Latent structure and factor reliability of the National Health Service Community Mental Health Service User Questionnaire

Supplemental online material

Supplementary Table I - Description and response proportions the NHS-CMH analysed items on those using mental health services in past 12 months (N = 11,373)

Item	Question and score	Proportion of responses
Q3	In the last 12 months, do you feel you have seen NHS mental health services often enough for your needs?	
	0	2439 (21.4%)
	5	3354 (29.5%)
	10	5071 (44.6%)
	Missing	509 (4.5%)
Q4	Did the person or people you saw listen carefully to you?	
	0	723 (6.4%)
	5	2551 (22.4%)
	10	7771 (68.3%)
	Missing	328 (2.9%)
Q5	Were you given enough time to discuss your needs and treatment?	
	0	1209 (10.6%)
	5	2759 (24.3%)
	10	6903 (60.7%)
	Missing	502 (4.4%)
Q6	Did the person or people you saw understand how your mental health needs affect other areas of your life?	
	0	1338 (11.8%)
	5	3211 (28.2%)
	10	5997 (52.7%)
	Missing	827 (7.3%)
Q7+Q8+Q9+Q10	Have you been told who is in charge of organising your care and services (Q7)? If yes and is not a GP (Q8 not scored), do you know how to contact this person if you have a concern about your care (Q9) and/or how well does this person organise the care and services you need (Q10)?	
	0	2282 (20.1%)
	10	1415 (12.4%)
	20	860 (7.6%)
	30	5050 (44.4%)
	Missing	1766 (15.5%)
Q11+Q12+Q13	Have you agreed with someone from NHS mental health services what care you will receive (Q11)? If yes, were you involved as much as you wanted to be (Q12) and/or does this agreement take your personal circumstances into account (Q13)?	
	0	2535 (22.3%)
	5	541 (4.8%)
	10	758 (6.7%)
	15	1526 (13.4%)
	20	1211 (10.6%)
	25	1255 (11.0%)
	30	3275 (28.8%)
	Missing	272 (2.4%)
Q14+Q15+Q16	In the last 12 months have you had a formal meeting with someone from NHS mental health services to discuss how your care is working (Q14)? If yes, Were you involved as much as you wanted to be (Q15) and/or Did you feel that decisions were made together by you and the person you saw during this discussion (Q16)?	
	0	2226 (19.6%)
	10	475 (4.2%)
	15	513 (4.5%)
	20	1342 (11.8%)
	25	902 (7.9%)
	30	3061 (26.9%)
	Missing	2854 (25.1%)

Q17+Q18+Q19+Q20	If the people you see changed in the last 12 months (Q17 not scored), Were the reasons for this change explained (Q18) and/or what impact has this had on the care you receive (Q19) and/or did you know who was in charge of organising your care while this change was taking place (Q20)?	
	0	522 (4.6%)
	5	490 (4.3%)
	10	683 (6.0%)
	15	476 (4.2%)
	20	778 (6.8%)
	25	252 (2.2%)
	30	1002 (8.8%)
	Missing	7170 (63.0%)
Q21+Q22+Q23	Do you know who to contact out of office hours if you have a crisis (Q21)? If yes and if you tried to contact this person or team in the last 12 months (Q22 not scored), did you get the help you needed (Q23)?	
	0	2790 (24.5%)
	10	5157 (45.3%)
	15	870 (7.6%)
	20	1072 (9.4%)
	Missing	1484 (13.0%)
Q24+Q25	If you recieved any medicines for your mental health needs in last 12 months (Q24 not scored), were you involved as much as you wanted to be in decisions about which medicines you receive (Q25)?	
	0	950 (8.4%)
	5	3086 (27.1%)
	10	4522 (39.8%)
	Missing	2815 (24.8%)
Q24+Q26+Q27	If you recieved any medicines for your mental health needs in last 12 months (Q24 not scored) and these medicines were new (Q26 not scored), were you given information about it in a way that you were able to understand (Q27)?	
	0	661 (5.8%)
	5	1426 (12.5%)
	10	2488 (21.9%)
	Missing	6798 (59.8%)
Q24+Q28+Q29	If you recieved any medicines for your mental health needs in last 12 months (Q24 not scored) or longer (Q28 not scored), has an NHS mental health worker reviewed your medicines (Q29)?	
	0	1684 (14.8%)
	10	5794 (50.9%)
	Missing	3895 (34.2%)
Q30+Q31+Q32	If you have been recieveing any treatments or therapies for your mental health needs in the last 12 months that do not involve medicines (Q30 not scored), were these treatments or therapies explained to you in a way you could understand (Q31) and/or were you involved as much as you wanted to be in deciding what treatments or therapies to use (Q32)?	
	0	126 (1.1%)
	5	384 (3.4%)
	10	837 (7.4%)
	15	761 (6.7%)
	20	1901 (16.7%)
	Missing	7364 (64.7%)
Q33	In the last 12 months, did NHS mental health services give you any help or advice with finding support for physical health needs?	
	0	1928 (17.0%)
	5	1677 (14.7%)
	10	2052 (18.0%)
	Missing	5716 (50.3%)

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Q34 In the last 12 months, did NHS mental health services give you any help or advice with finding support for financial advice or benefits?

0	2586 (22.7%)
5	1421 (12.5%)
10	1923 (16.9%)
Missing	5443 (47.9%)

Q35 In the last 12 months, did NHS mental health services give you any help or advice with finding support for finding or keeping work?

0	1141 (10.0%)
5	835 (7.3%)
10	768 (6.8%)
Missing	8629 (75.9%)

Q36 Has someone from NHS mental health services supported you in taking part in an activity locally?

0	2214 (19.5%)
5	1559 (13.7%)
10	1584 (13.9%)
Missing	6016 (52.9%)

Q37 Have NHS mental health services involved a member of your family or someone else close to you as much as you would like?

0	1443 (12.7%)
5	1851 (16.3%)
10	4230 (37.2%)
Missing	3849 (33.8%)

Q38 Have you been given information by NHS mental health services about getting support from people who have experience of the same mental health needs as you?

0	3178 (27.9%)
5	1868 (16.4%)
10	1606 (14.1%)
Missing	4721 (41.5%)

Q39 Do the people you see through NHS mental health services help you with what is important to you?

0	1792 (15.8%)
5	3953 (34.8%)
10	4958 (43.6%)
Missing	670 (5.9%)

Q40 Overall, I had a very poor experience (0 to 3 = 0), moderete (4 to 7 = 5) or a very good experience (8 to 10 = 10)

0	1231 (10.8%)
5	3547 (31.2%)
10	5789 (50.9%)
Missing	806 (7.1%)

Q41 Overall in the last 12 months, did you feel that you were treated with respect and dignity by NHS mental health services?

0	711 (6.3%)
5	2071 (18.2%)
10	8187 (72.0%)
Missing	404 (3.6%)

Note: Summed parcelled items description can be found the supplementary crosstabulation of the raw scored items with the parcelled items (online supplementary material). NHS-CMH, National Health Service Community Mental Health Service User Questionnaire

Table S2 - Q7, Q9 and Q10 scored items by scores of the "Organizing your Care" parcelled item (Q7+Q9+Q10)

	Scores of the parcelled item				Total sample
	0	**10**	**20**	**30**	
	(n=2282)	**(n=1415)**	**(n=860)**	**(n=5050)**	**(N=11373)**
Q7 (scored skip question)					
0	2282 (100%)	0 (0%)	0 (0%)	0 (0%)	2282 (20.1%)
10	0 (0%)	1381 (97.6%)	684 (79.5%)	5050 (100%)	7115 (62.6%)
Missing	0 (0%)	34 (2.4%)	176 (20.5%)	0 (0%)	1976 (17.4%)
Q9					
0	0 (0%)	168 (11.9%)	0 (0%)	0 (0%)	168 (1.5%)
10	0 (0%)	10 (0.7%)	640 (74.4%)	5050 (100%)	5700 (50.1%)
Missing	2282 (100%)	1237 (87.4%)	220 (25.6%)	0 (0%)	5505 (48.4%)
Q10					
0	0 (0%)	72 (5.1%)	104 (12.1%)	0 (0%)	176 (1.5%)
3.3	0 (0%)	90 (6.4%)	275 (32.0%)	0 (0%)	365 (3.2%)
6.7	0 (0%)	47 (3.3%)	162 (18.8%)	1547 (30.6%)	1756 (15.4%)
10	0 (0%)	29 (2.0%)	194 (22.6%)	3503 (69.4%)	3726 (32.8%)
Missing	2282 (100%)	1177 (83.2%)	125 (14.5%)	0 (0%)	5350 (47.0%)

Note: In Q10, score of 3.3 was considered 0 and score 6.7 was considered 10 for parcelling purpose.

Table S3 - Q11, Q12 and Q13 scored items by scores of the "Planning your Care" parcelled item (Q11+Q12+Q13)

	Scores of the parcelled item							**Total sample**
	0	**5**	**10**	**15**	**20**	**25**	**30**	
	(n=2535)	**(n=541)**	**(n=758)**	**(n=1526)**	**(n=1211)**	**(n=1255)**	**(n=3275)**	**(N=11373)**
Q11 (scored skip question)								
0	2535 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2535 (22.3%)
5	0 (0%)	517 (95.6%)	645 (85.1%)	1360 (89.1%)	639 (52.8%)	518 (41.3%)	0 (0%)	3679 (32.3%)
10	0 (0%)	0 (0%)	83 (10.9%)	106 (6.9%)	548 (45.3%)	675 (53.8%)	3275 (100%)	4687 (41.2%)
Missing	0 (0%)	24 (4.4%)	30 (4.0%)	60 (3.9%)	24 (2.0%)	62 (4.9%)	0 (0%)	472 (4.2%)
Q12								
0	0 (0%)	288 (53.2%)	260 (34.3%)	38 (2.5%)	18 (1.5%)	0 (0%)	0 (0%)	604 (5.3%)
5	0 (0%)	0 (0%)	332 (43.8%)	1372 (89.9%)	800 (66.1%)	378 (30.1%)	0 (0%)	2882 (25.3%)
10	0 (0%)	0 (0%)	0 (0%)	66 (4.3%)	360 (29.7%)	877 (69.9%)	3275 (100%)	4578 (40.3%)
Missing	2535 (100%)	253 (46.8%)	166 (21.9%)	50 (3.3%)	33 (2.7%)	0 (0%)	0 (0%)	3309 (29.1%)
Q13								
0	0 (0%)	302 (55.8%)	201 (26.5%)	39 (2.6%)	15 (1.2%)	0 (0%)	0 (0%)	557 (4.9%)
5	0 (0%)	0 (0%)	343 (45.3%)	1344 (88.1%)	599 (49.5%)	297 (23.7%)	0 (0%)	2583 (22.7%)
10	0 (0%)	0 (0%)	0 (0%)	49 (3.2%)	483 (39.9%)	958 (76.3%)	3275 (100%)	4765 (41.9%)
Missing	2535 (100%)	239 (44.2%)	214 (28.2%)	94 (6.2%)	114 (9.4%)	0 (0%)	0 (0%)	3468 (30.5%)

Table S4 - Q14, Q15 and Q16 scored items by scores of the "Reviewing your Care" parcelled item (Q14+Q15+Q16)

	Scores of the parcelled item						Total sample
	0 (n=2226)	**10** (n=475)	**15** (n=513)	**20** (n=1342)	**25** (n=902)	**30** (n=3061)	(N=11373)
Q14 (scored skip question)							
0	2226 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2226 (19.6%)
10	0 (0%)	463 (97.5%)	499 (97.3%)	1313 (97.8%)	897 (99.4%)	3048 (99.6%)	6220 (54.7%)
Missing	0 (0%)	12 (2.5%)	14 (2.7%)	29 (2.2%)	5 (0.6%)	13 (0.4%)	2927 (25.7%)
Q15							
0	0 (0%)	311 (65.5%)	129 (25.1%)	18 (1.3%)	0 (0%)	0 (0%)	458 (4.0%)
5	0 (0%)	0 (0%)	299 (58.3%)	1111 (82.8%)	447 (49.6%)	0 (0%)	1857 (16.3%)
10	0 (0%)	0 (0%)	0 (0%)	127 (9.5%)	455 (50.4%)	3061 (100%)	3643 (32.0%)
Missing	2226 (100%)	164 (34.5%)	85 (16.6%)	86 (6.4%)	0 (0%)	0 (0%)	5415 (47.6%)
Q16							
0	0 (0%)	325 (68.4%)	210 (40.9%)	33 (2.5%)	0 (0%)	0 (0%)	568 (5.0%)
5	0 (0%)	0 (0%)	214 (41.7%)	1111 (82.8%)	455 (50.4%)	0 (0%)	1780 (15.7%)
10	0 (0%)	0 (0%)	0 (0%)	104 (7.7%)	447 (49.6%)	3061 (100%)	3612 (31.8%)
Missing	2226 (100%)	150 (31.6%)	89 (17.3%)	94 (7.0%)	0 (0%)	0 (0%)	5413 (47.6%)

Table S5 - Q18, Q19 and Q20 scored items by scores of the "Changes in Who You See" parcelled item (Q17+Q18+Q19+Q20)

