

Systematic Review and Meta-Analysis of Fecal Incontinence Prevalence and Population Estimates

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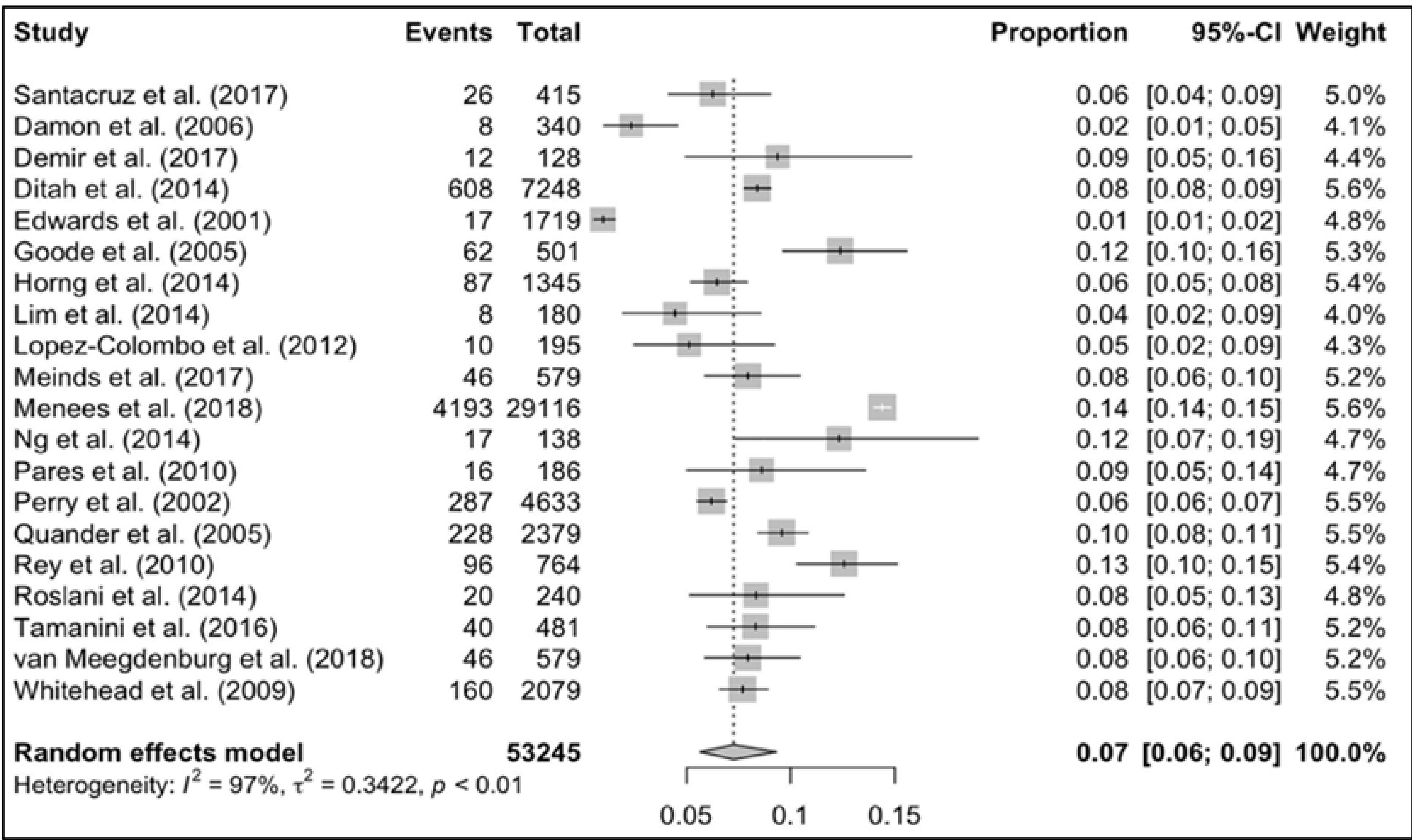
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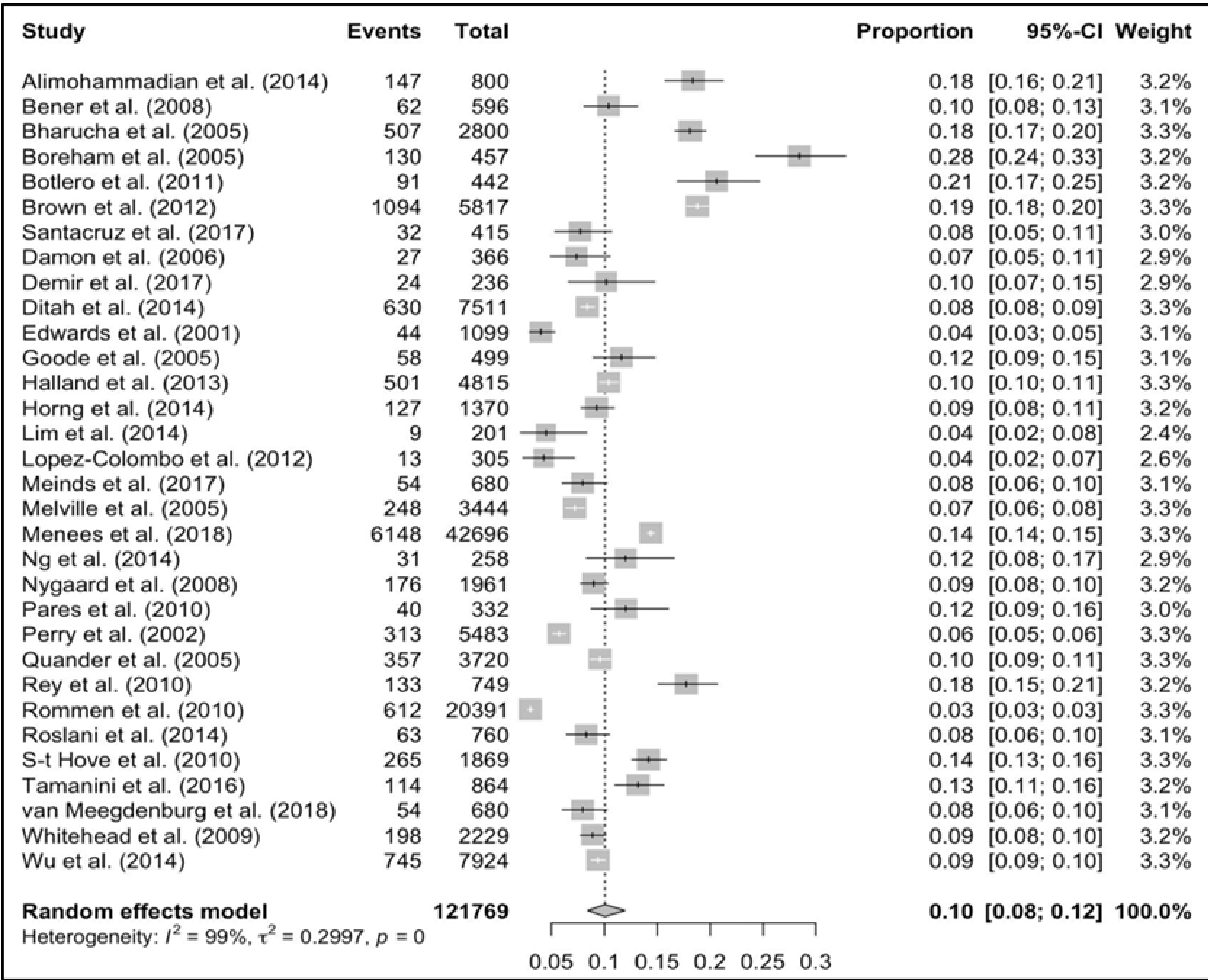
Background: Fecal incontinence (FI) is defined as the unintended loss of solid or liquid stool. FI adversely affects the patient’s quality of life. However, due to stigma, lack of awareness, and underdiagnosis, there is a notable gap in the knowledge regarding its prevalence. This study aimed to conduct a systematic review and meta-analysis of published literature reporting on FI prevalence and estimate the number of people afflicted by FI.

