

Supplementary Table 1. Baseline characteristics of 192 Crohn's disease subjects with univariate and multivariate analysis of demographic and clinical factors associated with disability.

Variable	Univariate analysis		Multivariate analysis	
	IBD-DI (IQR)	P value	B (95% CI)	P value
(Constant)			20.48 (3.62 to 37.36)	.018
Age ≤35 years (n=110)	26 (14-39)	.961 ^a	0.01 (-0.26 to 0.27) ^b	.968
Age >35 years (n=82)	27 (13-39)			
Male (n=98)	21 (12-38)	.007 ^a	-	-
Female (n=94)	31 (17-40)		4.97 (0.22 to 9.73)	.040
Body mass index <25 (n=85) ^c	25 (13-39)		-	-
Body mass index 25-29 (n=76)	27 (15-39)	.952 ^d	0.18 (-0.35 to 0.70) ^b	.503
Body mass index ≥30 (n=28)	27 (13-40)			
Disease duration ≤ 5 years (n=85)	27 (11-38)	.394 ^a	-0.06 (-0.44 to 0.32) ^b	.749
Disease duration > 5 years (n=107)	25 (14-43)			
Small bowel disease (n=49) ^e	29 (13-43)		-	-
Colonic disease (n=53)	23 (13-38)	.546 ^d	0.22 (-6.52 to 6.95)	.949
Small bowel and colonic disease (n=89)	27 (16-39)		0.33 (-5.33 to 5.99)	.907
No perianal disease (n=160)	27 (13-39)	.925 ^a	-	-
Perianal disease (n=32)	28 (13-41)		-0.49 (-7.03 to 6.04)	.882
Student (n=32)	29 (13-43)		-	-
Employed/Homemaker (n=103)	25 (13-38)	.007 ^d	-4.09 (-11.11 to 2.94)	.252
Unemployed (n=44)	36 (18-48)		-1.58 (-9.98 to 6.83)	.712
Retired (n=13)	14 (6-27)		-19.62 (-33.63 to -5.60)	.006
Education to 16 years (n=43) ^c	32 (21-46)		-	-
Education to 18 years (n=52)	27 (14-41)	.067 ^d	-3.68 (-10.38 to 3.02)	.280
Third level (University) education (n=94)	23 (13-38)		-4.97 (-11.47 to 1.53)	.133
No current anti-depressant (n=276) ^b	25 (13-38)	.007 ^a	-	-
Current anti-depressant (n=44)	39 (19-53)		10.27 (3.45 to 17.09)	.003
No current cigarette smoking (n=270) ^b	25 (13-38)	.065 ^a	-	-
Current cigarette smoking (n=57)	32 (18-43)		1.15 (-4.65 to 6.96)	.695
No resectional surgery (n=111)	23 (13-36)		-	-
Previous bowel resection (n=63)	30 (17-43)	.035 ^d	4.88 (-0.55 to 10.30)	.078
Permanent stoma surgery (n=18)	37 (10-54)		2.50 (-6.48 to 11.48)	.583
No current steroid (n=160)	25 (13-38)	.008 ^a	-	-
Current steroid (n=32)	36 (22-46)		8.35 (1.96 to 14.73)	.011
No current immune modulator (n=124)	29 (13-42)	.286 ^a	-	-
Current immune modulator (n=68)	23 (14-37)		-1.85 (-6.60 to 2.89)	.442
No current biologic (n=230)	26 (14-38)	.550 ^a	-	-
Current biologic (n=99)	27 (11-46)		3.03 (-1.98 to 8.05)	.234
Inactive disease (n=241)	23 (13-36)	<.001 ^a	-	-
Active disease (n=88)	36 (24-46)		7.62 (2.38 to 12.86)	.005

Dummy variables for the multivariate analysis included male sex, Small bowel Crohn's, no perianal disease, retired subjects, Education to 16 years, no current antidepressant use, no cigarette smoking, no resectional surgery, no exposure to steroid medications, immune modulators or biologic agents, and disease remission. Univariate data are presented as medians and interquartile ranges (IQR) and multivariate data as B and 95% confidence intervals (CI).

^aMann-Whitney U test.

^bEntered into multivariate model as a continuous variable.

^cData not available for all cases.

^dKruskal-Wallis test.

^eA single Crohn's disease subject had only perianal disease.

Supplementary Table 2. Baseline characteristics of 137 ulcerative colitis subjects with univariate and multivariate analysis of demographic and clinical factors associated with disability.