	Scores of the parcelled item							Total sample
	0 (n=522)	**5** (n=490)	**10** (n=683)	**15** (n=476)	**20** (n=778)	**25** (n=252)	**30** (n=1002)	(N=11373)
Q17 (unscored skip question)								
Skip	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	5887 (51.8%)
Yes	503 (96.4%)	482 (98.4%)	643 (94.1%)	469 (98.5%)	751 (96.5%)	248 (98.4%)	987 (98.5%)	4115 (36.2%)
Missing	19 (3.6%)	8 (1.6%)	40 (5.9%)	7 (1.5%)	27 (3.5%)	4 (1.6%)	15 (1.5%)	1371 (12.1%)
Q18								
0	473 (90.6%)	0 (0%)	325 (47.6%)	0 (0%)	74 (9.5%)	0 (0%)	0 (0%)	872 (7.7%)
5	0 (0%)	490 (100%)	0 (0%)	476 (100%)	0 (0%)	252 (100%)	0 (0%)	1218 (10.7%)
10	0 (0%)	0 (0%)	233 (34.1%)	0 (0%)	618 (79.4%)	0 (0%)	1002 (100%)	1853 (16.3%)
Missing	49 (9.4%)	0 (0%)	125 (18.3%)	0 (0%)	86 (11.1%)	0 (0%)	0 (0%)	7430 (65.3%)
Q19								
0	380 (72.8%)	352 (71.8%)	180 (26.4%)	82 (17.2%)	122 (15.7%)	0 (0%)	0 (0%)	1116 (9.8%)
10	0 (0%)	0 (0%)	363 (53.1%)	355 (74.6%)	535 (68.8%)	252 (100%)	1002 (100%)	2507 (22.0%)
Missing	142 (27.2%)	138 (28.2%)	140 (20.5%)	39 (8.2%)	121 (15.6%)	0 (0%)	0 (0%)	7750 (68.1%)
Q20								
0	433 (83.0%)	356 (72.7%)	410 (60.0%)	205 (43.1%)	204 (26.2%)	0 (0%)	0 (0%)	1608 (14.1%)
10	0 (0%)	0 (0%)	87 (12.7%)	121 (25.4%)	403 (51.8%)	252 (100%)	1002 (100%)	1865 (16.4%)
Missing	89 (17.0%)	134 (27.3%)	186 (27.2%)	150 (31.5%)	171 (22.0%)	0 (0%)	0 (0%)	7900 (69.5%)

Note: "Skip" are all unscored alternatives which indicate to skip Q18, Q19 and Q20 questions.

Table S6 - Q21, Q22 and Q23 items by scores of the "Crisis Care" parcelled item (Q21+Q22+Q23)

	Scores of the parcelled item				Total sample
	0	**10**	**15**	**20**	
	(n=2790)	**(n=5157)**	**(n=870)**	**(n=1072)**	**(N=11373)**
Q21 (scored skip question)					
0	2790 (100%)	0 (0%)	0 (0%)	0 (0%)	2790 (24.5%)
10	0 (0%)	5150 (99.9%)	851 (97.8%)	1072 (100%)	7073 (62.2%)
Missing	0 (0%)	7 (0.1%)	19 (2.2%)	0 (0%)	1510 (13.3%)
Q22 (not scored)					
Skip	0 (0%)	4125 (80.0%)	0 (0%)	0 (0%)	4197 (36.9%)
Yes	0 (0%)	816 (15.8%)	859 (98.7%)	1055 (98.4%)	2733 (24.0%)
Missing	2790 (100%)	216 (4.2%)	11 (1.3%)	17 (1.6%)	4443 (39.1%)
Q23					
0	0 (0%)	750 (14.5%)	0 (0%)	0 (0%)	750 (6.6%)
5	0 (0%)	0 (0%)	858 (98.6%)	0 (0%)	858 (7.5%)
10	0 (0%)	0 (0%)	12 (1.4%)	1072 (100%)	1084 (9.5%)
Missing	2790 (100%)	4407 (85.5%)	0 (0%)	0 (0%)	8681 (76.3%)

Note: "Skip" are all unscored alternatives which indicate to skip Q23

Table S7 - Q24 and Q25 items by scores of the "Treatments" parcelled item (Q24+Q25)

	Scores of the parcelled item			Total sample
	0	**5**	**10**	
	(n=950)	**(n=3086)**	**(n=4522)**	**(N=11373)**
Q24 (unscored skip question)				
Skip	0 (0%)	0 (0%)	0 (0%)	1717 (15.1%)
Yes	942 (99.2%)	3069 (99.4%)	4493 (99.4%)	9316 (81.9%)
Missing	8 (0.8%)	17 (0.6%)	29 (0.6%)	340 (3.0%)
Q25				
0	950 (100%)	0 (0%)	0 (0%)	950 (8.4%)
5	0 (0%)	3086 (100%)	0 (0%)	3086 (27.1%)
10	0 (0%)	0 (0%)	4522 (100%)	4522 (39.8%)
Missing	0 (0%)	0 (0%)	0 (0%)	2815 (24.8%)

Note: "Skip" are all unscored alternatives which indicate to skip Q25

Table S8 - Q24, Q26 and Q27 items by scores of the "Treatments" parcelled item (Q24+Q26+Q27)

	Scores of the parcelled item			Total sample
	0	**5**	**10**	
	(n=661)	**(n=1426)**	**(n=2488)**	**(N=11373)**
Q24 (unscored skip question)				
Skip	0 (0%)	0 (0%)	0 (0%)	1717 (15.1%)
Yes	655 (99.1%)	1419 (99.5%)	2473 (99.4%)	9316 (81.9%)
Missing	6 (0.9%)	7 (0.5%)	15 (0.6%)	340 (3.0%)
Q26 (unscored skip question)				
Skip	0 (0%)	0 (0%)	0 (0%)	4721 (41.5%)
Yes	634 (95.9%)	1379 (96.7%)	2408 (96.8%)	4468 (39.3%)
Missing	27 (4.1%)	47 (3.3%)	80 (3.2%)	2184 (19.2%)
Q27				
0	661 (100%)	0 (0%)	0 (0%)	661 (5.8%)
5	0 (0%)	1426 (100%)	0 (0%)	1426 (12.5%)
10	0 (0%)	0 (0%)	2488 (100%)	2488 (21.9%)
Missing	0 (0%)	0 (0%)	0 (0%)	6798 (59.8%)

Note: "Skip" are all unscored alternatives which indicate to skip Q27

Table S9 - Q24, Q28 and Q29 items by scores of the "Treatments" parcelled item (Q24+Q28+Q29)

	Scores of the parcelled item		Total sample
	0	**10**	
	(N=1684)	**(N=5794)**	**(N=11373)**
Q24 (unscored skip question)			
Skip	0 (0%)	0 (0%)	1717 (15.1%)
Yes	1659 (98.5%)	5759 (99.4%)	9316 (81.9%)
Missing	25 (1.5%)	35 (0.6%)	340 (3.0%)
Q28 (unscored skip question)			
Skip	0 (0%)	0 (0%)	1286 (11.3%)
Yes	1650 (98.0%)	5714 (98.6%)	7808 (68.7%)
Missing	34 (2.0%)	80 (1.4%)	2279 (20.0%)
Q29			
0	1684 (100%)	0 (0%)	1684 (14.8%)
10	0 (0%)	5794 (100%)	5794 (50.9%)
Missing	0 (0%)	0 (0%)	3895 (34.2%)

Note: "Skip" are all unscored alternatives which indicate to skip Q29

Table S10 - Q30, Q31 and Q32 items by scores of the "Treatments" parcelled item (Q30+Q31+Q32)

	Scores of the parcelled item					Total sample
	0 (n=126)	**5** (n=384)	**10** (n=837)	**15** (n=761)	**20** (n=1901)	**(N=11373)**
Q30 (unscored skip question)						
Skip	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4498 (39.5%)
Yes	107 (84.9%)	366 (95.3%)	812 (97.0%)	752 (98.8%)	1883 (99.1%)	3958 (34.8%)
Missing	19 (15.1%)	18 (4.7%)	25 (3.0%)	9 (1.2%)	18 (0.9%)	2917 (25.6%)
Q31						
0	110 (87.3%)	35 (9.1%)	11 (1.3%)	0 (0%)	0 (0%)	156 (1.4%)
5	0 (0%)	317 (82.6%)	635 (75.9%)	147 (19.3%)	0 (0%)	1099 (9.7%)
10	0 (0%)	0 (0%)	136 (16.2%)	614 (80.7%)	1901 (100%)	2651 (23.3%)
Missing	16 (12.7%)	32 (8.3%)	55 (6.6%)	0 (0%)	0 (0%)	7467 (65.7%)
Q32						
0	103 (81.7%)	205 (53.4%)	72 (8.6%)	0 (0%)	0 (0%)	380 (3.3%)
5	0 (0%)	67 (17.4%)	635 (75.9%)	614 (80.7%)	0 (0%)	1316 (11.6%)
10	0 (0%)	0 (0%)	66 (7.9%)	147 (19.3%)	1901 (100%)	2114 (18.6%)
Missing	23 (18.3%)	112 (29.2%)	64 (7.6%)	0 (0%)	0 (0%)	7563 (66.5%)

Note: "Skip" are all unscored alternatives which indicate to skip Q31 and Q32

Table S11 - Model fit of EFA models

Model	Parameters	χ2 test	df	p-value	RMSEA	(90% CI)	CFI	TLI	SRMR	Eigenvalue
1-factor	22	6.012.124	209	<0.001	0.070	(0.068 to 0.071)	0.959	0.955	0.075	12.349
2-factor	43	2.300.842	188	<0.001	0.044	(0.043 to 0.046)	0.985	0.982	0.043	1.601
3-factor	63	1.400.211	168	<0.001	0.036	(0.034 to 0.038)	0.991	0.988	0.033	1.026
4-factor	82	902.267	149	<0.001	0.030	(0.028 to 0.032)	0.995	0.992	0.024	0.883
5-factor	100	509.760	131	<0.001	0.023	(0.021 to 0.025)	0.997	0.995	0.021	0.755
6-factor	117	331.345	114	<0.001	0.018	(0.016 to 0.021)	0.998	0.997	0.016	0.676
7-factor	133	234.375	98	<0.001	0.016	(0.013 to 0.018)	0.999	0.998	0.014	0.493
8-factor	N/A									0.448
9-factor	162	94.572	69	0.022	0.008	(0.003 to 0.012)	1.000	0.999	0.009	0.423
10-factor	175	70.755	56	0.089	0.007	(0.000 to 0.011)	1.000	1.000	0.007	0.398

Note: Model fit parameters were χ2 test of model fit, root mean square error of approximation (RMSEA), comparative fit index (CFI), Tucker Lewis Index (TLI) and Standardized Root Mean Square Residual (SRMR). Values of RMSEA or SRMR near or below 0.08 represent acceptable model fit, and values lower than 0.06 represent good-to-excellent model fit. CFI and TLI values near or above 0.90 represent acceptable model fit, while values higher than 0.95 represent a good-to-excellent model fit.

Table S12 - EFA model fit comparison

Model comparison			Comparison test results		
Compared		Comparator	χ2 test	Δ df	p-value
1-factor	against	2-factor	2.143.470	21	0.0000
2-factor	against	3-factor	685.842	20	0.0000
3-factor	against	4-factor	405.235	19	0.0000
4-factor	against	5-factor	349.327	18	0.0000
5-factor	against	6-factor	156.273	17	0.0000
6-factor	against	7-factor	91.405	16	0.0000
9-factor	against	10-factor	23.567	13	0.0354

Note: EFA, Exploratory factor analysis.

Table S13 - Geomin-rotated factor loadings from the fitted EFA 1-factor model of the 2017 NHS-CMH (n = 5,687)

Items	Factor 1
Q3	0.769
Q4	0.881
Q5	0.850
Q6	0.838
Q7+Q9+Q10	0.642
Q11+Q12+Q13	0.803
Q14+Q15+Q16	0.768
Q17+Q18+Q19+Q20	0.689
Q21+Q22+Q23	0.348
Q24+Q25	0.648
Q24+Q26+Q27	0.685
Q24+Q28+Q29	0.621
Q30+Q31+Q32	0.703
Q33	0.823
Q34	0.762
Q35	0.824
Q36	0.712
Q37	0.704
Q38	0.700
Q39	0.860
Q40	0.871
Q41	0.799

Note: EFA, Exploratory factor analysis; NHS-CMH, National Health Service Community Mental Health Service User Questionnaire. Summed items were parcelles of skip questions and their scored items.

Table S14 - Geomin-rotated factor loadings and correlation from the fitted EFA 2-factor model of the 2017 NHS-CMH (n = 5,687)

Items	Factor 1	Factor 2
Q3	**0.626**	0.207
Q4	**1.039**	-0.171
Q5	**0.944**	-0.089
Q6	**0.853**	0,014
Q7+Q9+Q10	0.215	**0.510**
Q11+Q12+Q13	**0.404**	**0.493**
Q14+Q15+Q16	**0.348**	**0.507**
Q17+Q18+Q19+Q20	**0.365**	**0.405**
Q21+Q22+Q23	-0,05	**0.457**
Q24+Q25	**0.540**	0.162
Q24+Q26+Q27	**0.501**	0.250
Q24+Q28+Q29	0.235	**0.464**
Q30+Q31+Q32	**0.552**	0.213
Q33	0.143	**0.774**
Q34	-0,05	**0.892**
Q35	-0,013	**0.911**
Q36	0,021	**0.777**
Q37	**0.531**	0.240
Q38	0.082	**0.707**
Q39	**0.610**	0.334
Q40	**0.789**	0.136
Q41	**0.830**	-0,003
Correlations	Factor 1	Factor 2
Factor 1	1.000	
Factor 2	0.668	1.000

Note: Bold numbers are factor loadings ≥0.3. EFA, Exploratory factor analysis; NHS-CMH, National Health Service Community Mental Health Service User Questionnaire. Summed items were parcelles of skip questions and their scored items.

