UCL NATIONAL COLLABORATING CENTRE FOR MENTAL HEALTH

Increasing Physical Activity in Psychological Treatment

An evaluation of the impact on treatment outcomes for anxiety and depression

Appendices

THE NATIONAL LOTTERY
SPORT ENGLAND
NHS Camden and Islington Talking Therapies
NHS Buckinghamshire Talking Therapies

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Appendix A. Quantitative data analyses

Definitions of the abbreviations used in all tables can be found in the Abbreviations section.

A.1. Quantitative analysis of the CBT groups and LTC workshops

A.1.1. Within-group comparison

Participants

Table 1: Additional demographic information for people in the CBT groups and LTC workshops at iCope and Buckinghamshire Talking Therapies

	CBT		LTC	
	Bucks N=44	iCope N=33	Bucks N=63	iCope N=17
Employment status (n [%])				
Employed	29 (65.9)	17 (51.5)	27 (42.9)	6 (35.3)
Unemployed but seeking work	-	7 (21.2)	3 (4.8)	4 (23.5)
Student	-	8 (24.2)	-	2 (11.8)
Long-term sick/disabled	5 (11.4)	-	8 (12.7)	3 (17.6)
Homemaker	-	1 (3)	3 (4.8)	1 (5.9)
Not working	8 (18.2)	-	10 (15.9)	-
Voluntary work	-	-	-	-
Retired	2 (4.5)	-	12 (19)	1 (5.9)
Missing	-	-	-	-
Medication status (n [%])				
Not taking	11 (25)	22 (66.7)	29 (46)	8 (47.1)
Taking	22 (75)	11 (33.3)	24 (38.1)	7 (41.2)
Missing	11 (25)	4.2 (3.6)	10 (15.9)	2 (11.8)
Weeks from referral	4.8 (12.3)	11.1 (8)	3 (9.1)	3 (9.1)
Weeks from assessment	4.3 (4.5)	6.2 (3)	4.3 (6.4)	4.3 (6.4)
Count group sessions	11.3 (6)	8.5 (1.8)	4.6 (3.3)	4.6 (3.3)
Weeks HI sessions	3.4 (6.4)	0.2 (1.1)	3.7 (7.2)	3.7 (7.2)
Count LI sessions	15.6 (8.2)	4.2 (3.6)	9.8 (5.2)	9.8 (5.2)

Results

Overall (both sites)

CBT groups (N=77)

Paired-samples t-tests revealed significant differences in mean scores for both the PHQ-9[1] and GAD-7[2] (PHQ: mean [SD] t1=18.42 [4.43], t2=11.94 [6.17], t=8.45, p<0.001; GAD-7: mean [SD] t1=13.72 [4.68, t2=9.67 [5.89], t=5.90, p<0.001) indicating a large effect size on the PHQ-9 (d=0.96) and medium effect on the GAD-7 (d=0.67). Recovery was achieved by 33.8% of individuals, reliable recovery by 29.9% and reliable improvement by 63.6%.

LTC workshops (N=80)

Paired-samples t-tests revealed significant differences in mean scores for both the PHQ-9 and GAD-7 (PHQ: mean [SD] t1=17.08 [4.52], t2=10.56 [6.06], t=9.45, p<0.001; GAD-7: mean [SD] t1=13.14 [5.14], t2=8.29 [5.81], t=7.69, p<0.001) indicating large effect sizes on both the PHQ-9 (d=1.06) and the GAD-7 (d=0.86). Recovery was achieved by 42.5% of individuals, reliable recovery by 38.75% and reliable improvement by 71.25%.

iCope

CBT groups (N=33)

Paired-samples t-tests revealed significant differences in mean scores for both the PHQ-9 and GAD-7 (PHQ: mean [SD] t1=18.64 [4.09], t2=10.55 [6.98], t=6.04, p<0.001; GAD-7: mean [SD] t1=14.06 [5.13], t2=9.42 [6.07], t=3.77, p<0.001) indicating a large effect size on the PHQ-9 (d=1.05) and a medium effect size on the GAD-7 (d=0.66). Recovery was achieved by 39.39% of individuals, reliable recovery by 36.36% and reliable improvement by 63.64%.

