abdominal pain disorders"[All Fields] OR "Functional Dyspepsia"[All Fields] OR "Irritable bowel Syndrome"[All Fields] OR "Abdominal Migraine"[All Fields] OR (Functional[All Fields] AND ("abdominal pain"[MeSH Terms] OR ("abdominal"[All Fields] AND "pain"[All Fields]) OR "abdominal pain"[All Fields]) AND otherwise[All Fields] AND specified[All Fields]) OR (Functional[All Fields] AND ("abdominal pain"[MeSH Terms] OR ("abdominal"[All Fields] AND "pain"[All Fields]) OR "abdominal pain"[All Fields]) AND otherwise[All Fields] AND specified[All Fields]) OR (Functional[All Fields] AND ("abdominal pain"[MeSH Terms] OR ("abdominal"[All Fields] AND "pain"[All Fields]) OR "abdominal pain"[All Fields] OR ("abdominal"[All Fields] AND "pain"[All Fields] AND "nos"[All Fields]))) OR (Functional[All Fields] AND ("abdominal pain"[MeSH Terms] OR ("abdominal"[All Fields] AND "pain"[All Fields]) OR "abdominal pain"[All Fields] OR ("abdominal"[All Fields] AND "pain"[All Fields] AND "nos"[All Fields]))) OR "Functional abdominal pain"[All Fields] OR "FAPS"[All Fields] AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("child"[MeSH Terms:noexp] OR "adolescent"[MeSH Terms]))

*#Articles: 27*

**Search #9B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

ALL "functional abdominal pain disorders" or "Functional Dyspepsia" or "Irritable bowel Syndrome" or "Abdominal Migraine" or "Functional abdominal pain - not otherwise specified" or "Functional abdominal pain not otherwise specified" or "Functional abdominal pain - NOS" or "Functional abdominal pain NOS" or "Functional abdominal pain" or "FAPS" and (epidemiology or prevalence or incidence) and "rome criteria" AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) ) AND ( LIMIT-TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

*#Articles: 115*

**Search #9C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'functional abdominal pain disorders' OR 'functional dyspepsia' OR 'irritable bowel syndrome' OR 'abdominal migraine' OR 'functional abdominal pain - not otherwise specified' OR 'functional abdominal pain not otherwise specified' OR 'functional abdominal pain - nos' OR 'functional abdominal pain nos' OR 'functional abdominal pain' OR 'faps' AND (epidemiology OR prevalence OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles: 20*

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**SEARCH #10**

**Search #10A:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"Functional Dyspepsia"[All Fields] AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("child"[MeSH Terms:noexp] OR "adolescent"[MeSH Terms]))

*#Articles: 9*

**Search #10B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

ALL "Functional Dyspepsia" and (epidemiology or prevalence or incidence) and "rome criteria" AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) ) AND ( LIMIT-TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

*#Articles: 44*

**Search #10C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'functional dyspepsia' AND (epidemiology OR prevalence OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles: 8*

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**SEARCH #11**

**Search #11A:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"Irritable Bowel Syndrome"[All Fields] OR "IBS"[All Fields] AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("child"[MeSH Terms:noexp] OR "adolescent"[MeSH Terms]))

*#Articles: 25*

**Search #11B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

ALL "Irritable Bowel Syndrome" or "IBS" and (epidemiology or prevalence or incidence) and "rome criteria" AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) ) AND ( LIMIT TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

*#Articles: 104*

**Search #11C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'irritable bowel syndrome' OR 'ibs' AND (epidemiology OR prevalence OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles: 19*

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**SEARCH #12**

**Search #12A:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"Abdominal Migraine"[All Fields] AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("child"[MeSH Terms:noexp] OR "adolescent"[MeSH Terms]))

*#Articles: 5*

**Search #12B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

ALL "Abdominal Migraine" AND (epidemiology OR prevalence OR incidence) AND "rome criteria" AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) ) AND ( LIMIT-TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

*#Articles: 10*

**Search #12C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'abdominal migraine' AND (epidemiology OR prevalence OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles: 8*