Table S15 - Geomin-rotated factor loadings and correlation from the fitted EFA 3-factor model of the 2017 NHS-CMH (n = 5,687)

Items	Factor 1	Factor 2	Factor 3
Q3	**0.556**	0.083	0.226
Q4	**1.004**	-0.045	-0.061
Q5	**0.895**	-0.005	-0.003
Q6	**0.773**	0.080	0.045
Q7+Q9+Q10	-0.127	**0.666**	0.194
Q11+Q12+Q13	0.013	**0.752**	0.147
Q14+Q15+Q16	0.009	**0.648**	0.207
Q17+Q18+Q19+Q20	0.114	**0.482**	0.191
Q21+Q22+Q23	-0.300	**0.489**	0.222
Q24+Q25	0.285	**0.490**	-0.065
Q24+Q26+Q27	0.157	**0.664**	-0.069
Q24+Q28+Q29	0.017	**0.419**	0.283
Q30+Q31+Q32	**0.300**	**0.473**	0.002
Q33	0.107	0.132	**0.719**
Q34	-0.022	0.038	**0.866**
Q35	-0.009	0.107	**0.835**
Q36	0.064	-0.010	**0.782**
Q37	**0.519**	-0.002	0.286
Q38	0.143	-0.055	**0.739**
Q39	**0.461**	0.255	0.262
Q40	**0.666**	0.177	0.114
Q41	**0.765**	0.055	0.035
Correlations	Factor 1	Factor 2	Factor 3
Factor 1	1.000		
Factor 2	0.763	1.000	
Factor 3	0.603	0.655	1.000

Note: Bold numbers are factor loadings ≥0.3. EFA, Exploratory factor analysis; NHS-CMH, National Health Service Community Mental Health Service User Questionnaire. Summed items were parcelles of skip questions and their scored items.

Table S16 - Geomin-rotated factor loadings and correlation from the fitted EFA 5-factor model of the 2017 NHS-CMH (n = 5,687)

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Q3	**0.592**	0.133	0.209	-0.071	-0.011
Q4	**0.973**	0.000	-0.058	0.000	-0.015
Q5	**0.891**	0.014	0.021	0.022	-0.135
Q6	**0.742**	0.050	0.051	0.086	-0.019
Q7+Q9+Q10	0.024	**0.815**	-0.040	-0.087	0.103
Q11+Q12+Q13	0.072	**0.669**	0.004	0.241	-0.029
Q14+Q15+Q16	0.041	**0.527**	0.128	0.268	-0.114
Q17+Q18+Q19+Q20	0.186	**0.485**	0.078	0.057	0.019
Q21+Q22+Q23	-0.255	**0.497**	0.078	0.046	0.192
Q24+Q25	0.056	-0.014	0.010	**0.782**	0.041
Q24+Q26+Q27	-0.026	0.160	0.022	**0.722**	0.001
Q24+Q28+Q29	0.023	**0.334**	0.237	0.168	-0.028
Q30+Q31+Q32	0.205	0.211	-0.011	**0.424**	0.088
Q33	0.080	0.090	**0.746**	0.045	-0.038
Q34	-0.036	0.049	**0.901**	-0.053	-0.037
Q35	-0.040	0.082	**0.864**	0.014	-0.016
Q36	0.037	0.004	**0.813**	-0.076	0.072
Q37	**0.457**	-0.091	**0.338**	0.100	0.025
Q38	0.045	-0.147	**0.827**	0.060	0.081
Q39	**0.421**	0.202	0.207	0.092	0.225
Q40	**0.678**	0.182	0.021	-0.021	0.298
Q41	**0.754**	-0.033	-0.004	0.029	**0.334**
Correlations	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1	1.000				
Factor 2	0.666	1.000			
Factor 3	0.634	0.731	1.000		
Factor 4	0.679	0.523	0.567	1.000	
Factor 5	0.183	0.185	0.247	0.256	

Note: Bold numbers are factor loadings ≥0.3. EFA, Exploratory factor analysis; NHS-CMH, National Health Service Community Mental Health Service User Questionnaire. Summed items were parcelles of skip questions and their scored items.

Table S17 - Geomin-rotated factor loadings and correlation from the fitted EFA 6-factor model of the 2017 NHS-CMH (n = 5,687)

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Q3	**0.575**	0.208	0.155	-0.060	-0.016	-0.119
Q4	**0.988**	-0.027	-0.034	-0.017	-0.018	0.109
Q5	**0.870**	0.062	-0.001	0.028	-0.147	0.004
Q6	**0.769**	-0.004	0.088	0.073	-0.024	0.164
Q7+Q9+Q10	0.074	**0.749**	-0.048	-0.062	0.146	0.027
Q11+Q12+Q13	0.109	**0.621**	-0.005	0.266	-0.007	0.081
Q14+Q15+Q16	0.010	**0.592**	0.057	**0.322**	-0.098	-0.107
Q17+Q18+Q19+Q20	0.202	**0.477**	0.052	0.081	0.039	-0.020
Q21+Q22+Q23	-0.174	**0.364**	0.124	0.038	0.233	0.192
Q24+Q25	0.081	-0.039	-0.004	**0.785**	0.027	-0.016
Q24+Q26+Q27	-0.005	0.128	0.006	**0.743**	-0.001	0.000
Q24+Q28+Q29	-0.014	**0.419**	0.158	0.205	0.006	-0.200
Q30+Q31+Q32	0.262	0.108	0.020	**0.430**	0.084	0.147
Q33	0.069	0.131	**0.717**	0.060	-0.037	0.003
Q34	-0.018	0.054	**0.881**	-0.043	-0.036	0.115
Q35	0.013	-0.011	**0.914**	0.008	-0.012	**0.304**
Q36	0.023	0.049	**0.783**	-0.066	0.077	-0.050
Q37	**0.418**	0.000	0.273	0.126	0.015	-0.210
Q38	0.021	-0.093	**0.792**	0.073	0.079	-0.090
Q39	**0.476**	0.132	0.218	0.089	0.235	0.060
Q40	**0.724**	0.145	0.003	-0.017	**0.305**	-0.054
Q41	**0.796**	-0.079	-0.004	0.026	**0.320**	-0.039
Correlations	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Factor 1	1.000					
Factor 2	0.631	1.000				
Factor 3	0.630	0.707	1.000			
Factor 4	0.682	0.506	0.576	1.000		
Factor 5	0.160	0.234	0.264	0.276	1.000	
Factor 6	-0.047	0.082	-0.053	0.018	0.028	1.000

Note: Bold numbers are factor loadings ≥0.3. EFA, Exploratory factor analysis; NHS-CMH, National Health Service Community Mental Health Service User Questionnaire. Summed items were parcelles of skip questions and their scored items.

Table S18 - Geomin-rotated factor loadings and correlation from the fitted EFA 7-factor model of the 2017 NHS-CMH (n = 5,687)

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Q3	**0.545**	0.134	0.100	-0.049	0.044	0.261	0.019
Q4	**0.818**	-0.007	-0.024	-0.034	**0.381**	-0.013	0.033
Q5	**0.644**	0.044	-0.016	0.034	**0.323**	0.183	0.011
Q6	**0.628**	-0.013	0.129	0.075	0.287	0.022	-0.056
Q7+Q9+Q10	0.167	**0.761**	-0.036	-0.066	-0.005	-0.158	0.018
Q11+Q12+Q13	0.115	**0.588**	0.041	0.274	0.045	0.005	-0.125
Q14+Q15+Q16	-0.025	**0.582**	0.011	**0.322**	0.025	0.114	0.053
Q17+Q18+Q19+Q20	0.250	**0.422**	0.052	0.093	-0.028	0.078	-0.058
Q21+Q22+Q23	-0.027	**0.403**	0.206	0.024	-0.019	**-0.378**	-0.002
Q24+Q25	0.122	-0.026	-0.017	**0.753**	-0.003	-0.003	0.029
Q24+Q26+Q27	0.012	0.150	-0.005	**0.724**	0.017	-0.029	0.034
Q24+Q28+Q29	-0.002	**0.462**	0.042	0.199	-0.030	0.040	0.248
Q30+Q31+Q32	**0.329**	0.036	0.103	**0.435**	0.010	-0.013	-0.184
Q33	0.072	0.096	**0.653**	0.080	-0.038	0.171	0.065
Q34	-0.001	-0.002	**0.869**	-0.027	-0.054	0.156	-0.025
Q35	-0.026	-0.008	**0.958**	0.013	0.113	-0.033	-0.053
Q36	0.024	0.112	**0.696**	-0.084	0.038	-0.033	0.293
Q37	**0.392**	0.015	0.141	0.122	0.032	0.149	0.255
Q38	0.042	-0.042	**0.681**	0.068	-0.012	0.003	**0.316**
Q39	**0.602**	0.088	0.233	0.092	-0.019	-0.062	0.000
Q40	**0.951**	0.036	-0.010	-0.018	-0.114	0.027	-0.028
Q41	**0.939**	-0.123	-0.015	0.026	-0.018	-0.056	0.067
Correlations	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Factor 1	1.000						
Factor 2	0.670	1.000					
Factor 3	0.650	0.706	1.000				
Factor 4	0.682	0.470	0.551	1.000			
Factor 5	0.263	0.133	0.099	0.239	1.000		
Factor 6	0.282	0.291	0.223	0.179	0.212	1.000	
Factor 7	0.224	0.116	0.149	0.183	0.020	0.192	1.000

Note: Bold numbers are factor loadings ≥0.3. EFA, Exploratory factor analysis; NHS-CMH, National Health Service Community Mental Health Service User Questionnaire. Summed items were parcelles of skip questions and their scored items.

Table S19 - Geomin-rotated factor loadings and correlation from the fitted EFA 9-factor model of the 2017 NHS-CMH (n = 5,687)

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
Q3	**0.856**	0.044	0.007	0.015	0.022	0.028	0.028	-0.016	0.009
Q4	0.004	**0.880**	-0.019	-0.041	0.009	-0.018	0.119	0.036	0.021
Q5	0.167	**0.747**	0.035	0.027	0.006	-0.001	-0.026	-0.023	0.044
Q6	0.018	**0.667**	0.031	0.054	-0.010	0.146	0.076	0.010	-0.046
Q7+Q9+Q10	0.026	-0.013	**0.646**	-0.187	0.019	-0.050	0.120	0.251	0.048
Q11+Q12+Q13	0.011	0.055	**0.734**	0.105	0.005	0.044	0.007	0.043	-0.071
Q14+Q15+Q16	-0.023	0.045	**0.707**	0.097	0.035	0.023	-0.032	-0.034	0.159
Q17+Q18+Q19+Q20	0.113	-0.041	**0.520**	-0.015	0.002	0.070	0.160	0.001	-0.011
Q21+Q22+Q23	-0.051	0.006	0.016	0.022	0.007	0.127	0.002	**0.628**	-0.018
Q24+Q25	0.085	-0.014	-0.007	**0.756**	0.007	-0.017	0.072	0.024	0.057
Q24+Q26+Q27	0.004	0.023	0.206	**0.611**	0.023	-0.006	0.007	0.036	0.066
Q24+Q28+Q29	0.075	0.035	0.268	0.035	-0.015	0.046	-0.010	0.210	**0.444**
Q30+Q31+Q32	-0.010	0.036	0.242	**0.375**	-0.021	0.126	0.227	-0.046	-0.163
Q33	0.096	0.016	0.086	0.001	-0.008	**0.674**	0.039	0.015	0.140
Q34	0.017	-0.023	0.037	-0.103	-0.032	**0.923**	0.027	-0.026	0.042
Q35	0.004	0.137	0.004	0.032	0.041	**0.870**	-0.099	0.053	-0.108
Q36	0.004	0.001	0.007	-0.002	**1.741**	0.005	0.002	0.000	-0.001
Q37	-0.014	0.201	0.042	0.015	0.013	0.191	0.293	-0.086	**0.333**
Q38	-0.010	-0.030	-0.083	0.041	0.070	**0.621**	0.171	0.015	0.194
Q39	0.106	0.061	0.078	0.090	0.017	0.214	**0.434**	0.125	-0.014
Q40	0.213	0.025	0.077	0.014	-0.003	0.015	**0.650**	0.070	-0.009
Q41	0.007	0.110	-0.019	0.028	0.022	-0.013	**0.783**	-0.014	0.033
Correlations	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
Factor 1	1.000								
Factor 2	0.704	1.000							
Factor 3	0.679	0.679	1.000						
Factor 4	0.290	0.256	0.325	1.000					
Factor 5	0.584	0.543	0.718	0.200	1.000				
Factor 6	0.428	0.605	0.564	0.504	0.433	1.000			
Factor 7	0.641	0.817	0.656	0.589	0.276	0.565	1.000		
Factor 8	0.209	0.202	0.450	0.234	0.191	0.393	0.273	1.000	
Factor 9	0.332	0.250	0.289	0.271	0.191	0.301	0.250	0.022	1.000

Note: Bold numbers are factor loadings ≥0.3. EFA, Exploratory factor analysis; NHS-CMH, National Health Service Community Mental Health Service User Questionnaire. Summed items were parcelles of skip questions and their scored items.

