

## Additional file 2

**Table 1. Statistical characteristics for identified subgroup models based on the summary score strategy**

Subgroup models were identified for four different health domains (psychology, pain, activity and participation)

Health domain	Sub-groups	Parameters	Log-likelihood	BIC <sub>LL</sub>	% change of BIC <sub>LL</sub>	Frequency of presented BIC	Size of smallest subgroup, N (%)
Psychology	1	17	-12900.8	25917.9		10/10	928 (100)
	2	30	-12124.3	24453.5	5.65	8/10	334 (36.0)
	3	43	<i>-11803.1</i>	<i>23900.0</i>	2.26	<i>10/10</i>	<i>237 (25.5)</i>
	4	56	-11693.7	23770.0	0.54	10/10	103 (11.1)
	5	69	-11596.3	23664.0	0.45	9/10	84 (9.05)
	<b>6</b>	<b>82</b>	<b>-11542.2</b>	<b>23644.7</b>	<b>0.08</b>	<b>4/10</b>	<b>34 (3.66)</b>
	7	95	-11378.6	23406.4	1.01	1/10	60 (6.5)
	8	108	-11320.0	23377.9	0.12	1/10	4 (0.39)
	9	121	-11261.6	23350.0	0.12	1/10	9 (0.95)
	<u>10</u>	<u>134</u>	<u>-11094.5</u>	<u>23104.7</u>	<u>1.05</u>	<u>1/10</u>	<u>38 (4.07)</u>
	11	147	-11113.1	23230.7	-0.55	1/10	9 (1.00)
	12	160	-11020.0	23133.3	0.42	1/10	7 (0.71)
Pain	1	21	-8470.8	17085.2		10/10	928 (100)
	2	34	<i>-8206.8</i>	<i>16645.8</i>	2.57	<i>10/10</i>	<i>320 (34.5)</i>
	3	47	-8083.1	16487.4	0.95	10/10	133 (14.4)
	4	60	-8004.0	16418.0	0.42	10/10	125 (13.5)
	<u>5</u>	<u>73</u>	<u>-7936.6</u>	<u>16372.1</u>	<u>0.28</u>	<u>10/10</u>	<u>75 (8.1)</u>
	<b>6</b>	<b>86</b>	<b>-7899.8</b>	<b>16387.2</b>	<b>-0.09</b>	<b>9/10</b>	<b>50 (5.3)</b>
	7	99	-7877.7	16431.8	-0.27	4/10	40 (4.3)
	8	112	-7862.1	16489.4	-0.35	3/10	41 (4.5)
Activity	1	6	-5810.6	11662.3		10/10	928 (100)
	<u>2</u>	<u>12</u>	<u>-5671.2</u>	<u>11424.4</u>	<u>2.04</u>	<u>10/10</u>	<u>364 (39.3)</u>
	3	18	-5652.1	11427.1	-0.02	10/10	166 (17.8)
	4	24	-5645.8	11455.5	-0.25	5/10	103 (11.1)
	5	30	-5638.1	11481.3	-0.22	4/10	49 (5.3)
	6	36	-5634.3	11514.7	-0.29	6/10	47 (5.0)
	<b>7</b>	<b>42</b>	<b>-5632.7</b>	<b>11552.3</b>	<b>-0.33</b>	<b>4/10</b>	<b>83 (8.9)</b>
	8	48	-5628.8	11585.5	-0.29	3/10	56 (6.0)
	9	54	-5625.3	11619.5	-0.29	3/10	48 (5.2)
Participation	1	7	-4591.6	9231.0		10/10	928 (100)
	2	12	<i>-4389.3</i>	<i>8860.6</i>	4.01	<i>10/10</i>	<i>335 (36.1)</i>
	<u>3</u>	<u>17</u>	<u>-4356.3</u>	<u>8828.8</u>	<u>0.36</u>	<u>10/10</u>	<u>251 (27.1)</u>
	4	22	-4349.9	8850.2	-0.24	4/10	135 (14.6)
	<b>5</b>	<b>27</b>	<b>-4341.5</b>	<b>8867.4</b>	<b>-0.19</b>	<b>7/10</b>	<b>96 (10.4)</b>
	6	32	-4319.1	8856.8	0.12	7/10	52 (5.7)
	7	37	-4304.0	8860.8	-0.04	3/10	62 (6.7)

BIC = Bayesian Information Criterion. %-change of BIC: A positive change represents a reduction of BIC

*Italics*: Selected starting model improving BIC by at least 1%

**Bold**: Preferred subgroup model

Underline: Best model if based only on lowest BIC

Additional results are available on request from the first author.