LTC workshops (N=17)

Paired-samples t-tests revealed significant differences in mean scores for both the PHQ-9 and GAD-7 (PHQ: mean [SD] t1=18.00 [5.23], t2=11.41 [6.11], t=4.356, p<0.001; GAD-7: mean [SD] t1=15.12 [4.85], t2=10.12 [6.34], t=3.85, p=0.001) indicating large effect sizes on both the PHQ-9 (d=1.06) and the GAD-7 (d=0.93). Recovery was achieved by 41.18% of individuals, reliable recovery by 41.18% and reliable improvement by 70.59%

Buckinghamshire Talking Therapies

CBT groups (N=44)

Paired-samples t-tests revealed significant differences in mean scores for both the PHQ-9 and GAD-7 (PHQ: mean [SD] t1=18.27 [4.71], t2=12.98 [5.33], t=6.136, p<0.001; GAD-7: mean [SD] t1=13.48 [4.36], t2=9.86 [5.81], t=4.65, p<0.001) indicating a large effect size on the PHQ-9 (d=0.92) and a medium effect size on the GAD-7 (d=0.70). Recovery was achieved by 29.55% of individuals, reliable recovery by 25% and reliable improvement by 63.64%.

LTC workshops (N=63)

Paired-samples t-tests revealed significant differences in mean scores for both the PHQ-9 and GAD-7 (PHQ: mean [SD] t1=16.83 [4.32], t2=10.33 [6.08], t=8.334, p<0.001; GAD-7: mean [SD] t1=12.60 [5.13], t2=7.79 [5.61], t=6.63, p<0.001) indicating large effect sizes on both the PHQ-9 (d=1.05) and the GAD-7 (d=0.84). Recovery was achieved by 42.86% of individuals, reliable recovery by 38.10% and reliable improvement by 71.43%.

Recovery rates from iCope and Buckinghamshire Talking Therapies overall

Service level data for recovery, reliable recovery and reliable improvement rates for iCope can be found in Table 2 and for Buckinghamshire Talking Therapies in Table 3. These were compared with recovery data for the CBT groups and LTC workshops at both sites, as presented in the report.

Table 2: Recovery, reliable recovery and reliable improvement rates for iCope, split into overall, Step 2, Step 3, Step 3 groups and people in the service with a LTC. Data covers the period from April 2021 to October 2023

	Recovery	Reliable recovery	Reliable improvement
Overall	50.1%	46.1%	63.9%
Step 2	55.8%	51.9%	65.7%
Step 3	47.7%	43.9%	63.0%
Step 3 groups	42.4%	39.5%	65.3%
LTC	45.2%	41.5%	66.0%

Table 3: Recovery, reliable recovery and reliable improvement rates for Buckinghamshire Talking Therapies, split into overall, Step 2, Step 3, Step 3 groups and people in the service with a LTC. Data covers the period from April 2021 to October 2023

	Recovery	Reliable recovery	Reliable improvement
Overall	55.61%	52.96%	68.76%
Step 2	58.68%	55.88%	69.71%
Step 3	42.32%	40.36%	64.58%
Step 3 groups	38.26%	35.10%	56.84%
LTC	52.90%	49.99%	65.48%

A.1.2. Propensity score matching analysis

Below, see the full breakdown of the demographic data, the results of routine outcome measures (PHQ-9 and GAD-7) and the waiting times for the CBT groups (Table 4) and the LTC workshops (Table 5) compared with matched controls.

