

# Risk factors of work disability in patients with inflammatory bowel disease — A Dutch nationwide web-based survey

## Work disability in inflammatory bowel disease

Mirthe E. van der Valk<sup>a</sup>, Marie-Josée J. Mangen<sup>b</sup>, Max Leenders<sup>a</sup>, Gerard Dijkstra<sup>c</sup>, Ad A. van Bodegraven<sup>d</sup>, Herma H. Fidder<sup>a</sup>, Dirk J. de Jong<sup>e</sup>, Marieke Pierik<sup>f</sup>, C. Janneke van der Woude<sup>g</sup>, Mariëlle J.L. Romberg-Camps<sup>h</sup>, Cees H.M. Clemens<sup>i</sup>, Jeroen M. Jansen<sup>j</sup>, Nofel Mahmmod<sup>k</sup>, Paul C. van de Meeberg<sup>l</sup>, Andrea E. van der Meulen-de Jong<sup>m</sup>, Cyriel Y. Ponsioen<sup>n</sup>, Clemens J.M. Bolwerk<sup>o</sup>, J. Reinoud Vermeijden<sup>p</sup>, Peter D. Siersema<sup>a</sup>, Martijn G.H. van Oijen<sup>a,q</sup>, Bas Oldenburg<sup>a,\*</sup> on behalf of the COIN study group and the Dutch Initiative on Crohn and Colitis

<sup>a</sup> Department of Gastroenterology and Hepatology, University Medical Centre Utrecht, Utrecht, The Netherlands

<sup>b</sup> Julius Centre for Health Sciences and Primary Care, University Medical Centre Utrecht, Utrecht, The Netherlands

<sup>c</sup> Department of Gastroenterology and Hepatology, University Medical Centre Groningen, Groningen, The Netherlands

<sup>d</sup> Department of Gastroenterology and Hepatology, VU University Medical Centre, Amsterdam, The Netherlands

<sup>e</sup> Department of Gastroenterology and Hepatology, Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands

<sup>f</sup> Department of Gastroenterology and Hepatology, Maastricht University Medical Centre, Maastricht, The Netherlands

<sup>g</sup> Department of Gastroenterology and Hepatology, Erasmus University Medical Centre, Rotterdam, The Netherlands

<sup>h</sup> Department of Gastroenterology and Hepatology, Orbis Medical Centre, Sittard, The Netherlands

<sup>i</sup> Department of Gastroenterology and Hepatology, Diaconessenhuis, Leiden, The Netherlands

<sup>j</sup> Department of Gastroenterology and Hepatology, Onze Lieve Vrouwe Gasthuis, Amsterdam, The Netherlands


<sup>k</sup> Department of Gastroenterology and Hepatology, Antonius Hospital, Nieuwegein, The Netherlands

<sup>l</sup> Department of Gastroenterology and Hepatology, Slingeland Hospital, Doetinchem, The Netherlands

<sup>m</sup> Department of Gastroenterology and Hepatology, Leiden University Medical Centre, Leiden, The Netherlands

<sup>n</sup> Department of Gastroenterology and Hepatology, Academic Medical Centre Amsterdam, The Netherlands

**Abbreviations:** CD, Crohn's disease; UC, Ulcerative colitis; IBD, Inflammatory bowel disease; Anti-TNF $\alpha$ , Anti-tumour necrosis factor  $\alpha$ ; COIN, Costs of inflammatory bowel disease in the Netherlands; DTCs, Diagnosis treatment combinations; SD, Standard deviation; CI, Confidence interval

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\* Corresponding author at: PO Box 85500, 3508 GA Utrecht, The Netherlands. Tel.: +31 887557325; fax: +31 887555533.

E-mail address: [boldenbu@umcutrecht.nl](mailto:boldenbu@umcutrecht.nl) (B. Oldenburg).

