

## Supplementary Online Content

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**eAppendix.** Cost data.

**eTable.** NHS resource use and costs by treatment group at 9 months.

This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix. Cost data

### **Data collection**

Patient-level data on the number of sessions and contact time with therapists were collected from therapists'/fitness instructors' records. Contact time was costed using a per-hour patient contact cost for therapists/fitness instructors based on annual salary costs, employer on costs, and capital and overhead costs associated with employing therapists/fitness instructors in a health service setting.<sup>1</sup> It was assumed that in routine practice therapists/fitness instructors would spend 50% and 60% of their annual work time respectively in direct contact with patients. Since individual contacts with the fitness instructors were not logged at one of the participating centres, the average per patient cost of fitness instructor time (from the other centre) was used for these patients

Costs associated with therapist training and supervision, and the production of printed materials, were estimated on a per-session and per-patient basis, respectively, and applied to individual patients accordingly. Since all patients who received the exercise intervention were given gym membership, these costs were also included. The initial time investment costs associated with training therapists/fitness instructors and developing written materials for the respective interventions were spread across all the patients receiving these interventions. Health service resource use over the follow-up period was collected via patient questionnaires at 6 months and 9 months.<sup>2,3</sup>

### **Analysis**

Economic analyses were conducted from a health service perspective. Quality adjusted life years (QALYs) were estimated using baseline, 6- and 9-month EuroQol EQ-5D.<sup>4</sup> Multivariate regression analysis estimated differences in mean costs and QALYs between the three active treatment groups and TAU.<sup>5</sup> A generalized linear model, with Poisson family distribution and a power link function, was specified to account for the skewed nature of the cost data. Cost-effectiveness acceptability curves were constructed using non-parametric bootstrapping<sup>6</sup> to determine the probability of the alternative interventions being considered cost-effective at different ceiling ratios representing society's willingness to pay (WTP) per extra QALY (£20,000-£30,000 per QALY are the commonly applied ceiling ratios in the UK). The analysis was conducted using complete case data at 6 and 9 months. Multiple imputation analyses assessed sensitivity to missing data.

eTable. NHS Resource Use and Costs by Treatment Group at 9 Months<sup>a</sup>

<b>NHS resource use and costs by treatment group at 9 months (based on patients with complete cost and QALY data)</b>				
	<b>TAU (n=65)</b>	<b>TCBT (n=61)</b>	<b>Exercise (n=71)</b>	<b>Combined (n=76)</b>
<b>Initial intervention costs</b>				
Number of sessions (CBT)	-	6.82 (2.72)	-	7.17 (2.30)
Number of sessions (Exercise)	-	-	5.95 (1.96)	5.82 (1.93)
Time with CBT therapist (mins)	-	239.32 (131.14)	-	239.06 (102.50)
Time with exercise therapist (mins)	-	-	520.00 (176.26)	512.33 (176.06)
Total intervention costs (including supervision, training, material and gym membership costs)	-	<b>£268 (127)</b>	<b>£489 (100)</b>	<b>£752 (157)</b>
<b>Follow-up resource use and costs</b>				
GP visits	3.58 (3.45)	3.22 (2.92)	3.68 (2.82)	3.15 (3.19)
GP nurse visits	1.17 (1.55)	1.92 (3.04)	1.28 (1.62)	1.36 (1.91)
GP physiotherapy visits	0.35 (1.21)	0.25 (0.81)	0.98 (4.26)	0.36 (1.47)
GP other visits	0.42 (1.38)	0.16 (0.82)	0.31 (1.93)	0.08 (0.42)
Hospital admission days	0.69 (2.57)	0.59 (2.03)	0.52 (1.53)	0.58 (1.91)
Outpatient attendances (doctor)	1.19 (2.08)	1.15 (1.79)	1.72 (3.22)	1.38 (1.86)
NHS Physio appointments	1.36 (0.41)	0.66 (1.84)	0.26 (1.00)	1.80 (4.6)
Other NHS visits	0.41 (0.72)	0.55 (1.93)	0.58 (1.07)	0.69 (2.54)
Primary care costs	£156 (149)	£141 (131)	£170 (148)	£133 (130)
NHS inpatient costs	£430 (1545)	£503 (1847)	£388 (1138)	£403 (1125)
NHS outpatient costs	£130 (224)	£132 (208)	£173 (309)	£150 (204)
NHS physio/other visit costs	£88 (163)	£80 (216)	£74 (122)	£134 (293)
Total follow-up costs	£804 (1824)	£855 (2192)	£805 (1355)	£819 (1359)
<b>Total costs</b>	<b>£804 (1824)</b>	<b>£1,123 (2199)</b>	<b>£1,294 (1357)</b>	<b>£1,571 (1345)</b>

<b>EQ-5D data</b>				
Baseline	0.692 (0.175)	0.727 (0.161)	0.710 (0.183)	0.682
6 months	0.701 (0.245)	0.743 (0.245)	0.727 (0.197)	0.741
9 months	0.677 (0.235)	0.750 (0.225)	0.714 (0.227)	0.714
<b>Total QALYs</b>	<b>0.520</b> <b>(0.139)</b>	<b>0.554</b> <b>(0.143)</b>	<b>0.539</b> <b>(0.122)</b>	<b>0.538</b> <b>(0.111)</b>

<sup>a</sup>Data are reported as means (SDs).

## References

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