Table 4: Demographics, routine outcome measures and waiting times for CBT group participants and matched controls

CBT groups	iCope			BTT		
	CBT group	Controls[a]	Group difference	CBT group	Controls	Group difference
	n (%)	n (%)	X^2 (p)	n (%)	n (%)	X^2 (p)
Employment status			3.14 (n.s.)			3.14 (n.s.)
Employed	17 (51.5)	12 (54.5)		29 (67.4)	17 (47.2)	
Unemployed but seeking work	7 (21.2)	6 (27.3)		-	5 (13.9)	
Student	8 (24.2)	3 (13.6)		-	-	
Long-term sick/ disabled	-	-		4 (9.3)	2 (5.6)	
Homemaker	1 (3.0)	-		-	5 (13.9)	
Not working	-	1 (4.5)		8 (18.6)	4 (11.1)	
Voluntary work	-	-		-	1 (2.8)	
Retired	-	-		2 (4.7)	2 (5.6)	
Missing	-	4 (15.4)		-	-	
Ethnicity			1.39 (n.s.)			1.39 (n.s.)
White	20 (60.6)	12 (46.2)		37 (86)	30 (83.3)	
Ethnic minority	11 (33.3)	11 (42.3)		4 (9.3)	5 (13.9)	
Missing	2 (6.1)	3 (11.5)		2 (4.7)	1 (2.8)	
Gender			0.77 (n.s.)			0.02 (n.s.)
Female	18 (54.5)	18 (69.2)		28 (65.1)	22 (61.1)	
Male	15 (45.5)	8 (30.8)		15 (34.9)	14 (38.9)	
Missing	0 (0)	0 (0)		0 (0)	0 (0)	
Long-term health condition			0 (n.s.)			0.31 (n.s.)
No	1 (3.0)	1 (3.8)		22 (35.0)	17 (47.2)	
Yes	13 (39.3)	11 (42.3)		13 (20.1)	13 (36.1)	

[a] In iCope, the control group only included observations referred in 2021 or before. Therefore, any observation in the control group (those who did not receive any of the physical activity interventions) referred in 2022 or 2023 were excluded.

Table 4: Continued

CBT groups	iCope			BTT		
	CBT group	Controls[a]	Group difference	CBT group	Controls	Group difference
	n (%)	n (%)	X^2 (p)	n (%)	n (%)	X^2 (p)
Missing	19 (57.6)	14 (53.8)		8 (12.7)	6 (16.7)	
Medication status			0 (n.s.)			0.06 (n.s.)
Not taking	22 (66.7)	18 (69.2)		11 (25.6)	6 (16.7)	
Taking	11 (33.3)	8 (30.8)		21 (48.9)	16 (44.4)	
Missing	0 (0)	0 (0)		11 (25.6)	14 (38.9)	
Depression or anxiety			0 (n.s.)			0.24 (n.s.)
Depression	29 (87.9)	23 (88.5)		37 (86)	32 (88.9)	
Anxiety	-	-		5 (11.6)	3 (8.3)	
Missing	4 (12.2)	3 (11.5)		1 (2.3)	1 (2.8)	
	M (SD)	M (SD)	t (p)	M (SD)	M (SD)	t (p)
Other						
Age	32.8 (10.4)	32.5 (12.6)	-0.10 (n.s.)	42.7 (11.8)	44 (15.3)	0.39 (n.s.)
GAD-7 and PHQ-9 results (M [SD])						
GAD-7 (pre-treatment)	14.1 (5.1)	12.9 (5.6)	-0.83 (n.s.)	13.5 (4.4)	13.4 (4.8)	-0.09 (n.s.)
PHQ-9 (pre-treatment)	18.6 (4.1)	18.2 (5.5)	1.46 (n.s.)	18.3 (4.8)	18.6 (5.4)	0.26 (n.s.)
GAD-7 (post-treatment)	9.4 (6.1)	9.8 (6.4)	0.26 (n.s.)	9.9 (5.9)	9.3 (6.1)	-0.48 (n.s.)
PHQ-9 (post-treatment)	10.5 (7)	13.2 (7.1)	-0.39 (n.s.)	13 (5.4)	12.2 (7.9)	-0.45 (n.s.)
Waiting times (M [SD])						
Weeks from referral	4.2 (3.6)	3.8 (2.4)	-0.33 (n.s.)	4.3 (12)	3.8 (7.8)	-1.35 (n.s.)
Weeks from assessment	11.1 (8)	12.9 (15.2)	-0.33 (n.s.)	4.4 (4.5)	4.6 (5.3)	0.67 (n.s.)
Count group sessions	6.2 (3)	5.8 (5.2)	0.35 (n.s.)	10.7 (3.9)	9.2 (5.1)	-0.57 (n.s.)
Weeks high-intensity sessions	8.5 (1.8)	8 (6.1)	-0.48 (n.s.)	3.4 (6.4)	4.5 (7.1)	-0.22 (n.s.)