Methods: A systematic review was conducted following the PRISMA 2020 guidelines, using Embase, MEDLINE, CINHAL, and PubMed to identify publications in English language. The reference sections and content of the review papers were also evaluated. A meta-analysis of proportions was performed using RStudio software. A sub-analysis was conducted to account for the variation between sample population age groups minimize heterogeneity. The pooled prevalence was extrapolated to the Canadian population and ten most populated countries to estimate the number of people affected by FI.

Conclusion: Fecal incontinence is a prevalent underdiagnosed condition requiring appropriate and timely treatment to improve a patient’s quality of life.



2a. Men



2b. Women

Figure 1. Pooled fecal incontinence prevalence rate
CI: Confidence Interval

Results: The Mean pooled FI prevalence in men and women was 7% (95% CI: 6-9%) and 10% (95% CI: 8-12%), respectively. The sub-analysis mean pooled prevalence of FI in men and women was 8% (95% CI: 6-10%) and 10% (95% CI: 8-12%), respectively. The authors estimate that between 1 and 1.5 million Canadians and 320 to 500 million people in the ten most populous countries suffer from FI.

Table 1 - Estimated number of people with fecal incontinence in most populated countries

Country	Population (Mil.)			Number of people with Incontinence (Mil)			
	Total	F	M	FI		min	max
				F	M		
India	1,428.6	691.7	736.8	55.3	83.0	44.2	73.6
China	1,425.6	698.5	727.1	55.8	83.8	43.6	72.7
USA	340.0	171.7	168.3	13.7	20.60	10.1	16.8
Indonesia	277.5	137.8	139.7	11.0	16.5	8.3	13.9
Pakistan	240.4	119.2	121.2	9.5	14.3	7.2	12.1
Nigeria	223.8	110.6	113.1	8.8	13.2	6.7	11.3
Brazil	216.4	110.1	106.2	8.8	13.2	6.3	10.6
Bangladesh	172.9	87.2	85.6	6.9	10.4	5.1	8.5
Russia	144.4	77.3	67.0	6.1	9.2	4.0	6.7
Mexico	128.4	65.8	62.6	5.2	7.9	3.7	6.2
Total	4598.3	2270.3	2328.1	181.6	272.4	139.6	232.8

Table 2 - Estimated number of Canadians with fecal incontinence by province

Province	Number of People (1,000)	
	F	M
Alberta	136 - 204	102 - 170
British Columbia	172 - 258	126 0 210
Manitoba	42.4 - 63.6	31.2 - 52
New Brunswick	26.4 - 39.6	19.5 - 32.5
Newfoundland	17.6 - 26.4	12.6 - 21
Nova Scotia	33.6 - 50.4	24 - 40
Ontario	488 - 732	354- 590
Prince Edwards Island	5.4 - 8.1	3.9 - 6.6
Quebec	276 - 52.8	204 - 340
Saskatchewan	35.2 - 52.8	26.4 - 44