

BRIEF REPORT

Effect of inflammatory bowel diseases on household chores

Kalle Mattila,^{*,†}  Rasmus Rankala,[‡] Markku Voutilainen[§] and Anssi Mustonen[‡]

*Department of Emergency Medicine, Turku University Hospital, Departments of [†]Public Health, [‡]Internal Medicine, Turku University Hospital, University of Turku and [§]Department of Clinical Medicine, University of Turku, Turku, Finland

Key words

Crohn's disease, household chores, inflammatory bowel disease, IBDQ-score, quality of life, ulcerative colitis.

Accepted for publication 21 February 2023.

Correspondence

Kalle Mattila, TYKS, T-sairaala, Savitehtaankatu 1, Turku, Finland.
Email: kalle.matias.mattila@tyks.fi

Declaration of conflict of interest: The authors declare no conflicts of interest.

Author Contribution: Concept and design: Kalle Mattila, Rasmus Rankala, Markku Voutilainen, Anssi Mustonen. Acquisition of data: Kalle Mattila, Rasmus Rankala, Anssi Mustonen. Analysis and interpretation of data: Kalle Mattila, Rasmus Rankala, Anssi Mustonen. Drafting of manuscript: Kalle Mattila.

Financial support: This study was supported by grants from the Hospital District of Southwest Finland.

Funding support: Hospital District of Southwest Finland

Introduction

Inflammatory bowel diseases (IBDs) comprise two main diseases ulcerative colitis (CU) and Crohn's disease (CD), which can cause gastrointestinal and systemic symptoms usually characterized by alternating periods of relapses and remissions.^{1,2} Previous studies have shown a distinct decrease both in a patient's and their family members' overall quality of life (QoL).³⁻⁵ The inflammatory bowel disease (IBDQ) score has been found to be a good tool for assessing the negative impact on several aspects of patients' everyday life.⁶ No previous studies that separately addressed the possible adverse effects of IBD on household chores were found by our study group.

The aim of this study was to estimate the negative impact of IBD on patients' abilities to perform household chores.

Materials and methods

Patient sample. The study took place at Turku University Hospital in Finland. A retrospective data gathering of adult patients with diagnosis codes K50 for CD and K51 for UC according to the ICD-10 system was identified during a one-year period between September 2015 and August 2016. Patients must have had at least one outpatient clinic visit or hospitalization due to IBD during the time period. This produced a study sample of 2208 patients.

A questionnaire was sent by mail in July 2018 to a randomized half (1104 patients) of the original study sample. The questionnaire was also resent by mail in September 2018 to those who had not responded. To improve the response rate, SMS reminders were sent to the patients. A possibility to answer the questionnaire via internet was also provided using a QR code in

the mailed questionnaire and SMS. If someone answered the questionnaire twice, only the first received questionnaire was accepted in the study. In total, 561 patients, yielding a response rate of 50.8%, were included in the final study sample. Men and women, as well as CU and CD patients, answered the questionnaire equally often. However, the ones who answered to the questionnaire were on average 2 years older than the patients were in the original sample.

Questionnaire. In the questionnaire, patients were asked about their demographic background, their monthly income, how many years they had had an IBD diagnosis, and if any previous surgical operations had been done. Patients were asked how much, on average, IBD was reducing their ability to perform their household chores using a visual analog scale (VAS) from 0 to 100, where 0 was labeled as not at all, and 100 as extremely. The subjects were asked to list household chores that had been particularly affected by IBD, using their own words, that is, they were neither provided with a predefined list of household chores nor given any restrictions which activities they could consider as household chores. The household chores listed were later analyzed and grouped into three categories: physical household chores (tasks that might be physically strenuous, e.g., gardening, cleaning), other household chores (e.g., cooking, doing laundry) and all household chores.

The translated and officially licensed IBDQ32 questionnaire was included in the questionnaire.⁷ The IBDQ score was calculated as a sum of all 32 questions with a smaller score representing a worse quality of life ranging from 32 to 224.

Also, data from the Social Insurance Institution of Finland and data from hospital records were acquired. This data included laboratory results, administration of biologics, and the use of oral glucocorticoids. The laboratory tests taken at Turku University Hospital during the study period included the lowest, highest, and average values.

Ethical considerations. The ethical committee of The Hospital District of Southwest Finland approved the study. The patients received a written description of the sampling procedure and study purpose as well as the planned use and storage of the information they were to provide. This was followed by a description of the subject's rights according to the Helsinki declaration.

Statistical analyses. The statistical evaluation of the data was based on the Chi-Square test and Fisher's exact test for proportions and on the Student's *t*-test for mean. The Pearson coefficients of correlation were used to examine the degree of the relationship between two continuous variables. All analyses were performed in SPSS version 27 (SPSS Inc., Chicago, IL, USA).