Variable	Univariate analysis		Multivariate analysis	
	IBD-DI (IQR)	P value	B (95% CI)	P value
(Constant)			18.21 (-0.38 to 36.80)	.055
Age ≤35 years (n=58)	21 (14-34)	.303 ^a	-0.27 (-0.50 to -0.05) ^b	.019
Age >35 years (n=79)	21 (9-32)			
Male (n=73)	20 (9-29)	.037^a	-	-
Female (n=64)	24 (14-35)		4.37 (-0.39 to 9.14)	.071
Body mass index <25 (n=52) ^c	20 (10-33)		-	-
Body mass index 25-29 (n=48)	22 (9-32)	.983 ^d	0.09 (-0.34 to 0.51) ^b	.684
Body mass index ≥30 (n=33)	23 (11-32)			
Disease duration ≤ 5 years (n=70)	21 (10-32)	.703 ^a	0.06 (-0.29 to 0.42) ^b	.729
Disease duration > 5 years (n=67)	21 (11-32)			
Ulcerative proctitis (n=13)	23 (4-30)		-	-
Ulcerative colitis left colon (n=67)	23 (11-32)	.465 ^d	1.33 (-6.89 to 9.55)	.749
Ulcerative colitis total colon (n=57)	18 (10-29)		-1.53 (-10.03 to 6.97)	.723
Student (n=9)	20 (8-42)		-	-
Employed/Homemaker (n=100)	18 (9-30)	.021^d	1.48 (-9.41 to 12.37)	.789
Unemployed (n=16)	32 (25-48)		13.10 (0.59 to 26.62)	.040
Retired (n=12)	24 (16-33)		12.99 (-2.84 to 28.82)	.107
Education to 16 years (n=26) ^c	27 (7-34)		-	-
Education to 18 years (n=39)	18 (7-31)	.453 ^d	-1.07 (-8.59 to 6.45)	.779
Third level (University) education (n=70)	20 (14-33)		2.10 (-5.43 to 9.63)	.582
No current anti-depressant use (n=121) ^c	20 (10-30)	.045^a	-	-
Current anti-depressant use (n=13)	30 (21-47)		7.31 (-0.94 to 15.56)	.082
No cigarette smoking (n=121) ^c	20 (9-32)	.406 ^a	-	-
Cigarette smoking (n=15)	23 (13-52)		4.69 (-2.82 to 12.20)	.218
No resectional surgery (n=122)	22 (11-32)		-	-
Previous bowel resection (n=9)	20 (9-46)	.573 ^d	0.82 (-9.77 to 11.41)	.878
Permanent stoma surgery (n=6)	13 (5-29)		-7.31 (-19.05 to 4.44)	.220
No current steroid (n=104)	18 (9-30)	.001^a	-	-
Current steroid (n=33)	29 (19-39)		6.61 (0.88 to 12.33)	.024
No current immune modulator (n=95)	23 (9-32)	.688 ^a	-	-
Current immune modulator (n=42)	20 (14-33)		1.90 (-3.37 to 7.17)	.476
No current biologic (n=108)	21 (13-32)	.862 ^a	-	-
Current biologic (n=29)	23 (9-36)		0.01 (-6.03 to 6.06)	.997
Inactive disease (n=101)	18 (8-27)		-	-
Active disease (n=36)	37 (21-51)	<.001^a	15.48 (9.92 to 21.05)	<.001

Dummy variables for the multivariate analysis included male sex, ulcerative proctitis, retired subjects, Education to 16 years, no current antidepressant use, no cigarette smoking, no resectional surgery, no exposure to steroid medications, immune modulators or biologic agents, and disease remission. Univariate data are presented as medians and interquartile ranges (IQR) and multivariate data as B and 95% confidence intervals (CI).

^aMann-Whitney U test.

^bEntered into multivariate model as a continuous variable.

^cData not available for all cases.

^dKruskal-Wallis test.

Supplementary Table 3. Factor loadings of principle component analyses.

One-factor model ^a	
Question	Factor loading
1 General Health	0.636
2 Sleep	0.670
3 Energy	0.736
4 Depression	0.745
5 Anxiety	0.661
6 Body Image	0.571
7 Abdominal pain	0.669
8 Bowel function	0.588
9 Health and diet	0.710
10 Personal relationships	0.652
11 Community participation	0.716
12 Work/study activities	0.785
13 Liquid stools	0.400
14 Arthralgia/arthritis	0.244

Supplementary Table 4. Final Cox backward regression models identifying baseline factors significantly and independently related to short-term and long-term disease activity.

Short-term disease activity with treatment escalation				
	Coefficient β	Standard error	Relative Risk (95% confidence intervals)	P value
Disease remission baseline	-	-	1	-
Active disease baseline	1.883	0.220	6.575 (4.274-10.116)	<.0001
Disease duration ^a	-0.053	0.017	0.948 (0.917-0.981)	.002
IBD-DI at baseline ^a	0.017	0.006	1.017 (1.005-1.029)	.004

Long-term disease activity with treatment escalation				
	Coefficient β	Standard error	Relative Risk (95% confidence intervals)	P value
IBD-DI at baseline ^a	0.016	0.004	1.016 (1.008-1.024)	<.001
Participant age ^a	-0.015	0.006	0.985 (0.974-0.996)	.007

^aEntered into multivariate model as a continuous variable.