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**SEARCH #13**

**Search #13A:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

(Functional[All Fields] AND ("abdominal pain"[MeSH Terms] OR ("abdominal"[All Fields] AND "pain"[All Fields]) OR "abdominal pain"[All Fields]) AND otherwise[All Fields] AND specified[All Fields]) OR (Functional[All Fields] AND ("abdominal pain"[MeSH Terms] OR ("abdominal"[All Fields] AND "pain"[All Fields]) OR "abdominal pain"[All Fields]) AND otherwise[All Fields] AND specified[All Fields]) OR (Functional[All Fields] AND ("abdominal pain"[MeSH Terms] OR ("abdominal"[All Fields] AND "pain"[All Fields]) OR "abdominal pain"[All Fields] OR ("abdominal"[All Fields] AND "pain"[All Fields] AND "nos"[All Fields]))) OR (Functional[All Fields] AND ("abdominal pain"[MeSH Terms] OR ("abdominal"[All Fields] AND "pain"[All Fields]) OR "abdominal pain"[All Fields] OR ("abdominal"[All Fields] AND "pain"[All Fields] AND "nos"[All Fields]))) OR "Functional abdominal pain"[All Fields] OR "FAPS"[All Fields] AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("adolescent"[MeSH Terms] OR "child"[MeSH Terms:noexp]))

*#Articles: 13*

**Search #13B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

ALL "Functional abdominal pain - not otherwise specified" or "Functional abdominal pain not otherwise specified" or "Functional abdominal pain - NOS" or "Functional abdominal pain NOS" or "Functional abdominal pain" or "FAPS" and (epidemiology or prevalence or incidence) and "rome criteria" AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) ) AND ( LIMIT-TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

*#Articles: 58*

**Search #13C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'functional abdominal pain - not otherwise specified' OR 'functional abdominal pain not otherwise specified' OR 'functional abdominal pain - nos' OR 'functional abdominal pain nos' OR 'functional abdominal pain' OR 'faps' AND (epidemiology OR prevalence OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles: 8*

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**SEARCH #14**

**Search #14A:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"Functional defecation disorders"[All Fields] OR "Functional Constipation"[All Fields] OR "Nonretentive Fecal Incontinence"[All Fields] AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("child"[MeSH Terms:noexp] OR "adolescent"[MeSH Terms]))

*#Articles: 8*

**Search #14B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

ALL "Functional Defecations Disorders" OR "Functional Constipation" OR "Nonretentive Fecal Incontinence" and (epidemiology or prevalence or incidence) and "rome criteria" AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) ) AND ( LIMIT-TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

*#Articles: 18*

**Search #14C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'functional defecations disorders' OR 'functional constipation' OR 'nonretentive fecal incontinence' AND (epidemiology OR prevalence OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles: 8*

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**SEARCH #15**

**Search #15A:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"Functional Constipation"[All Fields] AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("adolescent"[MeSH Terms] OR "child"[MeSH Terms:noexp]))

*#Articles: 8*

**Search #15B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

ALL "Functional Constipation" and (epidemiology or prevalence or incidence) and "rome criteria" AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) ) AND ( LIMIT-TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

*#Articles: 17*

**Search #15C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'functional constipation' AND (epidemiology OR prevalence OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles: 8*

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**SEARCH #16**

**Search #16A:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**PubMed** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

"Nonretentive Fecal Incontinence"[All Fields] AND (("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "epidemiology"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "prevalence"[All Fields] OR "prevalence"[MeSH Terms]) OR ("epidemiology"[Subheading] OR "epidemiology"[All Fields] OR "incidence"[All Fields] OR "incidence"[MeSH Terms])) AND "rome criteria"[All Fields] AND (Journal Article[ptyp] AND ("child"[MeSH Terms:noexp] OR "adolescent"[MeSH Terms]))

*#Articles: 1*

**Search #16B:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**SCOPUS** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

ALL "Nonretentive Fecal Incontinence" AND (epidemiology OR prevalence OR incidence) AND "rome criteria" AND ( LIMIT-TO(DOCTYPE,"ar" ) ) AND ( LIMIT-TO(SUBJAREA,"MEDI" ) ) AND ( LIMIT-TO(EXACTKEYWORD,"Adolescent" ) OR LIMIT-TO(EXACTKEYWORD,"Child" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

*#Articles: 1*

**Search #16C:**

DATABASE SEARCHED & TIME PERIOD COVERED:

**EMBASE** –unlimited initial date - 09/30/2016

Language: all

Search strategy:

'nonretentive fecal incontinence' AND (epidemiology OR prevalence OR incidence) AND 'rome criteria' AND 'human'/de AND ([adolescent]/lim OR [child]/lim) AND 'article'/it

