

## Supplementary Materials

**Table e1. Correlations between symptoms and physical function with emotional (EWB), social (SWB), psychological (PWB) and total well-being\***

Characteristic	EWB r (95%CI)	SWB r (95%CI)	PWB r (95%CI)	Total r (95%CI)
<b>HADS-A</b>	-0.599 (-0.649, -0.543)	-0.492 (-0.552, -0.427)	-0.554 (-0.608, -0.494)	-0.575 (-0.628, -0.517)
<b>HADS-D</b>	-0.738 (-0.774, -0.698)	-0.653 (-0.698, -0.602)	-0.708 (-0.747, -0.664)	-0.743 (-0.778, -0.704)
<b>MPES<sup>c</sup></b>	-0.565 (-0.619, -0.506)	-0.469 (-0.531, -0.402)	-0.504 (-0.563, -0.440)	-0.536 (-0.593, -0.475)
<b>DFIS</b>	-0.143 (-0.223, -0.061)	-0.123 (-0.204, -0.041)	-0.141 (-0.221, -0.059)	-0.140 (-0.220, -0.058)
<b>9HPT z-score</b>	0.126 (0.042, 0.208)	0.160 (0.076, 0.241)	0.145 (0.062, 0.227)	0.160 (0.077, 0.241)
<b>T25FW z score</b>	0.219 (0.137, 0.297)	0.225 (0.143, 0.303)	0.217 (0.135, 0.296)	0.234 (0.153, 0.313)

HADS-D = Hospital Anxiety and Depression Scale – Depression, HADS-A = HADS-Anxiety, DFIS = Daily Fatigue Impact Scale, MPES = Modified Pain Effects Scale, 9=HPT = Nine-hole peg test, T25FW = Timed 25-foot walk

\*All p <0.0001

**Table e2: Quantile regression (80<sup>th</sup> percentile) for multiple independent variables with total, social (SWB), psychological (PWB) and emotional (EWB) well-being**

Variable	SWB	PWB	EWB	Total
IBD (Ref: MS)	0.0089 (-0.94, 0.96)	0.25 (-0.72, 1.22)	-0.29 (-0.81, 0.22)	0.23 (-2.18, 2.63)
RA (Ref: MS)	0.24 (-1.35, 1.83)	-0.44 (-1.49, 0.61)	-0.20 (-0.85, 0.45)	-0.63 (-3.07, 1.80)
Age	0.0057 (-0.025, 0.036)	0.016 (-0.015, 0.047)	-0.0039 (-0.020, 0.0012)	0.030 (-0.037, 0.098)
Gender (Ref: Men)	0.81 (-0.26, 1.88)	0.76 (-0.14, 0.045)	<b>0.55 (-0.0059, 1.10)</b>	1.78 (-0.97, 4.52)
Race (Ref: White)	0.31 (-0.95, 1.58)	-0.68 (-1.56, 0.20)	0.10 (-0.42, 0.62)	-1.16 (-3.44, 1.11)
Education (Ref:	0.44 (-0.55, 1.30)	0.13 (-0.78, 1.04)	-0.044 (-0.52, 0.43)	0.20 (-1.71, 2.10)
Partner (Ref: single)	0.43 (-0.44, 1.29)	0.34 (-0.44, 1.11)	0.35 (-0.94, 0.80)	0.82 (-1.83, 3.47)
HADS-A	<b>-0.23 (-0.41, -0.047)**</b>	<b>-0.26 (-0.46, -0.060)**</b>	<b>-0.10 (-0.18, -0.023)**</b>	<b>-0.69 (-1.14, -0.23)**</b>
HADS-D	<b>-0.77 (-0.98, -0.55)***</b>	<b>-0.75 (-1.05, -0.46)***</b>	<b>-0.39 (-0.51, -0.28)***</b>	<b>-2.03 (-2.46, -1.60)***</b>
MPES	-0.046 (-0.19, 0.099)	-0.041 (-0.18, 0.094)	<b>-0.065 (-0.13, -0.0022)*</b>	-0.12 (-0.42, 0.18)
DFIS	-0.013 (-0.11, 0.083)	-0.036 (-0.12, 0.050)	-0.022 (-0.068, 0.024)	-0.063 (-0.26, 0.13)
T25FW Z-score	-0.12 (-0.30, 0.069)	0.048 (-0.19, 0.29)	0.0091 (-0.11, 0.13)	-0.033 (-0.55, 0.48)
9HPT Z-score	0.32 (-0.16, 0.18)	-0.18 (-0.61, 0.26)	-0.063 (-0.31, 0.18)	0.17 (0.96, 1.29)
Pseudo-R <sup>2</sup>	0.26	0.28	0.33	0.35