Table S20 - Geomin-rotated factor loadings and correlation from the fitted EFA 10-factor model of the 2017 NHS-CMH (n = 5,687)

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10
Q3	**0.802**	0.063	0.002	0.019	0.013	0.031	0.032	0.042	-0.018	0.017
Q4	0.000	**0.884**	-0.014	-0.048	0.037	-0.046	0.013	0.116	0.030	0.034
Q5	0.168	**0.751**	0.034	0.028	-0.004	0.019	0.014	-0.041	-0.029	0.029
Q6	0.017	**0.692**	0.036	0.056	-0.002	0.165	-0.018	0.043	0.031	-0.076
Q7+Q9+Q10	0.031	-0.012	**0.600**	-0.173	-0.006	-0.046	0.025	0.128	0.244	0.091
Q11+Q12+Q13	0.013	0.066	**0.715**	0.114	0.019	0.027	0.002	0.002	0.057	-0.034
Q14+Q15+Q16	-0.026	0.046	**0.657**	0.101	0.004	0.050	0.045	-0.031	-0.051	0.189
Q17+Q18+Q19+Q20	0.114	-0.025	**0.506**	-0.008	-0.003	0.087	0.007	0.145	0.000	-0.012
Q21+Q22+Q23	-0.051	0.025	0.002	0.036	0.003	0.078	0.026	-0.010	**0.654**	-0.005
Q24+Q25	0.086	-0.006	-0.008	**0.764**	-0.023	0.011	0.011	0.046	0.021	0.042
Q24+Q26+Q27	0.006	0.010	0.205	**0.613**	0.034	-0.046	0.036	0.014	0.026	0.092
Q24+Q28+Q29	0.075	0.012	0.166	0.024	0.038	0.069	-0.029	0.019	0.179	**0.546**
Q30+Q31+Q32	-0.011	0.043	0.275	**0.374**	0.039	0.077	-0.032	0.216	-0.022	-0.148
Q33	0.095	0.063	0.061	0.014	-0.002	**0.773**	0.000	-0.044	0.031	0.019
Q34	0.026	-0.030	0.070	-0.078	0.097	**0.780**	0.004	0.023	0.017	-0.006
Q35	0.002	0.005	-0.001	0.006	**1.484**	0.006	0.006	0.001	-0.001	0.003
Q36	0.011	0.003	0.015	-0.002	0.007	0.010	**1.297**	0.001	0.006	-0.008
Q37	-0.015	0.200	0.003	0.019	-0.020	0.283	0.025	0.272	-0.122	0.268
Q38	-0.025	-0.006	-0.088	0.054	0.014	**0.635**	0.135	0.124	0.010	0.085
Q39	0.105	0.068	0.086	0.095	0.020	0.191	0.030	**0.419**	0.130	-0.026
Q40	0.221	-0.003	0.081	0.010	0.031	-0.009	-0.014	**0.679**	0.058	0.015
Q41	0.003	0.116	-0.014	0.024	-0.012	0.019	0.024	**0.763**	-0.031	0.022

Correlations	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10
Factor 1	1.000									
Factor 2	0.696	1.000								
Factor 3	0.666	0.662	1.000							
Factor 4	0.347	0.349	0.436	1.000						
Factor 5	0.417	0.609	0.541	0.321	1.000					
Factor 6	0.594	0.544	0.698	0.504	0.553	1.000				
Factor 7	0.374	0.330	0.417	0.260	0.361	0.544	1.000			
Factor 8	0.627	0.823	0.641	0.600	0.339	0.579	0.364	1.000		
Factor 9	0.214	0.199	0.470	0.224	0.288	0.382	0.249	0.289	1.000	
Factor 10	0.367	0.320	0.348	0.325	0.164	0.404	0.269	0.297	0.117	1.000

Note: Bold numbers are factor loadings ≥0.3. EFA, Exploratory factor analysis; NHS-CMH, National Health Service Community Mental Health Service User Questionnaire. Summed items were parcelles of skip questions and their scored items.

Table S21 - Polychoric correlation matrix used in EFA (with variaces on the diagonal)

	Q3	Q4	Q5	Q6	Q7+Q9+Q10	Q11+Q12+Q13	Q14+Q15+Q16	Q17+Q18+Q19+Q20	Q21+Q22+Q23	Q24+Q25	Q24+Q26+Q27	Q24+Q28+Q29	Q30+Q31+Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
Q3																					
Q4	0.674																				
Q5	0.712	0.845																			
Q6	0.649	0.821	0.776																		
Q7+Q9+Q10	0.482	0.472	0.450	0.462																	
Q11+Q12+Q13	0.602	0.604	0.622	0.640	0.631																
Q14+Q15+Q16	0.574	0.578	0.572	0.572	0.559	0.715															
Q17+Q18+Q19+Q20	0.560	0.544	0.530	0.530	0.559	0.623	0.578														
Q21+Q22+Q23	0.176	0.194	0.171	0.231	0.388	0.353	0.277	0.254													
Q24+Q25	0.467	0.543	0.531	0.544	0.316	0.532	0.506	0.414	0.208												
Q24+Q26+Q27	0.459	0.530	0.538	0.560	0.401	0.567	0.567	0.492	0.238	0.674											
Q24+Q28+Q29	0.495	0.448	0.461	0.435	0.469	0.517	0.580	0.420	0.298	0.410	0.463										
Q30+Q31+Q32	0.498	0.575	0.578	0.600	0.402	0.613	0.539	0.498	0.248	0.581	0.575	0.366									
Q33	0.626	0.545	0.573	0.615	0.504	0.649	0.643	0.580	0.329	0.482	0.506	0.557	0.515								
Q34	0.535	0.453	0.472	0.517	0.485	0.572	0.564	0.518	0.313	0.387	0.422	0.474	0.469	0.785							
Q35	0.552	0.545	0.515	0.572	0.484	0.643	0.576	0.521	0.366	0.437	0.519	0.493	0.552	0.771	0.823						
Q36	0.543	0.457	0.467	0.470	0.470	0.529	0.557	0.470	0.309	0.365	0.424	0.445	0.387	0.682	0.655	0.751					
Q37	0.558	0.614	0.621	0.588	0.413	0.512	0.536	0.461	0.144	0.489	0.476	0.512	0.471	0.579	0.527	0.489	0.511				
Q38	0.498	0.471	0.467	0.496	0.414	0.521	0.500	0.457	0.270	0.435	0.453	0.470	0.446	0.706	0.662	0.670	0.702	0.550			
Q39	0.664	0.724	0.690	0.713	0.550	0.697	0.624	0.587	0.347	0.576	0.579	0.525	0.627	0.695	0.619	0.668	0.605	0.605	0.596		
Q40	0.714	0.776	0.729	0.733	0.545	0.662	0.603	0.590	0.275	0.550	0.573	0.498	0.612	0.625	0.546	0.585	0.518	0.625	0.524	0.794	
Q41	0.597	0.751	0.686	0.699	0.426	0.556	0.530	0.512	0.206	0.528	0.495	0.424	0.592	0.532	0.445	0.466	0.473	0.602	0.490	0.723	0.793

Table S22 - Polychoric correlation matrix used in CFA (with variaces on the diagonal)

	Q3	Q4	Q5	Q6	Q7+Q9+Q10	Q11+Q12+Q13	Q14+Q15+Q16	Q17+Q18+Q19+Q20	Q21+Q22+Q23	Q24+Q25	Q24+Q26+Q27	Q24+Q28+Q29	Q30+Q31+Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
Q3																					
Q4	0.683																				
Q5	0.720	0.831																			
Q6	0.662	0.837	0.774																		
Q7+Q9+Q10	0.499	0.465	0.476	0.467																	
Q11+Q12+Q13	0.607	0.603	0.628	0.651	0.626																
Q14+Q15+Q16	0.605	0.572	0.610	0.585	0.582	0.739															
Q17+Q18+Q19+Q20	0.545	0.502	0.480	0.500	0.531	0.623	0.588														
Q21+Q22+Q23	0.169	0.148	0.180	0.221	0.324	0.346	0.281	0.255													
Q24+Q25	0.510	0.553	0.585	0.565	0.378	0.565	0.533	0.422	0.194												
Q24+Q26+Q27	0.478	0.518	0.522	0.547	0.352	0.541	0.488	0.479	0.251	0.647											
Q24+Q28+Q29	0.470	0.427	0.481	0.455	0.466	0.516	0.587	0.438	0.278	0.410	0.443										
Q30+Q31+Q32	0.553	0.596	0.591	0.631	0.400	0.616	0.554	0.453	0.273	0.627	0.572	0.408									
Q33	0.641	0.561	0.571	0.595	0.537	0.655	0.651	0.577	0.336	0.527	0.563	0.540	0.553								
Q34	0.531	0.472	0.482	0.497	0.491	0.580	0.555	0.483	0.325	0.412	0.415	0.506	0.446	0.756							
Q35	0.576	0.538	0.522	0.522	0.489	0.638	0.571	0.529	0.393	0.451	0.451	0.457	0.517	0.756	0.820						
Q36	0.549	0.476	0.475	0.468	0.484	0.550	0.537	0.500	0.284	0.408	0.415	0.433	0.422	0.652	0.671	0.706					
Q37	0.583	0.596	0.624	0.588	0.438	0.523	0.538	0.470	0.152	0.501	0.430	0.460	0.484	0.615	0.528	0.520	0.511				
Q38	0.532	0.506	0.484	0.535	0.409	0.521	0.555	0.494	0.266	0.456	0.478	0.433	0.471	0.716	0.671	0.682	0.698	0.583			
Q39	0.689	0.719	0.683	0.719	0.561	0.713	0.658	0.592	0.314	0.572	0.567	0.548	0.646	0.702	0.630	0.671	0.598	0.613	0.611		
Q40	0.727	0.751	0.724	0.722	0.544	0.663	0.621	0.578	0.223	0.561	0.528	0.508	0.607	0.657	0.564	0.601	0.539	0.628	0.574	0.803	
Q41	0.651	0.764	0.705	0.704	0.449	0.578	0.560	0.494	0.166	0.574	0.460	0.435	0.585	0.597	0.479	0.517	0.488	0.617	0.491	0.715	0.795

R code for data processing

```
#Settings
```{r settings, message=FALSE, warning=F}
# NOTATIONS
# - suffix "p", processed variable

#Library
library(foreign);library(tidyverse); library(car); library(dplyr); library(lavaan); library(forcats);
library(semTools); library(semPlot); library(rio); library(psych); library(mirt); library(ggcorrplot);
library(table1); library(sjlabelled)

#Data
mydata<-import(file="mh17_respondent_level.sav")

# Jump variable from Q1, option 7 "never seen anyone from NHS.
summary.factor(mydata$Q1)
mydata <- mydata %>% mutate(Q1p = case_when(is.na(Q1) & is.na(Q2) & is.na(Q3) & is.na(Q4) &
is.na(Q5) & is.na(Q6) & is.na(Q7) & is.na(Q9) & is.na(Q10) & is.na(Q11) & is.na(Q12) & is.na(Q13)
& is.na(Q14) & is.na(Q15) & is.na(Q16) & is.na(Q17) & is.na(Q18) & is.na(Q19) & is.na(Q20) &
is.na(Q21) & is.na(Q22) & is.na(Q23) & is.na(Q24) & is.na(Q25) & is.na(Q26) & is.na(Q27) &
is.na(Q28) & is.na(Q29) & is.na(Q30) & is.na(Q31) & is.na(Q32) & is.na(Q33) & is.na(Q34) &
is.na(Q35) & is.na(Q36) & is.na(Q37) & is.na(Q38) & is.na(Q39) & is.na(Q40) & is.na(Q41) ~ 7,
                            Q1==1 ~ 1,
                            Q1==2 ~ 2,
                            Q1==3 ~ 3,
                            Q1==4 ~ 4,
                            Q1==5 ~ 5,
                            TRUE ~ 6))
summary.factor(mydata$Q1p)


# Include only if have been in contact with NHS mental health services in past 12 months or earlier
mydata<- filter(mydata, Q1p<=4)
# Include only those in contact with NHS mental health services for more than 1 year
#mydata<- filter(mydata, Q2!=1)