Table 4: Continued

CBT groups	iCope			BTT		
	CBT group	Controls[a]	Group difference	CBT group	Controls	Group difference
	M (SD)	M (SD)	t (p)	M (SD)	M (SD)	t (p)
Count low-intensity sessions	0.2 (1.1)	0.3 (1)	0.54 (n.s.)	14.9 (6.7)	14 (7.4)	0.22 (n.s.)

Note: * p < 0.05; ** p <0.001.

Table 5: Demographics, routine outcome measures and waiting times for LTC workshop participants

LTC workshops	iCope			BTT		
	LTC workshop	Controls	Group difference	LTC workshop	Controls	Group difference
	n (%)	n (%)	X^2 (p)	n (%)	n (%)	X^2 (p)
Employment			25.3**			137.5**
Employed	6 (35.3)	9 (64.3)		27 (42.9)	32 (52.5)	
Unemployed but seeking work	4 (23.5)	2 (14.3)		3 (4.8)	1 (1.6)	
Student	2 (11.8)	-		-	-	
Long-term sick/ disabled	3 (17.6)	1 (7.1)		8 (12.7)	4 (6.6)	
Homemaker	1 (5.9)	-		3 (4.8)	2 (3.3)	
Not working	-	-		10 (15.9)	7 (11.5)	
Voluntary work	-	-		-	1 (1.6)	
Retired	1 (5.9)	2 (14.3)		12 (19.0)	14 (23.0)	
Missing	-	3 (17.6)		-	-	
Ethnicity			26.9**			83.0**
White	11 (64.7)	14 (82.4)		46 (73.0)	43 (70.5)	
Ethnic minority	5 (29.4)	3 (17.6)		11 (17.5)	10 (16.4)	
Missing	1 (5.9)	0 (0)		6 (9.5)	8 (13.1)	

