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Earning potential in paediatric-onset IBD – a complex interplay

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3 **Title:** Earning potential in paediatric-onset IBD – a complex interplay

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5 **Running Head:** Earning potential in PIBD

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3 Individuals with childhood-onset inflammatory bowel disease (IBD) have consistently
4 been shown to have similar educational attainment as the general population, albeit
5 that previous studies have been small or cross-sectional in nature.^{1,2} Conversely,
6 those with adult-onset IBD have been shown to have poor work-related outcomes,
7 likely due to the complex interactions between IBD symptoms, medical and psychiatric
8 co-morbidities and potentially income itself.^{3,4} In patients diagnosed in early adulthood,
9 reduced ability to work has been associated with lower educational attainment and
10 female sex, with disease duration and the need for biologicals or immunomodulators
11 also shown to be factors.⁵ Current data would therefore suggest that life-long earnings
12 in those with IBD are likely influenced by numerous compounding factors which
13 interact during adolescence and early adulthood.

14
15 In this issue of Alimentary Pharmacology & Therapeutics Malmberg *et al* (reference)
16 use a large national case-control study to evaluate adult earnings in patients
17 diagnosed with IBD in childhood. After identifying 5,404 IBD patients diagnosed
18 <18yrs from their Swedish National Patient Register they case-matched 10:1 from the
19 general population. Analysing data from the 1990s (to include patients exposed to
20 immunomodulators) the authors analysed earnings between the ages of 20-30yrs. The
21 primary outcome was annual taxable earnings with secondary outcome annual
22 personalised disposable income. Subgroup analyses were performed stratifying for
23 sex, IBD subtype and more severe disease phenotype (i.e. those patients requiring
24 IBD surgery or long-term inpatient treatment).

25
26 Results showed that individuals with and without IBD had similar education levels
27 (except for those with more severe phenotype who had lower educational attainment),
28 marital status and unemployment. However, an increased proportion of patients with
29 IBD had a disability pension or were on sick leave compared to the general population.
30 With regard to primary outcome those with childhood-onset IBD had a modest 5.4%
31 lower annual taxable income (95%CI -9.1 to -1.8%); in those with a more severe
32 phenotype this difference was more pronounced (-16.3%; 95%CI -24.7 to -7.9%).
33 Various potential reasons for these findings were provided by the authors, such as
34 overall reduced school attendance, fatigue and loss of career drive due to chronic
35 illness. The earning gap also seemed to widen with increasing age. Interestingly there
36 was no significant difference in annual *disposable* income in those with and without
37 IBD; the authors suggest that this was likely due to the well-resourced and
38 comprehensive social security system in Sweden coupled with good job security.
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3 Although some economies may be able to adequately support patients with chronic
4 health issues to sustain a modest income level, those living with IBD continue to have
5 a number of ongoing challenges in the workplace. These include fatigue, diarrhoea,
6 faecal incontinence, inflexible work environment and difficulty accessing appropriate
7 disability rights.⁶ It is notable that the IBD disability index developed by expert
8 consensus included indices relating to education, work and employment and social
9 security services.⁷ Although further data is required to ascertain the impact of
10 childhood-onset IBD on future employment and earnings in different economic settings
11 it is also vital that employers recognise the effect of IBD on their employees and
12 provide suitable support on a practical level.⁸
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22 References

- 23 1. Calsbeek H, Rijken M, Dekker J, van Berge Henegouwen GP. Disease characteristics as
24 determinants of the labour market position of adolescents and young adults with chronic digestive
25 disorders. *Eur J Gastroenterol Hepatol*. 2006;18(2):203-9.
26
- 27 2. El-Matary W, Dufault B, Moroz SP, Schellenberg J, Bernstein CN. Education, Employment,
28 Income, and Marital Status Among Adults Diagnosed With Inflammatory Bowel Diseases During
29 Childhood or Adolescence. *Clin Gastroenterol Hepatol*. 2017;15(4):518-24.
30
- 31 3. Su S, Marrie RA, Bernstein CN. Factors Associated With Social Participation in Persons Living
32 With Inflammatory Bowel Disease. *J Can Assoc Gastroenterol*. 2022;5(2):59-67.
33
- 34 4. Bernstein CN, Kraut A, Blanchard JF, Rawsthorne P, Yu N, Walld R. The relationship between
35 inflammatory bowel disease and socioeconomic variables. *Am J Gastroenterol*. 2001;96(7):2117-25.
36
- 37 5. Mariappan L, Jiang XY, Jackson J, Drew Y. Emerging treatment options for ovarian cancer:
38 focus on rucaparib. *Int J Womens Health*. 2017;9:913-24.
39
- 40 6. Le Berre C, Peyrin-Biroulet L, Buisson A, Olympie A, Ravel MH, Bienenfeld C, et al. Impact of
41 inflammatory bowel diseases on working life: A French nationwide survey. *Dig Liver Dis*.
42 2019;51(7):961-6.
43
- 44 7. Peyrin-Biroulet L, Cieza A, Sandborn WJ, Coenen M, Chowers Y, Hibi T, et al. Development of
45 the first disability index for inflammatory bowel disease based on the international classification of
46 functioning, disability and health. *Gut*. 2012;61(2):241-7.
47
- 48 8. Paulides E, Daker C, Frampton C, Geary RB, Eglinton T, de Boer NKH, et al. Overcoming
49 Workplace Disability in IBD Patients: An Observational Study. *Inflamm Intest Dis*. 2020;5(2):84-92.
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