# Selecting scored variables to describe
NHS_data_miss <- mydata %>% dplyr::select(Q3:Q7, Q9:Q16, Q18:Q21, Q23, Q25, Q27, Q29,
Q31:Q39, Q41)
# Describing scored variables
table1::table1(~ as.factor(Q3) + as.factor(Q4) + as.factor(Q5) + as.factor(Q6) + as.factor(Q7) +
as.factor(Q9) + as.factor(Q10) + as.factor(Q11) + as.factor(Q12) + as.factor(Q13) + as.factor(Q14)
+ as.factor(Q15) + as.factor(Q16) + as.factor(Q18) + as.factor(Q19) + as.factor(Q20) +
as.factor(Q21) + as.factor(Q23) + as.factor(Q25) + as.factor(Q27) + as.factor(Q29) + as.factor(Q31)
+ as.factor(Q32) + as.factor(Q33) + as.factor(Q34) + as.factor(Q35) + as.factor(Q36) +
as.factor(Q37) + as.factor(Q38) + as.factor(Q39) + as.factor(Q41), data = NHS_data_miss,
overall="Total sample")

# Item recoding and partialling (applied to questions with skip questions)

mydata<-mydata %>% mutate(STAFF_Q3 = case_when(Q3==1 ~ 10, Q3==2 ~ 5, Q3==3 ~ 0, Q3==4
~ NA_real_))
mydata<-mydata %>% mutate(STAFF_Q4 = case_when(Q4==1 ~ 10, Q4==2 ~ 5, Q4==3 ~ 0, Q4==4
~ NA_real_))
```

```
mydata<-mydata %>% mutate(STAFF_Q5 = case_when(Q5==1 ~ 10, Q5==2 ~ 5, Q5==3 ~ 0, Q5==4
~ NA_real_))
mydata<-mydata %>% mutate(STAFF_Q6 = case_when(Q6==1 ~ 10, Q6==2 ~ 5, Q6==3 ~ 0, Q6==4
~ NA_real_))

# ORGA
mydata <- mydata %>% mutate(Q7=car::recode(Q7,"NA=0"))
mydata <- mydata %>% mutate(Q9=car::recode(Q9,"NA=0"))
mydata <- mydata %>% mutate(Q10=car::recode(Q10,"NA=0"))# Need to attribute some value to NA
```
to recover the conditioned endorsed items that have a answer, but the skip quesiton is NA (here,
Q7==NA, but Q9 and Q10 have answers)
```
# test crazydata <- mydata %>% filter(Q7==0); summary.factor(crazydata$Q9);
summary.factor(crazydata$Q10)
mydata <- mydata %>% mutate(Q8_6=car::recode(Q8_6,"NA=0")) # just to operationalize !=1
mydata <- mydata %>% mutate(ORGA_miss = case_when(Q7==0 & Q9==0 & Q10==0 ~ "Full miss",
                            TRUE ~ "Not full miss")); summary.factor(mydata$ORGA_miss) #
```
checking how many complete missing rows have for the variables that compose the score - need to
match the NA cases in the ORGA variable
```
mydata <- mydata %>% mutate(ORGA = case_when(
  ORGA_miss=="Full miss" ~ NA_real_,
  Q7==2 ~ 0,
  Q7==1 & (Q8_6==1 | (Q9==2|Q9==0 & (Q10==3|Q10==4|Q10==0))) ~ 10,
  Q7==0 & (Q9==2 | (Q10==3|Q10==4)) ~ 10, #If there is answer in Q9 or Q10, imputed Yes for Q7
  Q7==0 & (Q8_6!=1 | (Q9==1 & (Q10==3|Q10==4|Q10==0))) ~ 20, #If there is answer in Q9 or Q10,
imputed Yes for Q7
  Q7==0 & (Q8_6!=1 | (Q9==2|Q9==0 & (Q10==1|Q10==2))) ~ 20,#If there is answer in Q9 or Q10,
imputed Yes for Q7
  Q7==1 & (Q8_6!=1 & (Q9==1 & (Q10==3|Q10==4|Q10==0))) ~ 20,
  Q7==1 & (Q8_6!=1 & ((Q9==2|Q9==0) & (Q10==1|Q10==2))) ~ 20,
  Q7==1 & (Q8_6!=1 & (Q9==1 & (Q10==1|Q10==2))) ~ 30)); summary.factor(mydata$ORGA)

ORGA_miss_data <- mydata %>% mutate(ORGA=car::recode(ORGA,"NA=99")) %>%
filter(ORGA==99)
table1::table1(~ as.factor(Q7) + as.factor(Q9) + as.factor(Q10), data = ORGA_miss_data,
overall="Total sample") # checking if NA in parcelled variable have only missing it the original
```
variables (coded as 0)
```
# Crosstab of original items and new variable - quality check
mydata <- mydata %>% mutate(Q7=car::recode(Q7,"0=NA; 1=10;2=0"))
mydata <- mydata %>% mutate(Q9=car::recode(Q9,"0=NA; 1=10;2=0"))
mydata <- mydata %>% mutate(Q10=car::recode(Q10,"0=NA; 1=10; 2=6.7; 3=3.3; 4=0"))
table1::table1(~ as.factor(Q7) + as.factor(Q9) + as.factor(Q10) | as.factor(ORGA), data = mydata,
overall="Total sample")


# PLAN
mydata <- mydata %>% mutate(Q11=car::recode(Q11,"NA=0"))
mydata <- mydata %>% mutate(Q12=car::recode(Q12,"NA=0"))
mydata <- mydata %>% mutate(Q13=car::recode(Q13,"NA=0"))
mydata <- mydata %>% mutate(PLAN_miss = case_when(Q11==0 & Q12==0 & Q13==0 ~ "Full
miss",
                            TRUE ~ "Not full miss")); summary.factor(mydata$PLAN_miss)
mydata <- mydata %>% mutate(PLAN = case_when(
  PLAN_miss=="Full miss" ~ NA_real_,
  Q11==3 ~ 0,
  Q11==0 & Q12==3 & Q13==3 ~ 5, #If there is answer in Q12 or Q13, imputed Yes for Q11
```

```
 Q11==0 & Q12==0 & Q13==3 ~ 5,
 Q11==0 & Q12==3 & Q13==0 ~ 5,
 Q11==2 & (Q12==3|Q12==0) & (Q13==3|Q13==0) ~ 5,
 Q11==2 & Q12==2 & (Q13==3|Q13==0) ~ 10,
 Q11==2 & Q12==1 & (Q13==3|Q13==0) ~ 15,
 Q11==2 & Q12==1 & Q13==2 ~ 20,
 Q11==2 & (Q12==3|Q12==0) & Q13==2 ~ 10,
 Q11==2 & (Q12==3|Q12==0) & Q13==1 ~ 15,
 Q11==2 & Q12==2 & Q13==2 ~ 15,
 Q11==2 & Q12==2 & Q13==1 ~ 20,
 Q11==2 & Q12==1 & Q13==1 ~ 25,
 Q11==1 & (Q12==3|Q12==0) & (Q13==3|Q13==0) ~ 10,
 Q11==1 & Q12==2 & (Q13==3|Q13==0) ~ 15,
 Q11==1 & Q12==1 & (Q13==3|Q13==0) ~ 20,
 Q11==1 & Q12==1 & Q13==2 ~ 25,
 Q11==1 & (Q12==3|Q12==0) & Q13==2 ~ 15,
 Q11==1 & (Q12==3|Q12==0) & Q13==1 ~ 20,
 Q11==1 & Q12==2 & Q13==2 ~ 20,
 Q11==1 & Q12==2 & Q13==1 ~ 25,
 Q11==1 & Q12==1 & Q13==1 ~ 30,
 Q11==0 & Q12==2 & (Q13==3|Q13==0) ~ 10,
 Q11==0 & Q12==1 & (Q13==3|Q13==0) ~ 15,
 Q11==0 & Q12==2 & Q13==2 ~ 15,
 Q11==0 & Q12==1 & Q13==2 ~ 20,
 Q11==0 & (Q12==3|Q12==0) & Q13==2 ~ 10,
 Q11==0 & (Q12==3|Q12==0) & Q13==1 ~ 15,
 Q11==0 & Q12==2 & Q13==1 ~ 20,
 Q11==0 & Q12==1 & Q13==1 ~ 25)); summary.factor(mydata$PLAN)
PLAN_miss_data <- mydata %>% mutate(PLAN=car::recode(PLAN,"NA=99")) %>%
filter(PLAN==99)
table1::table1(~ as.factor(Q11) + as.factor(Q12) + as.factor(Q13), data = PLAN_miss_data,
overall="Total sample") # checking if NA in parcelled variable have only missing it the original
variables (coded as 0)
# Crosstab of original items and new variable - quality check
mydata <- mydata %>% mutate(Q11=car::recode(Q11,"0=NA; 1=10;2=5; 3=0"))
mydata <- mydata %>% mutate(Q12=car::recode(Q12,"0=NA; 1=10;2=5; 3=0"))
mydata <- mydata %>% mutate(Q13=car::recode(Q13,"0=NA; 1=10;2=5; 3=0"))
table1::table1(~ as.factor(Q11) + as.factor(Q12) + as.factor(Q13) | as.factor(PLAN), data = mydata,
overall="Total sample")
# REV
mydata <- mydata %>% mutate(Q14=car::recode(Q14,"NA=0"))
mydata <- mydata %>% mutate(Q15=car::recode(Q15,"NA=0"))
mydata <- mydata %>% mutate(Q16=car::recode(Q16,"NA=0"))
mydata <- mydata %>% mutate(REV_miss = case_when(Q14==0 & Q15==0 & Q16==0 ~ "Full miss",
                            TRUE ~ "Not full miss")); summary.factor(mydata$REV_miss)
mydata <- mydata %>% mutate(REV = case_when(
 REV_miss=="Full miss" ~ NA_real_,
 Q14==2 ~ 0,
 Q14==0 & Q15==3 & Q16==3 ~ 10, #If there is answer in Q15 or Q16, imputed Yes for Q14
 Q14==0 & Q15==0 & Q16==3 ~ 10,
 Q14==0 & Q15==3 & Q16==0 ~ 10,
 Q14==1 & (Q15==3|Q15==0) & (Q16==3|Q16==0) ~ 10,
 Q14==1 & Q15==2 & (Q16==3|Q16==0) ~ 15,
 Q14==1 & Q15==1 & (Q16==3|Q16==0) ~ 20,
 Q14==1 & Q15==1 & Q16==2 ~ 25,
```

```
Q14==1 & (Q15==3|Q15==0) & Q16==2 ~ 15,
Q14==1 & (Q15==3|Q15==0) & Q16==1 ~ 20,
Q14==1 & Q15==2 & Q16==2 ~ 20,
Q14==1 & Q15==2 & Q16==1 ~ 25,
Q14==1 & Q15==1 & Q16==1 ~ 30,
Q14==0 & Q15==2 & (Q16==3|Q16==0) ~ 15,
Q14==0 & Q15==1 & (Q16==3|Q16==0) ~ 20,
Q14==0 & Q15==2 & Q16==2 ~ 20,
Q14==0 & Q15==1 & Q16==2 ~ 25,
Q14==0 & (Q15==3|Q15==0) & Q16==2 ~ 15,
Q14==0 & (Q15==3|Q15==0) & Q16==1 ~ 20,
Q14==0 & Q15==2 & Q16==1 ~ 25,
Q14==0 & Q15==1 & Q16==1 ~ 30)); summary.factor(mydata$REV)
REV_miss_data <- mydata %>% mutate(REV=car::recode(REV,"NA=99")) %>% filter(REV==99)
table1::table1(~ as.factor(Q14)   + as.factor(Q15)   + as.factor(Q16),  data = REV_miss_data,
overall="Total sample") # checking if NA in parcelled variable have only missing it the original
variables (coded as 0)
# Crosstab of original items and new variable - quality check
mydata <- mydata %>% mutate(Q14=car::recode(Q14,"0=NA; 1=10;2=0"))
mydata <- mydata %>% mutate(Q15=car::recode(Q15,"0=NA; 1=10;2=5; 3=0"))
mydata <- mydata %>% mutate(Q16=car::recode(Q16,"0=NA; 1=10;2=5; 3=0"))
table1::table1(~ as.factor(Q14)  + as.factor(Q15)  + as.factor(Q16)  | as.factor(REV), data = mydata,
overall="Total sample")

