

## SUPPLEMENTARY MATERIAL

**Table S1: Outcomes by treatment arm at 3 months (Intention to treat analysis)**

Characteristic	Randomised groups	
	tCBT (n=500)	Usual care (n=496)
Primary Outcome	N (%)	
Chronic widespread pain		
No	312 (82.1)	368 (83.1)
Yes	68 (17.9)	75 (16.9)
Secondary Outcome		
Global impression of change		
Very much better	14 (3.7)	15 (3.4)
Much better	76 (20.1)	48 (10.9)
A little better	132 (34.9)	91 (20.6)
No change	100 (26.5)	165 (37.3)
A little worse	45 (11.9)	98 (22.2)
Much worse	11 (2.9)	23 (5.2)
Very much worse	0	2 (0.5)
Pain Reported		
No	72 (18.6)	59 (13.3)
Yes	308 (81.1)	384 (86.7)
CWP risk profile		
Somatic symptoms score		
0	224 (59.1)	239 (54.1)
1	96 (25.3)	127 (28.7)
2-5	59 (15.6)	76 (17.2)
Illness Behaviour Score Mean (SD)[n*]	8.96 (3.99) [379]	9.21 (3.86) [441]
Sleep problems score Mean (SD) [n]	8.54 (4.99) [377]	9.16 (5.08) [439]
Psychological Distress (GHQ score)		
0	224 (59.9)	207 (47.2)
1	50 (13.4)	63 (14.4)
2-5	65 (17.4)	96 (21.9)
6-12	35 (9.4)	73 (16.6)
	Mean (SD) [n]	Mean (SD) [n]
Chalder Fatigue Score	12.2 (4.2) [372]	13.6 (4.2) [440]
	Median (IQR) [n]	Median (IQR) [n]
Quality of Life (EQ-5D utility score)	0.74 (0.67 - 0.84) [379]	0.74 (0.65 - 0.84) [442]
ICECAP-A	0.89 (0.80 - 0.95) [378]	0.89 (0.78 - 0.95) [440]
Fibromyalgia Research Criteria		
WPI	3 (1 - 4) [370]	3 (1 - 4) [432]
SSS	3 (2 - 5) [373]	4 (2 - 5) [433]

EQ-5D-5L: Euroqol questionnaire – five dimensions – five levels; FRC: fibromyalgia research criteria; GHQ: general health questionnaire; ICECAP-A: ICEpop CAPability measure for Adults; IQR: interquartile range; SD: standard deviation; SSS: symptom severity scale; tCBT: telephone cognitive behavioural therapy; WPI: widespread pain index. \* The number of persons for whom a scale score could be calculated

**Table S2: Outcomes by treatment arm at 24 months (Intention to treat analysis)**

Characteristic	Randomised groups	
	tCBT (n=500)	Usual care (n=496)
Primary Outcome	N (%)	
Chronic widespread pain		
No	322 (80.4)	352 (77.7)
Yes	78 (19.6)	101 (22.3)
Secondary Outcome		
Global impression of change		
Very much better	14 (3.7)	15 (3.4)
Much better	76 (20.1)	48 (10.9)
A little better	132 (34.9)	91 (20.6)
No change	100 (26.5)	165 (33.3)
A little worse	45 (11.9)	98 (22.2)
Much worse	11 (2.9)	23 (5.2)
Very much worse	0	2 (0.5)
Pain Reported		
No	95 (23.8)	77 (17.0)
Yes	305 (76.3)	376 (83.0)
CWP Risk Profile		
Somatic symptoms score		
0	184 (59.4)	219 (58.1)
1	82 (26.5)	90 (23.9)
2-5	44 (14.2)	68 (18.0)
Illness behaviour score Mean (SD)[n*]	7.75 (4.14) [310]	8.95 (4.18) [377]
Sleep problems score Mean (SD) [n]	8.45 (5.3) [309]	9.06 (5.0) [376]
Psychological Distress (GHQ score)		
0	168 (54.2)	178 (47.3)
1	36 (11.6)	42 (11.2)
2-5	67 (21.6)	91 (24.2)
6-12	39 (12.6)	65 (17.3)
	Mean (SD) [n]	Mean (SD) [n]
Chalder Fatigue Score	13.0 (4.3) [309]	13.9 (4.4) [377]
	Median (IQR) [n]	Median (IQR) [n]
Quality of Life (EQ-5D utility score)	0.74 (0.68 – 0.84) [313]	0.74 (0.65 – 0.84) [386]
ICECAP-A	0.91 (0.80 – 0.96) [311]	0.89 (0.79 – 0.95) [386]
Fibromyalgia Research Criteria	Median (IQR) [n]	Median (IQR) [n]
WPI	2 (1 – 4) [306]	2.5 (1 – 4) [370]
SSS	3 (2 – 5) [309]	4 (2 – 5) [376]