Table 5: Continued

LTC workshops		iCope			BTT	
	LTC workshop	Controls	Group difference	LTC workshop	Controls	Group difference
	n (%)	n (%)	X^2 (p)	n (%)	n (%)	X^2 (p)
Gender			19.9**			15.6**
Female	15 (88.2)	15 (88.2)		44 (69.8)	21 (34.4)	
Male	2 (11.8)	2 (11.8)		19 (30.2)	40 (65.6)	
Missing	0 (0)	0 (0)		-	-	
LTC status			4.17*			16.1**
No	1 (6.2)	8 (61.5)		1 (1.6)	24 (39.3)	
Yes	15 (93.8)	5 (38.5)		39 (61.9)	22 (36.1)	
Missing	1 (5.9)	4 (23.5)		23 (36.5)	15 (24.6)	
Medication			1.58 (n.s.)			0.3 (n.s.)
Not taking	8 (47.1)	4 (23.5)		29 (46.0)	22 (36.1)	
Taking	7 (41.1)	12 (70.6)		24 (38.1)	22 (36.1)	
Missing	2 (11.8)	1 (5.9)		10 (15.9)	17 (27.9)	
Depression or anxiety			15.2 **			75.6 **
Depression	11 (64.7)	11 (64.7)		41 (65.1)	44 (72.1)	
Anxiety	2 (11.8)	3 (17.6)		19 (30.2)	12 (19.7)	
Missing	4 (23.5)	3 (17.6)		3 (4.8)	5 (8.2)	
	M (SD)	M (SD)	t (p)	M (SD)	M (SD)	t (p)
Other						
Age	41.8 (13.5)	40.5 (15.7)	-0.26 (n.s.)	49 (13.3)	51.4 (17.3)	0.86 (n.s.)
GAD-7 and PHQ-9						
GAD-7 (pre-treatment)	15.1 (4.8)	17.4 (3.2)	1.60 (n.s.)	12.6 (5.1)	12.6 (4.5)	0 (n.s.)
PHQ-9 (pre-treatment)	18 (5.2)	17.9 (5.7)	-0.03 (n.s.)	16.8 (4.3)	16.7 (5.4)	-0.17 (n.s.)
GAD-7 (post-treatment)	10.1 (6.3)	11.1 (6.6)	0.45 (n.s.)	7.8 (5.6)	8.1 (6)	0.50 (n.s.)
PHQ-9 (post-treatment)	11.4 (6.1)	11.8 (7.2)	0.18 (n.s.)	10.3 (6.1)	10 (6.5)	-0.65 (n.s.)

Table 5: Continued

LTC workshops	iCope			BTT		
	LTC workshop	Controls	Group difference	LTC workshop	Controls	Group difference
	M (SD)	M (SD)	t (p)	M (SD)	M (SD)	t (p)
Waiting times						
Weeks from referral	7.4 (6.9)	4.4 (4)	-0.65 (n.s.)	3 (9.1)	1.9 (3.4)	-1.74 (n.s.)
Weeks from assessment	16.4 (16.8)	15.1 (13.3)	0.90 (n.s.)	4.3 (6.4)	3.8 (4.2)	-0.26 (n.s.)
Count group sessions	1.7 (1.1)	1.2 (2.8)	0.47 (n.s.)	4.6 (3.3)	3.3 (4.7)	-0.18 (n.s.)
Weeks HI sessions	8.1 (5.5)	10.3 (8.4)	-1.51 (n.s.)	3.7 (7.2)	3.4 (6.8)	-0.97 (n.s.)
Count LI sessions	2.2 (2.6)	2.7 (3.2)	-0.25 (n.s.)	9.8 (5.2)	9.6 (6.2)	-0.47 (n.s.)

Notes: * p<0.05; ** p<0.001.

Overall (both sites)

CBT groups

Primary analyses using endpoint PHQ-9 and GAD-7 scores indicated that there were no significant differences in final scores between those in the CBT groups on either the PHQ-9 (β=-0.34 [95%CI=-2.49; 1.81], p=0.753) or the GAD-7 (β=0.25 [95%CI=-1.67; 2.17], p=0.797). The effect sizes (Cohen's d) indicated no differences on either the PHQ-9 (d=0.05) or the GAD-7 (d=0.04).

There were no statistically significant differences between the groups on the odds of recovery (OR=0.89 [95%CI=0.46; 1.73], p=0.735), reliable recovery (OR=0.79 [95%CI=0.40; 1.55], p=0.49) or reliable improvement (OR=1.12 [95%CI=0.58; 2.15], p=0.738).

LTC workshops

Primary analyses using endpoint PHQ-9 and GAD-7 scores indicated that there were no significant differences in final scores between those attending the LTC workshop on either the PHQ-9 (β=0.6 [95%CI=-1.44; 2.64], p=0.562) or the GAD-7 (β=0.58 [95%CI=-2.49; 1.34], p=0.553). The effect sizes (Cohen's d) indicated no differences on either the PHQ-9 (d=0.09) or the GAD-7 (d=0.09).