*#Articles: 1*

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**eTable S1.** Critical appraisal of eligible studies of the prevalence/frequency of functional gastrointestinal disorders (FGID) in children and adolescents

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author, year, Country** | **Sample size (n)** | **Sample design, sampling method** | **Sampling frame** | **Measures** | **Unbiased assessor** | **Response rate, refusers** | **Prevalence rate, CI, subgroups** | **Score, Limitations** |
| Baber et al., 2008, USA | 548 | Cross-sectional, consecutive admission, patients 8-17yo | Referred children to tertiary care, contact by phone for parental consent | Rome IIRome IIIParental QPGS Clinical evaluationMedical recordsLaboratory exams  | Board-certified pediatric GI | 80.1% Reasons for non-response givenRefusers not described | 68%186.6%2No CI given  | **Score 5**Consecutive admissionSpecialty care settingNo CI given |
| Bhatia et al., 2016, India | 1200 | Cross-sectional,non-random sample of students 10-17yo | Students from 4 semi-urban government schools in Delhi | Rome III Self-administered QPGS-RIII Medical recordsPhysical examination | Trained investigators and clinical team (doctors and paramedical staff) | 93.3%Reasons for non-response not described Refusers not described | 10% No CI given  | **Score 5**Non-random sampleSampling frame limitedNo CI given |
| Burgers et al., 2012, Netherlands | 176  | Cross-sectional (retrospective), consecutive admission, patients ≥ 6yo | Referred children to tertiary care of academic hospital  | Rome IIRome III Clinical evaluationMedical recordsPhysical examination | Trained investigators | NRReasons for non-response not described Refusers not described | 5.7%1 86.9%2 for FGID subtypes No CI given | **Score 3**Small sample sizeConsecutive admissionSpecialty care settingNo participation rateNo CI given |
| Caplan, A. et al., 2005, Canada | 315 | Cross-sectional, consecutive admission, patients 4-18yo | Referred children to tertiary care | Rome IISelf-reported QPGSParental QPGSClinical evaluation | Board of researchers | NRReasons for non-response not described Refusers not described | 52.9-65.9%3 No CI given | **Score 3**Small sample sizeConsecutive admissionSpecialty care settingNo participation rateNo CI given |
| Cristofori et al., 2014, Italy | 992  | Cross-sectional, consecutive admission, patients 4-16yo | Referred children to tertiary care at academic hospital  | Rome III Clinical evaluationMedical recordsLaboratory exams | Trained investigators and doctors | NRReasons for non-response not described Refusers not described | 78.8% No CI given | **Score 4**Consecutive admissionSpecialty care settingNo participation rateNo CI given |
| Devanarayana et al., 2010, Sri Lanka | 464  | Cross-sectional,random sample of students 12-16yo | Students from one semi-urban school in Sri Lanka | Rome IIRome III Self-reported QPGS  | Research assistants, diagnosis based only on questionnaire responding | 92%Reasons for non-response givenRefusers not described | 13.6%128.8%2 No CI given | **Score 4**Sampling frame limitedNo clinical evaluationOnly questionnaire respondingNo CI given |
| Dong et al., 2005, China | 5403  | Cross-sectional, clustering sample of students 6-18yo  | Students from 2 different geographic areas in China  | Rome II Self-reported standard questionnaire Parental standard questionnaireMedical records | Research assistants, diagnosis based on questionnaire responding and medical records | NRReasons for non-response not described Refusers not described | 13.25% for FGID subtypesNo CI given | **Score 6**No participation rateNo CI given |
| Gijsbers et al., 2014, Netherlands | 220 | Cross-sectional, consecutive admission, patients 4-16yo  | Longitudinal assessment at secondary care of referred children | Rome III Clinical evaluation Medical recordsLaboratory exams | Board-certified pediatric GI | NRReasons for non-response not described Refusers not described | 67.3% No CI given | **Score 3**Small sample sizeConsecutive admissionSpecialty care settingNo participation rate No CI given |
| Gulewitsch et al., 2013, Germany | 3658 | Cross-sectional,non-random sample of students 6-10yo | Students from 22 public elementary schools in Germany | Rome III Parental QPGS-RIII Parental CSI Parental SDQ  | Research assistants, diagnosis based only on questionnaire responding  | 43.1% Reasons for non-response givenRefusers not described | 7.7% for FGID subtypes No CI given | **Score 2**Non-random sampleSampling frame somewhat limitedNo clinical evaluationOnly questionnaire respondingParticipation rate < 70 No CI given |