\* P-value < 0.05, \*\* P-value < 0.01, \*\*\* P-value < 0.001

HADS-D = Hospital Anxiety and Depression Scale – Depression, HADS-A = HADS-Anxiety, DFIS = Daily Fatigue Impact Scale, MPES = Modified Pain Effects Scale, 9=HPT = Nine-hole peg test, T25FW = Timed 25-foot walk, IBD = inflammatory bowel disease, RA = rheumatoid arthritis, Ref = reference group

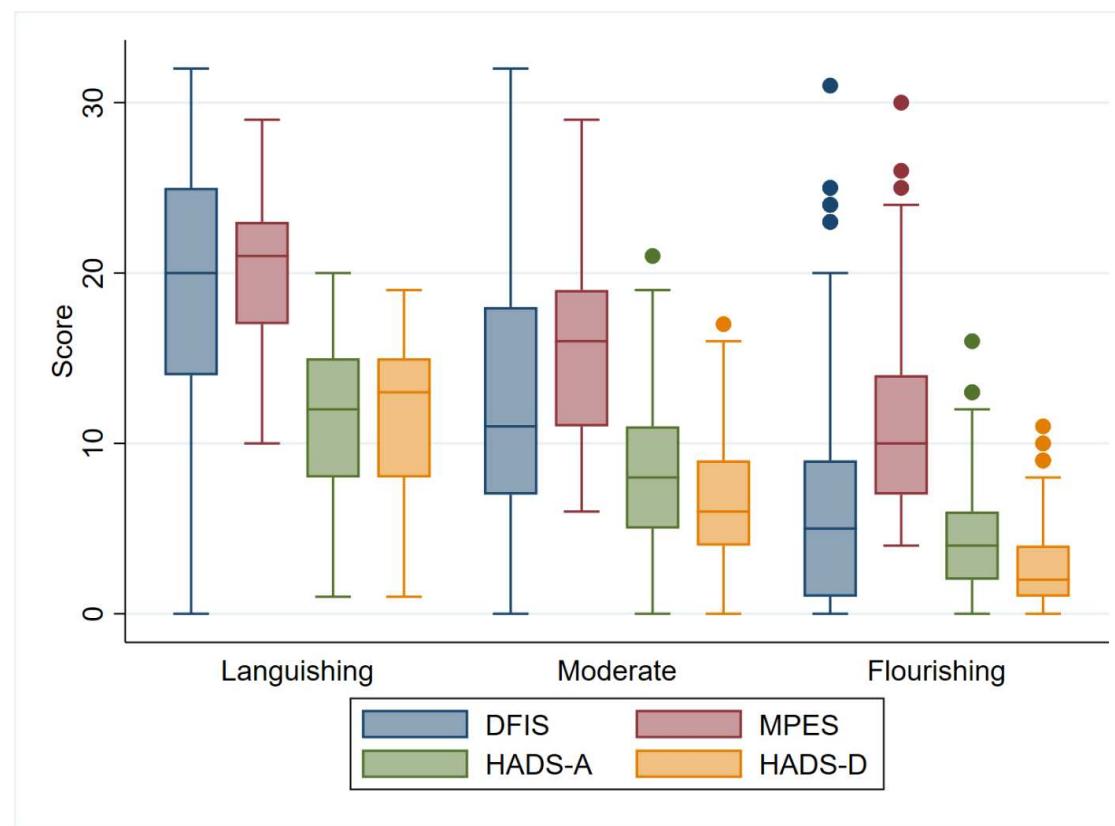
**Table e3: Quantile regression (20<sup>th</sup> percentile) for multiple independent variables with total, social (SWB), psychological (PWB) and emotional (EWB) well-being**