There were no statistically significant differences between the groups on the odds of recovery (OR=1.05 [95%CI=0.56; 1.97], p=0.873), reliable recovery (OR=0.95 [95%CI=0.50; 1.79], p=0.871) or reliable improvement (OR=1.06 [95%CI=0.54; 2.10], p=0.862).

iCope

CBT groups

Primary analyses using endpoint PHQ-9 and GAD-7 scores indicated that there were no significant differences in final scores between those in the CBT groups on either the PHQ-9 (β=-2.09 [95%CI=-5.46; 1.28], p=0.220) or the GAD-7 (β=-0.21 [95%CI=-3.20; 2.78], p=0.888). The effect size (Cohen's d) was small for the PHQ-9 (d=0.30) indicating more benefit for those attending the physical activity groups (compared with the controls), whereas no difference was indicated on the GAD-7 (d=0.03). There were no statistically significant differences between the groups on the odds of recovery (OR=1.49 [95%CI=0.54; 4.14], p=0.439), reliable recovery (OR=1.31 [95%CI=0.47; 3.67], p=0.602) or reliable improvement (OR=1.29 [95%CI=0.48; 3.47], p=0.615).

LTC workshops

Primary analyses using endpoint PHQ-9 and GAD-7 scores indicated that there were no significant differences in final scores between those in the LTC workshops on either the PHQ-9 (β=-0.41 [95%CI=-5.09; 4.26], p=0.859) or the GAD-7 (β=-1.00 [95%CI=-5.51; 3.51], p=0.655). The effect sizes (Cohen's d) indicated no meaningful differences for both the PHQ-9 (d=0.06) and the GAD-7 (d=0.15). There were no statistically significant differences between the groups on the odds of recovery (OR=1.68 [95%CI=0.40; 6.96], p=0.474), reliable recovery (OR=1.68 [95%CI=0.41; 6.96], p=0.474) or reliable improvement (OR=1.31 [95%CI=0.31; 5.53], p=0.714).

Buckinghamshire Talking Therapies

CBT groups

Primary analyses using endpoint PHQ-9 and GAD-7 scores indicated that there were no significant differences in final scores between those in the CBT groups on either the PHQ-9 (β=1.00 [95%CI=-1.81; 3.81], p=0.481) or the GAD-7 (β=0.60 [95%CI=-1.96; 3.17], p=0.640). The effect sizes (Cohen's d) indicated no differences on either the PHQ-9 (d=0.15) or the GAD-7 (d=0.1).

There were no statistically significant differences between the groups on the odds of recovery (OR=0.60 [95%CI=0.25; 1.46], p=0.263), reliable recovery (OR=0.53 [95%CI=0.21; 1.32], p=0.170) or reliable improvement (OR=1.00 [95%CI=0.42; 2.40], p=1.000).

LTC workshops

Primary analyses using endpoint PHQ-9 and GAD-7 scores indicated that there were no significant differences in final scores between those attending the LTC workshops on either the PHQ-9 (β=0.87 [95%CI=-1.42; 3.16], p=0.452) or the GAD-7 (β=-0.46 [95%CI=-2.56; 1.64], p=0.665). The effect sizes for the PHQ-9 (d=0.13) and the GAD-7 (d=0.07) both indicated little difference. There were no statistically significant differences between the groups on the odds of recovery (OR=0.94 [95%CI=0.46; 1.90], p=0.857), reliable recovery (OR=0.82 [95%CI=0.40; 1.67], p=0.586) or reliable improvement (OR=1.00 [95%CI=0.46; 2.17], p=1.000).

A.1.3. Physical activity scores analysis and measures

We analysed patient data from the interventions using two measures of physical activity, the International Physical Activity Questionnaire – Short Form (IPAQ-SF)[3] and a single-item measure of physical activity.

IPAQ-SF variable construction

Data from the IPAQ-SF can be reported as a continuous variable known as **metabolic equivalent of task minutes per week (MET-mins/week)**.