# CHANGE
mydata <- mydata %>% mutate(Q17=car::recode(Q17,"NA=0"))
mydata <- mydata %>% mutate(Q18=car::recode(Q18,"NA=0"))
mydata <- mydata %>% mutate(Q19=car::recode(Q19,"NA=0"))
mydata <- mydata %>% mutate(Q20=car::recode(Q20,"NA=0"))
mydata <- mydata %>% mutate(CHANGE_miss = case_when(Q17!=1 & Q18==0 & Q19==0 &
Q20==0 ~ "Full miss",
                            TRUE ~ "Not full miss")); summary.factor(mydata$CHANGE_miss)
mydata <- mydata %>% mutate(CHANGE = case_when(
 CHANGE_miss=="Full miss" ~ NA_real_,
 Q17==2 | Q17==3 | Q17==4 | Q17==5 ~ NA_real_,
 Q17==1 & Q18==3 & Q19==3 & Q20==2 ~ 0,
 Q17==1 & Q18==3 & Q19==0 & Q20==2 ~ 0,
 Q17==1 & Q18==3 & Q19==0 & Q20==0 ~ 0,
 Q17==1 & Q18==3 & Q19==3 & Q20==0 ~ 0,
 Q17==1 & Q18==0 & Q19==3 & Q20==2 ~ 0,
 Q17==1 & Q18==0 & Q19==3 & Q20==0 ~ 0,
 Q17==1 & Q18==0 & Q19==0 & Q20==2 ~ 0,
 Q17==1 & Q18==2 & Q19==3 & Q20==2 ~ 5,
 Q17==1 & Q18==2 & Q19==3 & Q20==0 ~ 5,
 Q17==1 & Q18==2 & Q19==0 & Q20==2 ~ 5,
 Q17==1 & Q18==2 & Q19==0 & Q20==0 ~ 5,
 Q17==1 & Q18==3 & Q19==2 & Q20==2 ~ 10,
 Q17==1 & Q18==3 & Q19==2 & Q20==0 ~ 10,
 Q17==1 & Q18==0 & Q19==2 & Q20==2 ~ 10,
 Q17==1 & Q18==0 & Q19==2 & Q20==0 ~ 10,
 Q17==1 & Q18==3 & Q19==3 & Q20==1 ~ 10,
 Q17==1 & Q18==3 & Q19==0 & Q20==1 ~ 10,
 Q17==1 & Q18==0 & Q19==3 & Q20==1 ~ 10,
 Q17==1 & Q18==0 & Q19==0 & Q20==1 ~ 10,
 Q17==1 & Q18==2 & Q19==2 & Q20==2 ~ 15,
```

Q17==1 & Q18==2 & Q19==2 & Q20==0 ~ 15,
Q17==1 & Q18==1 & Q19==3 & Q20==2 ~ 10,
Q17==1 & Q18==1 & Q19==0 & Q20==2 ~ 10,
Q17==1 & Q18==1 & Q19==3 & Q20==0 ~ 10,
Q17==1 & Q18==1 & Q19==0 & Q20==0 ~ 10,
Q17==1 & Q18==3 & Q19==1 & Q20==2 ~ 10,
Q17==1 & Q18==0 & Q19==1 & Q20==2 ~ 10,
Q17==1 & Q18==3 & Q19==1 & Q20==0 ~ 10,
Q17==1 & Q18==0 & Q19==1 & Q20==0 ~ 10,
Q17==1 & Q18==2 & Q19==3 & Q20==1 ~ 15,
Q17==1 & Q18==2 & Q19==0 & Q20==1 ~ 15,
Q17==1 & Q18==3 & Q19==2 & Q20==1 ~ 20,
Q17==1 & Q18==0 & Q19==2 & Q20==1 ~ 20,
Q17==1 & Q18==1 & Q19==2 & Q20==2 ~ 20,
Q17==1 & Q18==1 & Q19==2 & Q20==0 ~ 20,
Q17==1 & Q18==2 & Q19==1 & Q20==2 ~ 15,
Q17==1 & Q18==2 & Q19==1 & Q20==0 ~ 15,
Q17==1 & Q18==1 & Q19==3 & Q20==1 ~ 20,
Q17==1 & Q18==1 & Q19==0 & Q20==1 ~ 20,
Q17==1 & Q18==3 & Q19==1 & Q20==1 ~ 20,
Q17==1 & Q18==0 & Q19==1 & Q20==1 ~ 20,
Q17==1 & Q18==2 & Q19==2 & Q20==1 ~ 25,
Q17==1 & Q18==1 & Q19==1 & Q20==2 ~ 20,
Q17==1 & Q18==1 & Q19==1 & Q20==0 ~ 20,
Q17==1 & Q18==1 & Q19==2 & Q20==1 ~ 30,
Q17==1 & Q18==2 & Q19==1 & Q20==1 ~ 25,
Q17==1 & Q18==1 & Q19==1 & Q20==1 ~ 30,
Q17==0 & Q18==3 & Q19==3 & Q20==2 ~ 0,
Q17==0 & Q18==3 & Q19==0 & Q20==2 ~ 0,
Q17==0 & Q18==3 & Q19==0 & Q20==0 ~ 0,
Q17==0 & Q18==3 & Q19==3 & Q20==0 ~ 0,
Q17==0 & Q18==0 & Q19==3 & Q20==2 ~ 0,
Q17==0 & Q18==0 & Q19==3 & Q20==0 ~ 0,
Q17==0 & Q18==0 & Q19==0 & Q20==2 ~ 0,
Q17==0 & Q18==2 & Q19==3 & Q20==2 ~ 5,
Q17==0 & Q18==2 & Q19==3 & Q20==0 ~ 5,
Q17==0 & Q18==2 & Q19==0 & Q20==2 ~ 5,
Q17==0 & Q18==2 & Q19==0 & Q20==0 ~ 5,
Q17==0 & Q18==3 & Q19==2 & Q20==2 ~ 10,
Q17==0 & Q18==3 & Q19==2 & Q20==0 ~ 10,
Q17==0 & Q18==0 & Q19==2 & Q20==2 ~ 10,
Q17==0 & Q18==0 & Q19==2 & Q20==0 ~ 10,
Q17==0 & Q18==3 & Q19==3 & Q20==1 ~ 10,
Q17==0 & Q18==3 & Q19==0 & Q20==1 ~ 10,
Q17==0 & Q18==0 & Q19==3 & Q20==1 ~ 10,
Q17==0 & Q18==0 & Q19==0 & Q20==1 ~ 10,
Q17==0 & Q18==2 & Q19==2 & Q20==2 ~ 15,
Q17==0 & Q18==2 & Q19==2 & Q20==0 ~ 15,
Q17==0 & Q18==1 & Q19==3 & Q20==2 ~ 10,
Q17==0 & Q18==1 & Q19==0 & Q20==2 ~ 10,
Q17==0 & Q18==1 & Q19==3 & Q20==0 ~ 10,
Q17==0 & Q18==1 & Q19==0 & Q20==0 ~ 10,
Q17==0 & Q18==3 & Q19==1 & Q20==2 ~ 10,
Q17==0 & Q18==0 & Q19==1 & Q20==2 ~ 10,
Q17==0 & Q18==3 & Q19==1 & Q20==0 ~ 10,

```
  Q17==0 & Q18==0 & Q19==1 & Q20==0 ~ 10,
  Q17==0 & Q18==2 & Q19==3 & Q20==1 ~ 15,
  Q17==0 & Q18==2 & Q19==0 & Q20==1 ~ 15,
  Q17==0 & Q18==3 & Q19==2 & Q20==1 ~ 20,
  Q17==0 & Q18==0 & Q19==2 & Q20==1 ~ 20,
  Q17==0 & Q18==1 & Q19==2 & Q20==2 ~ 20,
  Q17==0 & Q18==1 & Q19==2 & Q20==0 ~ 20,
  Q17==0 & Q18==2 & Q19==1 & Q20==2 ~ 15,
  Q17==0 & Q18==2 & Q19==1 & Q20==0 ~ 15,
  Q17==0 & Q18==1 & Q19==3 & Q20==1 ~ 20,
  Q17==0 & Q18==1 & Q19==0 & Q20==1 ~ 20,
  Q17==0 & Q18==3 & Q19==1 & Q20==1 ~ 20,
  Q17==0 & Q18==0 & Q19==1 & Q20==1 ~ 20,
  Q17==0 & Q18==2 & Q19==2 & Q20==1 ~ 25,
  Q17==0 & Q18==1 & Q19==1 & Q20==2 ~ 20,
  Q17==0 & Q18==1 & Q19==1 & Q20==0 ~ 20,
  Q17==0 & Q18==1 & Q19==2 & Q20==1 ~ 30,
  Q17==0 & Q18==2 & Q19==1 & Q20==1 ~ 25,
  Q17==0 & Q18==1 & Q19==1 & Q20==1 ~ 30)); summary.factor(mydata$CHANGE)
CHANGE_miss_data <- mydata %>% mutate(CHANGE=car::recode(CHANGE,"NA=99")) %>%
filter(CHANGE==99)
table1::table1(~ as.factor(Q17)   + as.factor(Q18)   + as.factor(Q19) + as.factor(Q20), data =
CHANGE_miss_data, overall="Total sample") # checking if NA in parcelled variable have only
missing it the original variables (coded as 0)
# Crosstab of original items and new variable - quality check
mydata      <-      mydata      %>%      mutate(Q17=car::recode(Q17,"0=NA;      1='Yes';
2='Jump';3='Jump';4='Jump';5='Jump'"))
mydata <- mydata %>% mutate(Q18=car::recode(Q18,"0=NA; 1=10;2=5; 3=0"))
mydata <- mydata %>% mutate(Q19=car::recode(Q19,"0=NA; 1=10;2=10; 3=0"))
mydata <- mydata %>% mutate(Q20=car::recode(Q20,"0=NA; 1=10;2=0"))
table1::table1(~ as.factor(Q17)   + as.factor(Q18)   + as.factor(Q19)   + as.factor(Q20)   |
as.factor(CHANGE), data = mydata, overall="Total sample")

# CRISIS
mydata <- mydata %>% mutate(Q21=car::recode(Q21,"NA=0"))
mydata <- mydata %>% mutate(Q22=car::recode(Q22,"NA=0"))
mydata <- mydata %>% mutate(Q23=car::recode(Q23,"NA=0"))
mydata <- mydata %>% mutate(CRISIS_miss = case_when(Q21==0 & Q23==0 ~ "Full miss",
                             TRUE ~ "Not full miss")); summary.factor(mydata$CRISIS_miss)
mydata <- mydata %>% mutate(CRISIS = case_when(
  CRISIS_miss=="Full miss" ~ NA_real_,
  Q21==2 ~ 0,
  Q21==0 & (Q22==2 & (Q23==3|Q23==4)) ~ 10, #If there is answer in Q22 or Q23, imputed Yes for
Q21
  Q21==0 & (Q22==1 & (Q23==3|Q23==4)) ~ 10,
  Q21==0 & (Q22==0 & (Q23==3|Q23==4)) ~ 10,
  Q21==2 & (Q22==1 & Q23==2) ~ 5,
  Q21==0 & (Q22==1 & Q23==2) ~ 15,
  Q21==2 & (Q22==2 & Q23==2) ~ 5,
  Q21==0 & (Q22==2 & Q23==2) ~ 15,
  Q21==2 & (Q22==0 & Q23==2) ~ 5,
  Q21==0 & (Q22==0 & Q23==2) ~ 15,
  Q21==1 & (Q22==2 & (Q23==3|Q23==4)) ~ 10,
  Q21==1 & (Q22==2 & Q23==0) ~ 10,
  Q21==1 & (Q22==0 & (Q23==3|Q23==4)) ~ 10,
```

```
   Q21==1 & (Q22==0 & Q23==0) ~ 10,
   Q21==1 & (Q22==1 & (Q23==3|Q23==4)) ~ 10,
   Q21==1 & (Q22==1 & Q23==0) ~ 10,
   Q21==2 & (Q22==1 & Q23==1) ~ 10,
   Q21==0 & (Q22==1 & Q23==1) ~ 15,
   Q21==2 & (Q22==2 & Q23==1) ~ 10,
   Q21==0 & (Q22==2 & Q23==1) ~ 15,
   Q21==2 & (Q22==0 & Q23==1) ~ 10,
   Q21==0 & (Q22==0 & Q23==1) ~ 15,
   Q21==1 & (Q22==1 & Q23==2) ~ 15,
   Q21==1 & (Q22==2 & Q23==2) ~ 15,
   Q21==1 & (Q22==0 & Q23==2) ~ 15,
   Q21==1 & (Q22==1 & Q23==1) ~ 20,
   Q21==1 & (Q22==2 & Q23==1) ~ 20,
   Q21==1 & (Q22==0 & Q23==1) ~ 20));summary.factor(mydata$CRISIS)
```
CRISIS_miss_data <- mydata %>% mutate(CRISIS=car::recode(CRISIS,"NA=99")) %>% filter(CRISIS==99)

table1::table1(~ as.factor(Q21) + as.factor(Q22) + as.factor(Q23), data = CRISIS_miss_data, overall="Total sample") # checking if NA in parcelled variable have only missing it the original variables (coded as 0)

Crosstab of original items and new variable - quality check

mydata <- mydata %>% mutate(Q21=car::recode(Q21,"0=NA; 1=10;2=0"))

mydata <- mydata %>% mutate(Q22=car::recode(Q22,"0=NA; 1='Yes'; 2='Jump'"))

mydata <- mydata %>% mutate(Q23=car::recode(Q23,"0=NA; 1=10;2=5; 3=0; 4=0"))

table1::table1(~ as.factor(Q21) + as.factor(Q22) + as.factor(Q23) | as.factor(CRISIS), data = mydata, overall="Total sample")

CUURMED

mydata <- mydata %>% mutate(Q24=car::recode(Q24,"NA=0"))

mydata <- mydata %>% mutate(Q25=car::recode(Q25,"NA=0"))

mydata <- mydata %>% mutate(CURRMED_miss = case_when(Q24==0 & Q25==0 ~ "Full miss",
                                    TRUE ~ "Not full miss")); summary.factor(mydata$CURRMED_miss)