| Helgeland, H. et al., 2009, Norway | 192 | Cross-sectional, consecutive admission, patients 4-15yo | Referred children to 4 secondary care at 1 hospital | Rome IIIParental QPGS-III Clinical evaluation Medical recordsPhysical examinationLaboratory exams | Board of researchers | 79.1%Reasons for non-response described Refusers not described | 87% No CI given | **Score 3**Small sample sizeConsecutive admissionSpecialty care settingRefusers not describedNo CI given |
| Játiva et al., 2016, Ecuador | 420 | Cross-sectional,non-random sample of students 8-15yo | Students from 1 public school and 1 private school in Quito | Rome III Self-reported QPGS-RIII Parental standard questionnaire | Research assistants, diagnosis based only on questionnaire responding | 99.3% Reasons for non-response described Refusers not described | 22.6%No CI given | **Score 3**Non-random sampleSampling frame limitedNo clinical evaluationOnly questionnaire respondingNo CI given |
| Lewis et al., 2016, USA | 1447 | Cross-sectional, quota sampling of mothers with children 4-18yo | Nationwide community, online painelists | Rome III Parental QPGS-RIII PedsQL4.0 | Research assistants, diagnosis based only on questionnaire responding | NRReasons for non-response not described Refusers not described | 23.1% No CI given | **Score 2**Quota samplingSampling frame limitedNo clinical evaluationOnly questionnaire respondingNo participation rateNo CI given |
| Lu et al., 2016, Colombia | 4751  | Cross-sectional, non-random sample of students 12yo and 13yo | Students from 7 public schools and 5 private schools of 9 cities  | Rome III Self-reported QPGS-RIII Parental standard questionnaire | Research assistants, diagnosis based only on questionnaire responding | 89.8%Reasons for non-response described Refusers not described  | 4.8% for FGID subtypesNo CI given | **Score 3**Non-random sampleSampling frame somewhat limitedNo clinical evaluationOnly questionnaire respondingNo CI given |
| Lu et al., 2016, Panama | 436  | Cross-sectional, non-random sample of students 8-14yo  | Students from 1 public school and 2 private schools in Panama City | Rome III Self-reported QPGS-RIII Parental standard questionnaire | Research assistants, diagnosis based only on questionnaire responding | 82.8% Reasons for non-response described Refusers not described | 28.7% CI= 23.7-33.6  | **Score 4**Non-random sampleSampling frame somewhat limitedNo clinical evaluationOnly questionnaire responding |
| Rajindrajith et al., 2013, Sri Lanka | 1855  | Cross-sectional, random sample of students 13-18yo | Students from 4 schools randomly selected out of all schools in Gampaha  | Rome III Self-reported QPGS-RIII Self-reported PedsQL4.0 | Research assistants, diagnosis based only on questionnaire responding | 96.7%Reasons for non-response described Refusers not described | 7.7% for FGID subtypesNo CI given | **Score 5**No clinical evaluationOnly questionnaire respondingNo CI given |
| Sagawa et al., 2012, Japan | 3976  | Cross-sectional, random sample of students 10-17yo | Students from 40 schools randomly selected in Gunma | Rome III Self-reported QPGS-RIII Self-reported PedsQL4.0Clinical evaluationMedical records | Research assistants, diagnosis based on questionnaire respondingand medical records | NRReasons for non-response not described Refusers not described | 13.9% No CI given | **Score 6**No participation rateNo CI given |
| Saps et al., 2012, USA | 984 | Cross-sectional,Non-random sample of healthy subjects 4-18yo  | Unaffected siblings of children with GI diseases, phone questionnaire with parents | Rome IIIParental QPGS-III  | Research assistants, diagnosis based only on questionnaire responding | 25 %Reasons for non-response described Refusers not described | 2.4% No CI given | **Score 2**Non-random sampleSampling frame limitedNo clinical evaluationOnly questionnaire respondingParticipation rate < 70 No CI given |