EQ-5D-5L: Euroqol questionnaire – five dimensions – five levels; FRC: fibromyalgia research criteria; GHQ: general health questionnaire; ICECAP-A: ICEpop CAPability measure for Adults; IQR: interquartile range; SD: standard deviation; SSS: symptom severity scale; tCBT: telephone cognitive behavioural therapy; WPI: widespread pain index. \* The number of persons for whom a scale score could be calculated

**Table S3: Unit costs applied to value health care resource use (£, 2017/18 UK prices)**

Resource	Unit	Source	Basis of estimate	Cost (£)
<i>NHS health care resource use</i>				
GP	Visit	Curtis 2018	9.22 minutes consultation, including qualification and direct staff	37
Practice nurse	Visit	Curtis 2015, Curtis 2018	Surgery consultation 15.5 minutes	11
Community physiotherapist	Visit	Curtis 2018	Assumes 30 minutes consultation	17
Other community	Visit	Curtis 2018	Assumes cost of community physiotherapist	17
CT – Chiropractor	Visit	Curtis 2018	Assumes cost of community physiotherapist	17
CT – Osteopath	Visit	Curtis 2018	Assumes cost of community physiotherapist	17
CT – Other	Visit	Curtis 2018	Assumes cost of community physiotherapist	17
Outpatient – Rheumatology	Visit	NHS Reference Costs 2017/18	WF01A Non-Admitted Face to Face Attendance, Follow-up, 410 Rheumatology, WF01B Non-Admitted Face to Face Attendance, Follow-up First, 410 Rheumatology (weighted mean cost over these two categories)	150
Outpatient – Orthopaedics	Visit	NHS Reference Costs 2017/18	WF01A Non-Admitted Face to Face Attendance, Follow-up, 110 Trauma & Orthopaedics, WF01B, Non-Admitted Face to Face Attendance, First, 110 Trauma & Orthopaedics (weighted mean cost over these two categories)	125
Outpatient – Other	Visit	NHS Reference Costs 2017/18	WF01A Non-Admitted Face to Face Attendance, Follow-up, 191 Pain Management, WF01B Non-Admitted Face to Face Attendance, First, 191 Pain Management (weighted mean cost over these two categories)	149
Other HCP – Physiotherapist	Visit	NHS Reference Costs 2017/18	WF01A Non-Admitted Face to Face Attendance, Follow-up, 650 Physiotherapy, WF01B Non-Admitted Face to Face Attendance, First, 650 Physiotherapy (weighted mean cost over these two categories)	55
Other HCP – Other	Visit	NHS Reference Costs	Assumes cost of a physiotherapy attendance	55