```
mydata <- mydata %>% mutate(CURRMED = case_when(
 CURRMED_miss=="Full miss" ~ NA_real_,
 Q24==2 ~ NA_real_,
 Q24==1 & Q25==3 ~ 0,
 Q24==0 & Q25==3 ~ 0,
 Q24==1 & Q25==2 ~ 5,
 Q24==0 & Q25==2 ~ 5,
 Q24==1 & Q25==1 ~ 10,
 Q24==0 & Q25==1 ~ 10));summary.factor(mydata$CURRMED)
```
CURRMED_miss_data <- mydata %>% mutate(CURRMED=car::recode(CURRMED,"NA=99")) %>% filter(CURRMED==99)

table1::table1(~ as.factor(Q24) + as.factor(Q25), data = CURRMED_miss_data, overall="Total sample") # checking if NA in parcelled variable have only missing it the original variables (coded as 0)

Crosstab of original items and new variable - quality check

mydata <- mydata %>% mutate(Q24=car::recode(Q24,"0=NA; 1='Yes'; 2='Jump'"))

mydata <- mydata %>% mutate(Q25=car::recode(Q25,"0=NA; 1=10; 2=5; 3=0"))

table1::table1(~ as.factor(Q24) + as.factor(Q25) | as.factor(CURRMED), data = mydata, overall="Total sample")

NEWMED

mydata <- mydata %>% mutate(Q24=car::recode(Q24,"NA=0; 'Yes'=1; 'Jump'=2"))

mydata <- mydata %>% mutate(Q26=car::recode(Q26,"NA=0"))

mydata <- mydata %>% mutate(Q27=car::recode(Q27,"NA=0"))

```
mydata <- mydata %>% mutate(NEWMED_miss = case_when(Q24==0 & Q26==0 & Q27==0 ~ "Full
miss",
                                    TRUE ~ "Not full miss")); summary.factor(mydata$NEWMED_miss)
mydata <- mydata %>% mutate(NEWMED = case_when(
 NEWMED_miss=="Full miss" ~ NA_real_,
 Q24==1 & Q26==2  ~ NA_real_,
 Q24==2 ~ NA_real_,
 Q24==1 & Q26==1 & Q27==4 ~ 0,
 Q24==1 & Q26==0 & Q27==4 ~ 0,
 Q24==1 & Q26==1 & Q27==3 ~ 0,
 Q24==1 & Q26==0 & Q27==3 ~ 0,
 Q24==1 & Q26==1 & Q27==2 ~ 5,
 Q24==1 & Q26==0 & Q27==2 ~ 5,
 Q24==1 & Q26==1 & Q27==1 ~ 10,
 Q24==1 & Q26==0 & Q27==1 ~ 10,
 Q24==2 & Q26==1 & Q27==4 ~ 0,
 Q24==0 & Q26==1 & Q27==4 ~ 0,
 Q24==0 & Q26==2 & Q27==4 ~ 0,
 Q24==0 & Q26==0 & Q27==4 ~ 0,
 Q24==0 & Q26==1 & Q27==3 ~ 0,
 Q24==0 & Q26==2 & Q27==3 ~ 0,
 Q24==0 & Q26==0 & Q27==3 ~ 0,
 Q24==0 & Q26==1 & Q27==2 ~ 5,
 Q24==0 & Q26==2 & Q27==2 ~ 5,
 Q24==0 & Q26==0 & Q27==2 ~ 5,
 Q24==0 & Q26==1 & Q27==1 ~ 10,
 Q24==0 & Q26==2 & Q27==1 ~ 10,
 Q24==0 & Q26==0 & Q27==1 ~ 10));summary.factor(mydata$NEWMED)
NEWMED_miss_data <- mydata %>% mutate(NEWMED=car::recode(NEWMED,"NA=99")) %>%
filter(NEWMED==99)
table1::table1(~ as.factor(Q26)   + as.factor(Q27), data = NEWMED_miss_data, overall="Total
sample") # checking if NA in parcelled variable have only missing it the original variables (coded as 0)
# Crosstab of original items and new variable - quality check
mydata <- mydata %>% mutate(Q24=car::recode(Q24,"0=NA; 1='Yes'; 2='Jump'"))
mydata <- mydata %>% mutate(Q26=car::recode(Q26,"0=NA; 1='Yes'; 2='Jump'"))
mydata <- mydata %>% mutate(Q27=car::recode(Q27,"0=NA; 1=10; 2=5; 3=0; 4=0"))
table1::table1(~ as.factor(Q24)   + as.factor(Q26) + as.factor(Q27)   | as.factor(NEWMED), data =
mydata, overall="Total sample")


# CHECKMED
mydata <- mydata %>% mutate(Q24=car::recode(Q24,"NA=0; 'Yes'=1; 'Jump'=2"))
mydata <- mydata %>% mutate(Q28=car::recode(Q28,"NA=0"))
mydata <- mydata %>% mutate(Q29=car::recode(Q29,"NA=0"))
mydata <- mydata %>% mutate(CHECKMED_miss = case_when(Q24==0 & Q28==0 & Q29==0 ~
"Full miss",
                                    TRUE        ~        "Not        full        miss"));
summary.factor(mydata$CHECKMED_miss)
mydata <- mydata %>% mutate(CHECKMED = case_when(
 CHECKMED_miss=="Full miss" ~ NA_real_,
 Q24==1 & Q28==2  ~ NA_real_,
 Q24==2 ~ NA_real_,
 Q24==1 & Q28==1 & Q29==2 ~ 0,
 Q24==1 & Q28==0 & Q29==2 ~ 0,
 Q24==1 & Q28==1 & Q29==1 ~ 10,
 Q24==1 & Q28==0 & Q29==1 ~ 10,
```

```
  Q24==0 & Q28==1 & Q29==2 ~ 0,
  Q24==0 & Q28==2 & Q29==2 ~ 0,
  Q24==0 & Q28==0 & Q29==2 ~ 0,
  Q24==0 & Q28==1 & Q29==1 ~ 10,
  Q24==0 & Q28==2 & Q29==1 ~ 10,
  Q24==0 & Q28==0 & Q29==1 ~ 10));summary.factor(mydata$CHECKMED)
```
CHECKMED_miss_data   <-   mydata   %>%
mutate(CHECKMED=car::recode(CHECKMED,"NA=99")) %>% filter(CHECKMED==99)
table1::table1(~ as.factor(Q24) + as.factor(Q28) + as.factor(Q29), data = CHECKMED_miss_data,
overall="Total sample") # checking if NA in parcelled variable have only missing it the original
variables (coded as 0)
# Crosstab of original items and new variable - quality check
mydata <- mydata %>% mutate(Q24=car::recode(Q24,"0=NA; 1='Yes'; 2='Jump'"))
mydata <- mydata %>% mutate(Q28=car::recode(Q28,"0=NA; 1='Yes'; 2='Jump'"))
mydata <- mydata %>% mutate(Q29=car::recode(Q29,"0=NA; 1=10; 2=0"))
table1::table1(~ as.factor(Q24) + as.factor(Q28) + as.factor(Q29) | as.factor(CHECKMED), data =
mydata, overall="Total sample")

# TREAT
mydata <- mydata %>% mutate(Q30=car::recode(Q30,"NA=0"))
mydata <- mydata %>% mutate(Q31=car::recode(Q31,"NA=0"))
mydata <- mydata %>% mutate(Q32=car::recode(Q32,"NA=0"))
mydata <- mydata %>% mutate(TREAT_miss = case_when(Q30==0 & Q31==0 & Q32==0 ~ "Full
miss",
                           TRUE ~ "Not full miss")); summary.factor(mydata$TREAT_miss)
mydata <- mydata %>% mutate(TREAT = case_when(
  TREAT_miss=="Full miss" ~ NA_real_,
  Q30==2|Q30==3 ~ NA_real_,
  Q30==1 & Q31==3 & Q32==3 ~ 0,
  Q30==0 & Q31==3 & Q32==3 ~ 0,
  Q30==1 & Q31==0 & Q32==3 ~ 0,
  Q30==0 & Q31==0 & Q32==3 ~ 0,
  Q30==1 & Q31==3 & Q32==0 ~ 0,
  Q30==0 & Q31==3 & Q32==0 ~ 0,
  Q30==1 & Q31==2 & Q32==3 ~ 5,
  Q30==0 & Q31==2 & Q32==3 ~ 5,
  Q30==1 & Q31==3 & Q32==2 ~ 5,
  Q30==0 & Q31==3 & Q32==2 ~ 5,
  Q30==1 & Q31==2 & Q32==0 ~ 5,
  Q30==0 & Q31==2 & Q32==0 ~ 5,
  Q30==1 & Q31==0 & Q32==2 ~ 5,
  Q30==0 & Q31==0 & Q32==2 ~ 5,
  Q30==1 & Q31==1 & Q32==3 ~ 10,
  Q30==0 & Q31==1 & Q32==3 ~ 10,
  Q30==1 & Q31==3 & Q32==1 ~ 10,
  Q30==0 & Q31==3 & Q32==1 ~ 10,
  Q30==1 & Q31==1 & Q32==0 ~ 10,
  Q30==0 & Q31==1 & Q32==0 ~ 10,
  Q30==1 & Q31==0 & Q32==1 ~ 10,
  Q30==0 & Q31==0 & Q32==1 ~ 10,
  Q30==1 & Q31==2 & Q32==2 ~ 10,
  Q30==0 & Q31==2 & Q32==2 ~ 10,
  Q30==1 & Q31==1 & Q32==2 ~ 15,
  Q30==0 & Q31==1 & Q32==2 ~ 15,
  Q30==1 & Q31==2 & Q32==1 ~ 15,
```

```
  Q30==0 & Q31==2 & Q32==1 ~ 15,
  Q30==1 & Q31==1 & Q32==1 ~ 20,
  Q30==0 & Q31==1 & Q32==1 ~ 20)); summary.factor(mydata$TREAT)
TREAT_miss_data <- mydata %>% mutate(TREAT=car::recode(TREAT,"NA=99")) %>%
filter(TREAT==99)
table1::table1(~ as.factor(Q30) + as.factor(Q31) + as.factor(Q32), data = TREAT_miss_data,
overall="Total sample")
mydata <- mydata %>% mutate(Q30=car::recode(Q30,"0=NA; 1='Yes'; 2='Jump'; 3='Jump'"))
mydata <- mydata %>% mutate(Q31=car::recode(Q31,"0=NA; 1=10; 2=5; 3=0"))
mydata <- mydata %>% mutate(Q32=car::recode(Q32,"0=NA; 1=10; 2=5; 3=0"))
table1::table1(~ as.factor(Q30) + as.factor(Q31) + as.factor(Q32) | as.factor(TREAT), data = mydata,
overall="Total sample")


mydata<-mydata %>% mutate(SW_Q33 = case_when(Q33==1 ~ 10,Q33==2 ~ 5, Q33==3 ~ 0))
mydata<-mydata %>% mutate(SW_Q34 = case_when(Q34==1 ~ 10,Q34==2 ~ 5, Q34==3 ~ 0))
mydata<-mydata %>% mutate(SW_Q35 = case_when(Q35==1 ~ 10,Q35==2 ~ 5, Q35==3 ~ 0))
mydata<-mydata %>% mutate(SW_Q36 = case_when(Q36==1 ~ 10,Q36==2 ~ 5, Q36==3 ~ 0))
mydata<-mydata %>% mutate(SW_Q37 = case_when(Q37==1 ~ 10,Q37==2 ~ 5, Q37==3 ~ 0,
Q37==4 ~0))
mydata<-mydata %>% mutate(SW_Q38 = case_when(Q38==1 ~ 10,Q38==2 ~ 5, Q38==3 ~ 0))
mydata<-mydata %>% mutate(SW_Q39 = case_when(Q39==1 ~ 10,Q39==2 ~ 5, Q39==3 ~ 0))
mydata<-mydata %>% mutate(OVERALL_Q40 = case_when(Q40>=0 & Q40<=3 ~ 0,
                          Q40>=4 & Q40<=7 ~ 5,
                          Q40>=8 & Q40<=10 ~ 10))
mydata<-mydata %>% mutate(OVERALL_Q41 = case_when(Q41==1 ~ 10,Q41==2 ~ 5, Q41==3 ~
0))

# Selecting scored processed variables to describe
NHS_data <- mydata %>% dplyr::select(STAFF_Q3:STAFF_Q6, ORGA,
PLAN,REV,CHANGE,CRISIS,CURRMED,NEWMED,CHECKMED,TREAT,SW_Q33:OVERALL
_Q41)
# Describing scored variables
table1::table1(~ as.factor(STAFF_Q3) + as.factor(STAFF_Q4) + as.factor(STAFF_Q5) +
as.factor(STAFF_Q6) + as.factor(ORGA) + as.factor(PLAN) + as.factor(REV) +
as.factor(CHANGE) + as.factor(CRISIS) + as.factor(CURRMED) + as.factor(NEWMED) +
as.factor(CHECKMED) + as.factor(CHECKMED) + as.factor(TREAT) + as.factor(SW_Q33)+
as.factor(SW_Q34)+ as.factor(SW_Q35)+ as.factor(SW_Q36)+ as.factor(SW_Q37)+
as.factor(SW_Q38)+ as.factor(SW_Q39)+ as.factor(OVERALL_Q40)+ as.factor(OVERALL_Q41),
data = NHS_data, overall="Total sample")
```