Results

Of a total of 561 patients who answered the questionnaire, 35.8% of the respondents had CD and 64.2% UC. The average age of the respondents was 53.2 years (20–93), and 49.4% of them were women (Table 1). The average IBDQ score was 172 (range 44–223, SD \pm 34).

More than half of the patients (53.3%) reported that IBD had caused a limitation in their household chores, and women were more likely to report a limitation compared to men. Of those who reported limitations, they reported on average 32.5 on a 0–100 VAS scale. There was no significant correlation between a negative impact on household chores and how many years the patient had IBD. IBD also seemed to affect patients of all ages equally, as there was no statistical correlation with age on these studied outcomes. However, patients with a higher level of income had a less negative impact on their ability to perform household chores ($r = -0.173$, $P < 0.001$; Table 1). Slightly more than a third of the patients (35.8%) reported at least one household chore to be negatively impacted. Approximately one fourth of them reported that IBD negatively impacts all of their household chores.

In laboratory tests, low hemoglobin ($r = -0.111$, $P < 0.05$) and high alanine aminotransferase ($r = 0.146$, $P < 0.01$) had a slight correlation with the negative impact, while other laboratory tests (C-reactive protein, fecal calprotectin and leucocytes) did not.

The IBDQ32 score had a significant correlation with a lower limitation score ($r = -0.51$, $P < 0.001$), and patients who did not report any negatively impacted household chore had a significantly higher IBDQ32 score (158 vs. 179, $P < 0.01$).

Discussion

IBD causes both gastrointestinal and systemic symptoms that are particularly severe during relapses. However, even during remission, patients can experience limitations due to IBD. Household chores can be considered mostly as some tasks that patients have to do every day and that cannot be postponed until IBD is in remission.

Our study shows that IBD has a distinctly negative impact on household chores. There were no studies, to our knowledge, which have studied the impact of gastrointestinal diseases on household chores. In Psoriasis the percentage of patients reporting disadvantage in household chores was very similar (57%) to our study.⁸ In Rheumatoid arthritis, the percentage was significantly higher (84.6%), although the patient population was also significantly older, which is likely to affect the outcome.⁹

The patients with a higher level of income had a smaller negative impact on household chores. It is possible that these patients were more likely to pay for outside assistance, thus not feeling the burden of IBD as much as those with smaller monthly incomes do.

Even though low hemoglobin and high alanine aminotransferase laboratory test values had a slight statistically significant correlation with increased negative impact on household chores, it seems fair to state that, overall, the laboratory tests correlated poorly with patients' performance on household chores. Clinicians treating IBD patients should ask about their patient's overall well-being and quality of life and maybe, as a part of that, their ability to perform household chores. The IBDQ32-questionnaire seems to correlate well with both studied outcomes and seems an excellent tool for screening also on patients' performance on household chores.

Table 1 Patient characteristics and the percentage of patients that reported a limitation on their household chores due to inflammatory bowel diseases (IBD) and their average level of limitation on a visual analog scale (VAS) scale and the percentage of patients that reported some disadvantage in physical, other or “all” household chores due to IBD

		Reported limitation (%)	VAS scale on limitation	Disadvantage in physical household chores	Disadvantage in other household chores	Disadvantage in all household chores
All	561	53.3	32.5	63 (11.2%)	85 (15.1%)	53 (9.4%)
Women	(49.4%)	59.8**	34.4	35 (12.6%)	47 (17.0%)	30 (10.8%)
Men	(50.6%)	47.3**	29.9	28 (10.0%)	38 (13.4%)	23 (8.1%)
CU	360 (64.2%)	51.6	32.5	37 (10.3%)	54 (15.0%)	34 (9.4%)
CD	201 (35.8%)	56.3	32.5	26 (12.9%)	31 (15.4%)	19 (9.5%)
Operation	117 (20.9%)	58.7	37.0	16 (13.7%)	23 (19.7%)	14 (12.0%)
No operation	444 (79.1%)	51.6	31.0	45 (10.4%)	61 (14.1%)	39 (9.0%)
Biologics	67 (12.8%)	64*	29.7	12 (17.9%)	9 (13.4%)	7 (10.4%)
No biologics	494 (87.2%)	51.9*	32.7	48 (10.6%)	68 (15.0%)	45 (10.0%)

* $P < 0.05$.** $P < 0.01$.

Conclusions

This study showed that many IBD patients experienced a moderate negative effect on their household chores due to their disease. The IBDQ32-questionnaire correlates well with this specific part of patients' everyday life.

Data availability statement. The data underlying this article will be shared on reasonable request to the corresponding author.

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