		2017/18		
Emergency department	Visit	NHS Reference Costs 2017/18	180 Accident & Emergency (weighted mean over consultant led and non-consultant led)	136
Non-elective admission	Day	NHS Reference Costs 2017/18	HD21 Soft Tissue Disorders (mean cost over CC Score 0-2 and CC Score 3-5)	315
Planned (elective) admission	Day	NHS Reference Costs 2017/18	HD21 Soft Tissue Disorders (mean cost over CC Score 0-2 and CC Score 3-5)	377
<i>Private (non-NHS) treatment resource use</i>				
HCP – Doctor	Visit	UK Beam Trial	Mean cost of private specialist visit - uprated	183
HCP – Physiotherapist	Visit	BUPA	Mean cost of private physiotherapist outpatient attendance	47
HCP – Chiropractor	Visit	Wonderling et al 2004	Mean cost of a private visit chiropractor or osteopath – uprated	36
HCP – Osteopath	Visit	Wonderling et al 2004	Mean cost of a private visit chiropractor or osteopath – uprated	36
HCP – Other (e.g. acupuncturist)	Visit	BUPA	Assumes mean cost of a private physiotherapist outpatient attendance	47
HCP – Other	Visit	BUPA	Assumes mean cost of a private physiotherapist outpatient attendance	47
Hospital admission	Day	UK Beam Trial	Mean cost of private hospital admission/day – uprated	602

GP = General practitioner; HCP = Health care professional; CT=Complementary therapist

**Table S4: Unadjusted mean resource use and costs per patient over 24 months follow-up**

Resource use item	Usual care, n=496			tCBT, n=500		
	N	Mean resource use (SD)	Mean cost, £ (SD)	N	Mean resource use (SD)	Mean cost, £ (SD)
<i>Intervention</i>						
tCBT	0	0	0	500	138.74 (114.08) <sup>1</sup>	270.19 (209.74) <sup>2</sup>
<i>NHS primary care</i>						
GP visits	343	8.61 (8.31)	318.44 (307.38)	277	7.51 (8.10)	277.97 (299.86)
Practice nurse visits	343	4.11 (5.69)	45.19 (62.57)	277	5.23 (11.87)	57.54 (130.61)
Community physiotherapist visits	343	2.26 (5.43)	38.46 (92.39)	277	1.90 (3.12)	32.22 (64.83)
Other community health care professional visits	343	0.70 (1.72)	11.90 (29.27)	277	1.20 (3.12)	20.38 (53.99)
Chiropractor visits	343	0.66 (3.64)	11.30 (61.89)	277	0.59 (4.51)	10.06 (76.65)
Osteopath visits	343	0.57 (3.06)	9.62 (51.97)	277	0.59 (3.27)	10.00 (55.66)
Other complementary therapist visits	343	2.14 (7.11)	36.43 (120.98)	277	2.31 (6.97)	39.34 (118.53)
Total NHS primary care costs	343	-	471.34 (447.94)	277	-	447.51 (434.82)
<i>NHS hospital care</i>						
Non-elective admission days	343	1.24 (6.01)	474.61 (2,178.77)	277	0.81 (4.86)	311.43 (1,752.32)
Elective admission days	343	0.98 (2.76)	369.61 (1,042.04)	277	0.78 (2.64)	293.98 (997.85)
Outpatient rheumatology visits	335	0.21 (0.95)	30.09 (132.36)	272	0.39 (1.46)	54.04 (203.83)
Outpatient orthopaedics visits	335	0.80 (1.80)	92.42 (206.56)	272	0.67 (1.51)	77.37 (173.08)
Other outpatient clinic visits	335	2.86 (4.63)	408.51 (662.79)	273	2.27 (3.97)	324.24 (567.88)
Hospital physiotherapist visits	343	1.14 (2.71)	65.95 (157.40)	277	1.49 (3.69)	86.69 (214.00)
Other hospital health care professional visits	343	1.26 (2.83)	72.88 (164.27)	277	1.14 (2.46)	66.17 (142.82)
Total NHS hospital care costs	335	-	1,503.92 (2,731.09)	272	-	1,186.65 (2,425.09)
<i>Private care</i>						
Admission days	343	0.12 (0.71)	70.02 (426.10)	277	0.14 (0.79)	82.58 (473.55)
Private doctor visits	343	0.39 (1.96)	72.03 (357.87)	277	0.37 (1.12)	67.39 (205.62)