Variable	SWB	PWB	EWB	Total
IBD (Ref: MS)	<b>-0.31 (-2.62, 2.00)</b>	-0.67 (-2.44, 1.10)	-0.29 (-1.08, 0.51)	-2.72 (-6.26, 0.82)
RA (Ref: MS)	<b>-0.51 (-2.51, 1.50)</b>	0.79 (-0.75, 2.33)	-0.28 (-0.98, 0.41)	-1.68 (-5.73, 2.38)
Age	0.052 (-0.030, 0.13)	0.030 (-0.029, 0.090)	<b>0.029 (0.0047, 0.053)*</b>	0.042 (-0.095, 0.18)
Gender (Ref: Men)	-0.0021 (-2.04, 2.04)	-0.58 (-2.24, 1.08)	0.0016 (-0.70, 0.70)	0.39 (-3.33, 4.12)
Race (Ref: Other)	2.09 (-0.23, 4.40)	-1.19 (-2.70, 0.32)	-0.25 (-0.99, 0.50)	0.44 (-3.58, 4.47)
Education (Ref:	1.27 (-0.60, 3.14)	-0.23 (-1.63, 1.18)	-0.0068 (-0.65, 0.63)	1.68 (-1.79, 5.14)
Partner (Ref: single)	-0.90 (-2.69, 0.89)	-1.35 (-2.75, 0.031)	-0.014 (-0.55, 0.52)	-1.46 (-4.50, 1.58)
HADS-A	<b>-0.24 (-0.51, -0.028)**</b>	<b>-0.20 (-0.43, -0.024)</b>	-0.087 (-0.18, 0.0091)	<b>-2.64 (-3.33, -1.95)**</b>
HADS-D	<b>-1.03 (-1.30, -0.75)***</b>	<b>-1.27 (-1.55, -0.99)***</b>	<b>-0.58 (-0.70, -0.46)***</b>	<b>-2.76 (-3.33, -2.20)***</b>
MPES	-0.0021 (-0.24, 0.24)	<b>-0.14 (-0.30, -0.031)*</b>	<b>-0.075 (-0.15, -0.030)*</b>	-0.27 (-0.64, 0.10)
DFIS	0.074 (-0.056, 0.21)	0.016 (-0.12, 0.16)	-0.044 (-0.17, 0.079)	0.073 (-0.21, 0.36)
T25FW Z-score	-0.12 (-0.46, 0.22)	0.0087 (-0.46, 0.48)	-0.046 (-0.17, 0.079)	0.11 (-0.81, 1.03)
9HPT Z-score	<b>1.24 (0.16, 2.33)*</b>	0.93 (-0.034, 1.90)	0.21 (-0.13, 0.55)	1.84 (-0.35, 4.04)
Pseudo-R <sup>2</sup>	0.25	0.38	0.48	0.41

\* P-value < 0.05, \*\* P-value < 0.01, \*\*\* P-value < 0.001

HADS-D = Hospital Anxiety and Depression Scale – Depression, HADS-A = HADS-Anxiety, DFIS = Daily Fatigue Impact Scale, MPES = Modified Pain Effects Scale, 9=HPT = Nine-hole peg test, T25FW = Timed 25-foot walk, IBD = inflammatory bowel disease, RA = rheumatoid arthritis, Ref = reference group

Figure e1. Boxplots showing association between fatigue, pain, anxiety and depression symptoms and mental well-being



HADS-D = Hospital Anxiety and Depression Scale – Depression, HADS-A = HADS-Anxiety, DFIS = Daily Fatigue Impact Scale, MPES = Modified Pain Effects Scale