#Export to MPlus
``` {r export to process in MPlus, message=FALSE, warning=FALSE, include=FALSE, echo=FALSE}
#export
#Adding random variable
NHS_data$random <- base::sample(11373, size = nrow(NHS_data), set.seed(seed = 1), replace =
FALSE)
#Splitting to EFA and CFA samples
efa_exp_data<-dplyr::filter(NHS_data, random>=5686)
cfa_exp_data<-dplyr::filter(NHS_data, random<5686)
#Drop random variable and processing variables to factor analysis
##EFA
efa_exp_data <- efa_exp_data %>% mutate_all(~as.character(.) %>% as.numeric()) %>%
replace_na(list( STAFF_Q3=999 , STAFF_Q4=999 , STAFF_Q5=999 , STAFF_Q6=999 , ORGA=999
, PLAN=999 , REV=999, CHANGE=999, CRISIS=999 , CURRMED=999 , NEWMED=999 ,

```
CHECKMED=999 , CHECKMED=999 , TREAT=999, SW_Q33=999, SW_Q34=999, SW_Q35=999,
SW_Q36=999,   SW_Q37=999,   SW_Q38=999,   SW_Q39=999,   OVERALL_Q40=999,
OVERALL_Q41=999)) %>% dplyr::select(-random)
##CFA
cfa_exp_data<- cfa_exp_data %>% mutate_all(~as.character(.) %>% as.numeric()) %>%
replace_na(list(STAFF_Q3=999 , STAFF_Q4=999 , STAFF_Q5=999 , STAFF_Q6=999 , ORGA=999
, PLAN=999 , REV=999, CHANGE=999, CRISIS=999 , CURRMED=999 , NEWMED=999 ,
CHECKMED=999 , CHECKMED=999 , TREAT=999, SW_Q33=999, SW_Q34=999, SW_Q35=999,
SW_Q36=999,   SW_Q37=999,   SW_Q38=999,   SW_Q39=999,   OVERALL_Q40=999,
OVERALL_Q41=999)) %>% dplyr::select(-random)
#Export
sjlabelled::write_spss(efa_exp_data, "NHS_efa_data_parcell.sav")
sjlabelled::write_spss(cfa_exp_data, "NHS_cfa_data_parcell.sav")
```
```

MPlus EFA code

TITLE: NHS EFA in half dataset from 2017 - first iteraction;

DATA: FILE IS NHS_efa_data_parcell.dat;
FORMAT=FREE;

VARIABLE: NAMES ARE
STAFF_Q3 STAFF_Q4 STAFF_Q5 STAFF_Q6
ORGA PLAN REV CHANGE
CRISIS CURRMED NEWMED CHECKMED
TREAT SW_Q33 SW_Q34 SW_Q35
SW_Q36 SW_Q37 SW_Q38 SW_Q39
Q40_OVERALL Q41_OVERALL;

MISSING ARE ALL (999);

!IDVARIABLE IS id;

USEVARIABLES ARE
STAFF_Q3 STAFF_Q4 STAFF_Q5 STAFF_Q6
ORGA PLAN REV CHANGE
CRISIS CURRMED NEWMED CHECKMED
TREAT SW_Q33 SW_Q34 SW_Q35
SW_Q36 SW_Q37 SW_Q38 SW_Q39
Q40_OVERALL Q41_OVERALL;

CATEGORICAL ARE
STAFF_Q3 STAFF_Q4 STAFF_Q5 STAFF_Q6
ORGA PLAN REV CHANGE
CRISIS CURRMED NEWMED CHECKMED
TREAT SW_Q33 SW_Q34 SW_Q35
SW_Q36 SW_Q37 SW_Q38 SW_Q39
Q40_OVERALL Q41_OVERALL;

ANALYSIS:
COVERAGE=.05;
TYPE = EFA 1 10;
ROTATION is GEOMIN;

PLOT: type = plot2;

OUTPUT: SAMPSTAT;

MPlus CFA code

TITLE: NHS CFA in half dataset from 2017;

DATA: FILE IS NHS_cfa_data_parcell.dat;
FORMAT=FREE;

VARIABLE: NAMES ARE
Q3 Q4 Q5 Q6
ORGA PLAN REV CHANGE
CRISIS CURRMED NEWMED CHECKMED
TREAT Q33 Q34 Q35
Q36 Q37 Q38 Q39
Q40 Q41;

MISSING ARE ALL (999);

USEVARIABLES ARE
Q3 Q4 Q5 Q6
ORGA PLAN REV CHANGE
CRISIS CURRMED NEWMED CHECKMED
TREAT Q33 Q34 Q35
Q36 Q37 Q38 Q39
Q40 Q41;

CATEGORICAL ARE
Q3 Q4 Q5 Q6
ORGA PLAN REV CHANGE
CRISIS CURRMED NEWMED CHECKMED
TREAT Q33 Q34 Q35
Q36 Q37 Q38 Q39
Q40 Q41;

ANALYSIS:
COVERAGE=.05;

MODEL:
Rel_staff BY Q3-Q6* Q37* Q39* Q40-Q41*;
Organize BY ORGA-CRISIS* CHECKMED*;
Treatment BY CURRMED* NEWMED* TREAT*;
Support BY Q33-Q36* Q38*;

Rel_staff-Support@1;

PLOT: TYPE is PLOT3;

OUTPUT: STDYX SAMPSTAT;

MPlus CFA reliability index code

TITLE: NHS CFA Reliability calculation in half dataset from 2017;

DATA: FILE IS NHS_cfa_data_parcell.dat;
FORMAT=FREE;

VARIABLE: NAMES ARE
Q3 Q4 Q5 Q6
ORGA PLAN REV CHANGE
CRISIS CURRMED NEWMED CHECKMED
TREAT Q33 Q34 Q35
Q36 Q37 Q38 Q39
Q40 Q41;

MISSING ARE ALL (999);

USEVARIABLES ARE
Q3 Q4 Q5 Q6
ORGA PLAN REV CHANGE
CRISIS CURRMED NEWMED CHECKMED
TREAT Q33 Q34 Q35
Q36 Q37 Q38 Q39
Q40 Q41;

CATEGORICAL ARE
Q3 Q4 Q5 Q6
ORGA PLAN REV CHANGE
CRISIS CURRMED NEWMED CHECKMED
TREAT Q33 Q34 Q35
Q36 Q37 Q38 Q39
Q40 Q41;

ANALYSIS:
COVERAGE=.05;
PARAMETERIZATION=THETA;

MODEL:
MODEL:
Rel_staff BY Q3-Q6* Q37* Q39* Q40-Q41* (CW1-CW8);
Organize BY ORGA-CRISIS* CHECKMED* (OC1-OC6);
Treatment BY CURRMED* NEWMED* TREAT* (TT1-TT3);
Support BY Q33-Q36* Q38* (SW1-SW5);

Rel_staff-Support@1;

Q3* (E1);
Q4* (E2);
Q5* (E3);
Q6* (E4);

Q37* (E5);
Q39* (E6);
Q40* (E7);
Q41* (E8);
ORGA* (E9);
PLAN* (E10);
REV* (E11);
CHANGE* (E12);
CRISIS* (E13);
CHECKMED* (E14);
CURRMED* (E15);
NEWMED* (E16);
TREAT* (E17);
Q33* (E18);
Q34* (E19);
Q35* (E20);
Q36* (E21);
Q38* (E22);

MODEL CONSTRAINT:
E1 = 1-(CW1**2);
E2 = 1-(CW2**2);
E3 = 1-(CW3**2);
E4 = 1-(CW4**2);
E5 = 1-(CW5**2);
E6 = 1-(CW6**2);
E7 = 1-(CW7**2);
E8 = 1-(CW8**2);
E9 = 1-(OC1**2);
E10 = 1-(OC2**2);
E11 = 1-(OC3**2);
E12 = 1-(OC4**2);
E13 = 1-(OC5**2);
E14 = 1-(OC6**2);
E15 = 1-(TT1**2);
E16 = 1-(TT2**2);
E17 = 1-(TT3**2);
E18 = 1-(SW1**2);
E19 = 1-(SW2**2);
E20 = 1-(SW3**2);
E21 = 1-(SW4**2);
E22 = 1-(SW5**2);

NEW (OMEGA_CW OMEGA_OC OMEGA_TT OMEGA_SW
SUM_FL_CW SUM_FL_OC SUM_FL_TT SUM_FL_SW
SUM_E_CW SUM_E_OC SUM_E_TT SUM_E_SW
SUM_TOTAL ECV_CW ECV_OC ECV_TT ECV_SW);

```
SUM_FL_CW = (CW1+CW2+CW3+CW4+CW5+CW6+CW7+CW8)**2;
SUM_E_CW = (E1+E2+E3+E4+E5+E6+E7+E8);
OMEGA_CW = SUM_FL_CW/(SUM_FL_CW + SUM_E_CW);

SUM_FL_OC = (OC1+OC2+OC3+OC4+OC5+OC6)**2;
SUM_E_OC = (E9+E10+E11+E12+E13+E14);
OMEGA_OC = SUM_FL_OC/(SUM_FL_OC + SUM_E_OC);

SUM_FL_TT = (TT1+TT2+TT3)**2;
SUM_E_TT = (E15+E16+E17);
OMEGA_TT = SUM_FL_TT/(SUM_FL_TT + SUM_E_TT);

SUM_FL_SW = (SW1+SW2+SW3+SW4+SW5)**2;
SUM_E_SW = (E18+E19+E20+E21+E22);
OMEGA_SW = SUM_FL_SW/(SUM_FL_SW + SUM_E_SW);

SUM_TOTAL = SUM_FL_CW + SUM_FL_OC + SUM_FL_TT + SUM_FL_SW;

ECV_CW = ((CW1**2)+(CW2**2)+(CW3**2)+(CW4**2)+(CW5**2)+
(CW6**2)+(CW7**2)+(CW8**2))/
((CW1**2)+(CW2**2)+(CW3**2)+(CW4**2)+(CW5**2)+
(CW6**2)+(CW7**2)+(CW8**2)+(OC1**2)+
(OC2**2)+(OC3**2)+(OC4**2)+(OC5**2)+(OC6**2)+
(TT1**2)+(TT2**2)+(TT3**2)+
(SW1**2)+(SW2**2)+(SW3**2)+(SW4**2)+(SW5**2));

ECV_OC = ((OC1**2)+(OC2**2)+(OC3**2)+(OC4**2)+
(OC5**2)+(OC6**2))/
((CW1**2)+(CW2**2)+(CW3**2)+(CW4**2)+(CW5**2)+
(CW6**2)+(CW7**2)+(CW8**2)+(OC1**2)+
(OC2**2)+(OC3**2)+(OC4**2)+(OC5**2)+(OC6**2)+
(TT1**2)+(TT2**2)+(TT3**2)+
(SW1**2)+(SW2**2)+(SW3**2)+(SW4**2)+(SW5**2));

ECV_TT = ((TT1**2)+(TT2**2)+(TT3**2))/
((CW1**2)+(CW2**2)+(CW3**2)+(CW4**2)+(CW5**2)+
(CW6**2)+(CW7**2)+(CW8**2)+(OC1**2)+
(OC2**2)+(OC3**2)+(OC4**2)+(OC5**2)+(OC6**2)+
(TT1**2)+(TT2**2)+(TT3**2)+
(SW1**2)+(SW2**2)+(SW3**2)+(SW4**2)+(SW5**2));

ECV_SW = ((SW1**2)+(SW2**2)+(SW3**2)+(SW4**2)+(SW5**2))/
((CW1**2)+(CW2**2)+(CW3**2)+(CW4**2)+(CW5**2)+
(CW6**2)+(CW7**2)+(CW8**2)+(OC1**2)+
(OC2**2)+(OC3**2)+(OC4**2)+(OC5**2)+(OC6**2)+
(TT1**2)+(TT2**2)+(TT3**2)+
(SW1**2)+(SW2**2)+(SW3**2)+(SW4**2)+(SW5**2));

OUTPUT: STDYX;
```

MPlus CFA second-order model code

TITLE: NHS CFA 2nd order model in half dataset from 2017;

DATA: FILE IS NHS_cfa_data_parcell.dat;
FORMAT=FREE;

VARIABLE: NAMES ARE
Q3 Q4 Q5 Q6
ORGA PLAN REV CHANGE
CRISIS CURRMED NEWMED CHECKMED
TREAT Q33 Q34 Q35
Q36 Q37 Q38 Q39
Q40 Q41;

MISSING ARE ALL (999);

USEVARIABLES ARE
Q3 Q4 Q5 Q6
ORGA PLAN REV CHANGE
CRISIS CURRMED NEWMED CHECKMED
TREAT Q33 Q34 Q35
Q36 Q37 Q38 Q39
Q40 Q41;

CATEGORICAL ARE
Q3 Q4 Q5 Q6
ORGA PLAN REV CHANGE
CRISIS CURRMED NEWMED CHECKMED
TREAT Q33 Q34 Q35
Q36 Q37 Q38 Q39
Q40 Q41;

ANALYSIS:
COVERAGE=.05;

MODEL:
Rel_staff BY Q3-Q6* Q37* Q39* Q40-Q41*;
Organize BY ORGA-CRISIS* CHECKMED*;
Treatment BY CURRMED* NEWMED* TREAT*;
Support BY Q33-Q36* Q38*;

General BY Rel_staff-Support*;

Rel_staff-Support@1;
General@1;

OUTPUT: STDYX;