**Table 2. Statistical characteristics for identified subgroup models based on the single item strategy**

Subgroup models were identified for four different health domains (psychology, pain, activity and participation)

Health domain	Sub-groups	Parameters	Log-likelihood	BIC <sub>LL</sub>	% change of BIC <sub>LL</sub>	Frequency of presented BIC	Size of smallest subgroup, N (%)
Psychology	1	68	-25490.4	51445.5		10/10	928 (100)
	2	97	-24031.8	48726.4	5.29	10/10	369 (39.8)
	3	<i>126</i>	<i>-23465.9</i>	<i>47792.7</i>	<i>1.92</i>	<i>10/10</i>	<i>228 (24.5)</i>
	4	155	-23154.5	47368.1	0.89	10/10	166 (17.9)
	5	184	-22916.2	47089.6	0.59	6/10	98 (10.51)
	6	213	-22775.7	47006.9	0.18	4/10	100 (10.77)
	7	242	-22658.2	46970.0	0.08	4/10	85 (9.12)
	<b>8</b>	<b>271</b>	<b>-22526.3</b>	<b>46904.3</b>	<b>0.14</b>	<b>8/10</b>	<b>47 (5.1)</b>
	9	300	-22434.3	46918.4	-0.03	7/10	43 (4.6)
	10	329	-22367.8	46983.7	-0.14	1/10	12 (1.3)
Pain	1	31	-12610.8	25433.4		10/10	928 (100)
	2	49	-12058.0	24450.8	3.86	10/10	440 (47.4)
	3	67	-11877.7	24213.3	0.97	10/10	229 (24.7)
	4	85	-11767.5	24115.8	0.40	10/10	127 (13.7)
	5	103	-11662.6	24028.9	0.36	9/10	105 (11.3)
	<u>6</u>	<u>121</u>	<u>-11568.4</u>	<u>23963.7</u>	<u>0.27</u>	<u>9/10</u>	<u>84 (9.0)</u>
	<b>7</b>	<b>139</b>	<b>-11522.2</b>	<b>23994.1</b>	<b>-0.13</b>	<b>5/10</b>	<b>41 (4.4)</b>
	8	157	-11486.6	24045.9	-0.22	3/10	42 (4.5)
	9	175	-11441.3	24078.4	-0.13	6/10	38 (4.1)
Activity	1	28	-13280.5	26752.3		10/10	928 (100)
	2	51	-11463.4	23275.2	13.00	10/10	424 (45.7)
	3	74	-11152.4	22810.4	2.00	10/10	207 (22.3)
	4	97	-10982.5	22627.8	0.80	10/10	126 (13.6)
	<u>5</u>	<u>120</u>	<u>-10848.2</u>	<u>22516.3</u>	<u>0.49</u>	<u>10/10</u>	<u>145 (15.6)</u>
	6	143	-10780	22537.1	-0.09	10/10	59 (6.4)
	<b>7</b>	<b>166</b>	<b>-10721.6</b>	<b>22577.5</b>	<b>-0.18</b>	<b>9/10</b>	<b>50 (5.4)</b>
	8	189	-10672.8	22637.0	-0.26	2/10	38 (4.1)
	9	212	-10624.6	22697.8	-0.27	2/10	38 (4.1)
Participation	1	15	-5870.3	11843.1		10/10	928 (100)
	2	24	-5429.4	11022.9	6.93	10/10	376 (40.5)
	3	33	-5343.4	10912.2	1.00	10/10	173 (18.6)
	<u>4</u>	<u>42</u>	<u>-5284.7</u>	<u>10856.3</u>	<u>0.51</u>	<u>10/10</u>	<u>148 (16.0)</u>
	5	51	-5261.3	10871.1	-0.14	6/10	94 (10.2)
	6	60	-5232.4	10874.8	-0.03	6/10	77 (8.3)
	<b>7</b>	<b>69</b>	<b>-5213.7</b>	<b>10898.8</b>	<b>-0.22</b>	<b>5/10</b>	<b>63 (6.8)</b>
	8	78	-5192.3	10917.5	-0.17	4/10	47 (5.0)
	9	87	-5178.2	10950.9	-0.31	7/10	47 (5.1)

BIC = Bayesian Information Criterion. %-change of BIC: A positive change represents a reduction of BIC

*Italics*: Selected starting model improving BIC by at least 1%

**Bold**: Preferred subgroup model

Underline: Best model if based only on lowest BIC

Shown are results of model sizes up to preferred model plus two. Additional results are available on request from the first author.