| Saps et al., 2014, Colombia | 488 | Cross-sectional, non-random sample of students mean age 10.0yo | Students from 1 public school and 2 private schools in Pasto | Rome III Self-reported QPGS-RIII Parental standard questionnaire | Research assistants, diagnosis based only on questionnaire responding | 83.2%Reasons for non-response not described Refusers not described | 29% CI= 24.6-33.8  | **Score 4**Non-random sampleSampling frame somewhat limitedNo clinical evaluationOnly questionnaire responding |
| Schurman, J. et al, 2005, USA | 205 | Cross-sectional, consecutive admission, patients 8-18yo | Referred children to tertiary care | Rome IISelf-reported QPGSParental QPGSClinical evaluation  | Board of researchers | 75%Reasons for non-response not described Refusers not described  | 84-100%4 No CI given | **Score 3**Small sample sizeConsecutive admissionSpecialty care settingReasons for non-response not described Refusers not describedNo CI given |
| Uc et al., 2006, USA | 243  | Cross-sectional, consecutive admission, patients 4-17yo | Children from primary care | Rome II Parental QPGSClinical evaluation  | Board of researchers and doctors  | 100% | 21.4% No CI given | **Score 4**Small sample sizeConsecutive admissionPrimary care setting No CI given |
| Udoh et al., 2016, Nigeria | 856  | Cross-sectional, stratified random sample of students 10-18yo | Students from 11 schools randomly selected in Southern Nigeria  | Rome III Self-reported QPGS-RIII Standard questionnaires | Research assistants, diagnosis based only on questionnaire responding | NRReasons for non-response not described Refusers not described | 9.9% No CI given | **Score 4**No clinical evaluationOnly questionnaire respondingNo participation rateNo CI given |
| van Tilburg et al., 2013, USA | 135 | Cross-sectional, consecutive admission, patients 4-18yo | Referred children to tertiary care at 2 hospitals | Rome IIISelf-reported QPGS-IIIParental QPGS-III Clinical evaluation Medical records | Board of researchers | NRReasons for non-response not described Refusers not described | 82.3-90.1%3 No CI given | **Score 3**Small sample sizeConsecutive admissionSpecialty care settingNo participation rateNo CI given |
| Walker et al., 2004, USA | 114  | Cross-sectional, consecutive admission, patients 4-17yo  | Referred children to tertiary care at university medical center | Rome II Parental QPGS Clinical evaluation Parental standard interviewMedical recordsPhysical examinationLaboratory exams | Board of researchers and Board-certified pediatric GI  | NRReasons for non-response not described Refusers not described | 73% No CI given | **Score 3**Small sample sizeConsecutive admissionSpecialty care settingNo participation rateNo CI given |
| Yamamoto et al., 2015, Japan | 99416 | Cross-sectional, stratified random sample of students 12-18yo | Students from all junior and senior high schools randomly selected in Japan | Rome III Self-reported standard questionnaire | Research assistants, diagnosis based only on questionnaire responding | 92.2%Reasons for non-response not described Refusers not described | 18.6% for FGID subtypes CI= 17.9-19.2 | **Score 6**No clinical evaluationOnly questionnaire responding |
| Zablah et al., 2015, El Salvador | 434 | Cross-sectional, non-random sample of students 8-15yo | Students from 1 public school and 1 private school in El Salvador | Rome III Self-reported QPGS-RIII Parental standard questionnaire | Research assistants, diagnosis based only on questionnaire responding  | NRReasons for non-response not described Refusers not described | 20% CI= 16.3-24.2 | **Score 3**Non-random sampleSampling frame limitedNo clinical evaluationOnly questionnaire respondingNo participation rate |
| Zhou et al., 2011, China | 3671  | Cross-section, clustering sample of students 12-18yo | Students from 12 schools randomly selected in 2 districts of Shangai  | Rome III Self-reported standard questionnaire | Research assistants, diagnosis based only on questionnaire responding  | NRReasons for non-response not described Refusers not described | 5.4-24.9% for FGID subtypes with CI  | **Score 5**No clinical evaluationOnly questionnaire respondingNo participation rate |

1 according to Rome II; 2 according to Rome III; 3variation from parent to children-reported rates; 4variation from parent-reported rate to physician clinical impression

QPGS-RIII: Questionnaire on Pediatric Gastrointestinal Symptoms – Rome III

PedsQL4.0 Pediatric Quality of Life version Inventory 4.0

NR: not reported; CI: confidence interval; GI: gastrointestinal; yo: year-old; mo: month