<sup>o</sup> Department of Gastroenterology and Hepatology, Reinier de Graaf Groep, Delft, The Netherlands

<sup>p</sup> Department of Gastroenterology and Hepatology, Meander Medical Centre, Amersfoort, The Netherlands

<sup>q</sup> Division of Digestive Diseases, David Geffen School of Medicine at University of California, Los Angeles, United States

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## KEYWORDS

Crohn's disease;  
Ulcerative colitis;  
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Risk factors

## Abstract

**Background:** Inflammatory bowel disease (IBD) is associated with high costs to society. Few data on the impact of IBD on work disability and potential predictive factors are available.

**Aim:** To assess the prevalence of and predictive factors for work disability in Crohn's disease (CD) and ulcerative colitis (UC).

**Methods:** A web-based questionnaire was sent out in seven university hospitals and seven general hospitals in the Netherlands. Initially, 3050 adult IBD patients were included in this prospective, nationwide cohort study, whereof 2629 patients were within the working-age (18–64 years). We used the baseline questionnaire to assess the prevalence rates of work disability in CD and UC patients within working-age. Prevalence rates were compared with the Dutch background population using age- and sex-matched data obtained from Statistics Netherlands. Multivariable logistic regression analyses were performed to identify independent demographic- and disease-specific risk factors for work disability.

**Results:** In CD, 18.3% of patients was fully disabled and 8.8% partially disabled, compared to 9.5% and 5.4% in UC patients ( $p < 0.01$ ), respectively. Compared to Dutch controls, the prevalence was significantly higher, especially in CD patients. Higher age, low education, depression, chronic back pain, joint manifestations and typical disease-related risk factors such as penetrating disease course and surgery in the past were all found to be associated with work disability.

**Conclusion:** We report high work disability rates in a large sample of IBD patients in the Netherlands. CD patients suffer more frequently from work disability than UC patients. A combination of demographic and disease-related factors is predictive of work disability.

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## 1. Introduction

Inflammatory bowel diseases (IBD) are chronic intestinal disorders, comprising Crohn's disease (CD) and ulcerative colitis (UC). IBD affects 2.5–3 million people in Europe, many of whom develop disease as working-age adults.<sup>1</sup> An important consequence is therefore a reduced ability to work, which can be decisive for future life expectations for patients themselves.<sup>2–10</sup> Work disability is associated with high costs to society.<sup>7,9,11–13</sup> The prevention or postponement of work disability should therefore be an important goal in the treatment of IBD patients.

The disability rates in previous reported studies vary considerably and range between 15 and 25% in CD and 5–13% in UC.<sup>2–9,12</sup> This is undoubtedly related to different patient populations, geographical differences and employed tools for the measurement of disability. Over the last decade, treatment goals of IBD have evolved from the induction and maintenance of clinical remission to the prevention of structural damage and long-term (work) disability with expanding use and early introduction of anti-tumour necrosis (anti-TNF) therapy and immunomodulators. Aggressive strategies seem to result in a substantially improved quality-of-life,<sup>14</sup> a reduction of hospitalisation and surgery,<sup>15,16</sup> and might benefit work productivity.<sup>17,18</sup> Knowledge on predictive factors for work disability could improve prevention strategies,

increase quality-of-life and reduce future productivity losses.

To date, few studies have attempted to explore the predictive factors for work disability in IBD. Most of these were underpowered,<sup>2,6</sup> or were conducted in highly selected populations.<sup>5,8</sup> In the present study we aimed to 1) assess the prevalence of work disability rate in a large nationwide cohort of IBD patients, 2) compare the disability rates with the general Dutch population and 3) determine predictive factors for work disability.

## 2. Materials and methods

### 2.1. Study design

Between October 2010 and October 2011 we invited by letter all identified IBD patients aged 18 years or older from seven university hospitals and seven general hospitals ( $n = 9550$ ) to participate in the COIN study. Identification was based on the Diagnosis Treatment Combinations (DTCs). We designed a secure web-based questionnaire and participants were invited to enter a username and password-secured and firewall-protected website to fill-out questionnaires. All patients were followed-up for 2 years at 3 month intervals. In total, 3050 patients were initially included in this cohort. Here,

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