

## FECAL INCONTINENCE: A POPULATION BASED STUDY OF SEVERITY AND QUALITY OF LIFE.

### Hypothesis / aims of study

To estimate the prevalence of fecal incontinence, identify risk factors that increase fecal incontinence severity and assess quality of life in middle aged women.

### Study design, materials and methods

The Reproductive Risks for Incontinence Study at Kaiser is a population-based cohort of 2270 racially diverse women ranging from 40-89 years of age. Women with fecal incontinence were included in our study. Fecal incontinence, determined by self-report, prompted further administration of two validated measures, the Fecal Incontinence Severity Index (FISI) and Fecal Incontinence Quality of Life Scale (FIQL). The FISI assesses severity by summing weighted scores for frequency and type of fecal incontinence, be it gas, mucous, liquid or solid. The FIQL scale is a disease-specific tool composed of 29 items; these items form four subscales: Lifestyle, Coping, Depression, and Embarrassment. A summary score was created to assess overall fecal incontinence quality of life. Age, race, income, education, drinking, body mass index, diabetes, inflammatory bowel disease, parity, type of delivery, urinary incontinence, and abdominal or pelvic surgery were assessed by univariate and multivariate analysis. Multiple linear regression analysis was used to determine risk factors independently associated with increased fecal incontinence severity and poorer quality of life.

### Results

Fecal incontinence was reported by 545 (24%) of the cohort. The mean FISI score was 16.4 +/- 8.65 (range 3-51). FISI severity increased with age. Compared to women 40-49 years old, the FISI scores were increased by +1.4 (p=.035) in the 50-59 group, and by +3.4 (p=.0005) in the 60-69 group. Severity scores were also increased in those who have urinary incontinence (p=0.0006), diabetes (p=0.004), IBS (p=0.009), arthritis (p=0.05) and those who have had a stroke (p=0.005).

The FIQL scores for the cohort were Lifestyle 1.95 +/- .27 (range 1.0-3.2), Coping 2.37 +/- .32 (range 1-3.6), depression 3.5 +/- .65 (range 1.2-4.2), embarrassment 2.5 +/- .65 (range 1-4) and summary score 10.3 +/- 1.36 (range 4.1-13). The FIQL summary score was lower in those with diabetes (p=0.01), depression (p=0.01), and endometriosis (p=0.01) and significantly higher in those with "excellent to very good" and "good" health (p<0.0001) or those who have had a hysterectomy (p=0.04). Decreased individual subscale scores were associated with a number of different factors including menopause, alcohol use, urinary incontinence and pelvic surgery (including hysterectomy, colorectal surgery and surgery for urinary incontinence).

### Interpretation of results

Fecal incontinence is a common problem in females and there are multiple risk factors that can both increase severity and decrease quality of life. Advancing age is associated with increased fecal incontinence severity and embarrassment scores for patients 50-69, but the impact on quality of life was subjectively less for patients above 70. There are many factors that effect different aspects of quality of life related to fecal incontinence. Patients with chronic illnesses such as diabetes or endometriosis tend to have lower quality of life scores and increased severity of incontinence. On the other hand, patients with perceived excellent level of health had higher Depression and Embarrassment quality of life subscales. This indicates a complex relationship between perceived fecal incontinence severity and quality of life.

### Concluding message

As expected, the FISI scores are lower for this cohort than previously reported from fecal incontinence referral centers. Interestingly, this lower severity was not reflected in the higher FIQL scores. The lower quality of life score may reflect increased perceived effect of fecal incontinence on this diverse cohort of middle aged women. In addition, identifying risk factor such as diabetes and urinary incontinence may help identify women who would benefit from additional evaluation and treatment and prompt further research in fecal incontinence therapy.

### Keywords

Fecal Incontinence, Quality of Life

<b>Specify source of funding or grant</b>	None
<b>Is this a clinical trial?</b>	No
<b>What were the subjects in the study?</b>	HUMAN
<b>Was this study approved by an ethics committee?</b>	Yes
<b>Specify Name of Ethics Committee</b>	Commity on Human Research, Kaiser Permanente
<b>Was the Declaration of Helsinki followed?</b>	Yes
<b>Was informed consent obtained from the patients?</b>	Yes