A MET is a multiple of a person's estimated resting energy expenditure. For example, 1 MET is a person's energy expenditure at rest; 2 METs is twice a person's resting energy expenditure; 3 METs is three times a person's energy expenditure, and so on. MET-mins/week are used to estimate the amount of energy expended carrying out physical activity over 7 days.

Analysis was performed using continuous IPAQ-SF data, described below.

Continuous IPAQ data (MET-mins/week)

To calculate the MET-mins/week, the official IPAQ-SF calculation guidance was used.[4] The calculation guidance provides a MET score for walking (3.3 METs), moderate-intensity physical activity (4 METs) and vigorous-intensity physical activity (8 METs), based on the 'Compendium of Physical Activities'.[5] As per the guidance, the following calculations were used to calculate MET-mins/week for these three physical activity groups, along with a total physical activity MET-mins/week score, from the IPAQ data:

- Walking MET-mins/week = 3.3 × Walking mins/day × Walking days/week.
- Moderate MET-mins/week = 4.0 × Moderate-intensity activity mins/day × Moderate-intensity activity days/week.
- Vigorous MET-mins/week = 8.0 × Vigorous-intensity activity mins/day × Vigorous-intensity activity days/week.
- Total physical activity MET-mins/week = sum of Walking + Moderate + Vigorous MET-minutes/week scores.

Copy of the International Physical Activity Questionnaire – Short Form (IPAQ-SF)

1. We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the **last 7 days.** Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

   Think about all the vigorous activities that you did in the last 7 days. Vigorous physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

   During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling?

   If you did not do any please select 0 and continue to question 19.[b]

   ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

2. How much time did you usually spend doing vigorous physical activities on one of those days?

   _____ minutes per day [the value must be a number]

3. Think about all the moderate activities that you did in the last 7 days. Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

   During the last 7 days, on how many days did you do moderate physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

   If you did not do any moderate physical activities please select 0 and continue to question 21.

   ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

4. How much time did you usually spend doing moderate physical activities on one of those days?

   _____ minutes per day [the value must be a number]

[b] The questionnaire was given to people at the same time as the PHQ-9 and GAD-7, therefore the question numbers do not align with the question numbers in this appendix.

5. Think about the time you spent walking in the last 7 days. This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise, or leisure. During the last 7 days, on how many days did you walk for at least 10 minutes at a time?

   _____ days per week. If you have not done any walking please answer 0 and continue to question 23.

   ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

6. How much time did you usually spend walking on one of those days?

   _____ minutes per day [the value must be a number]

7. The last question is about the time you spent sitting on weekdays during the last 7 days. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television. During the last 7 days, how much time did you spend sitting on a week day?

   _____ hours per day [the value must be a number]

A.1.4. The single-item measure of physical activity

At the end of their final sessions, participants in the CBT groups, LTC workshops and Animal Antiks were asked to complete a single-item measure of physical activity. Via a poll within the group or on Microsoft Forms, they reported how their levels of physical activity had changed since the start of the groups.

The wording of the measure differed slightly between iCope and Buckinghamshire Talking Therapies. The questions asked at each site are listed in Table 6 below.

Table 6: Wording of the single-item measure of physical activity for iCope and Buckinghamshire Talking Therapies

iCope	BTT
What difference has the group made to your level of physical activity?	**Since the start of the group how have your levels of physical activity changed?**
Joining the group means I'm more active than I would have been otherwise	I'm more active than when the group started
I would have been equally as active if I hadn't joined the group	There has been no change in my levels of activity since the group started
Joining the group means I'm less active than I would have been otherwise	I'm less active than when the group started

A.2. Normalization MeAsure Development questionnaire data tables and figures

A.2.1. NoMAD Normalization Process Theory responses

The NoMAD[6] was filled in by staff at both sites. Figure 1 provides the mean responses to the three overall normalisation questions. Figure 2 shows agreement with the four Normalization Process Theory (NPT) constructs in the NoMAD.

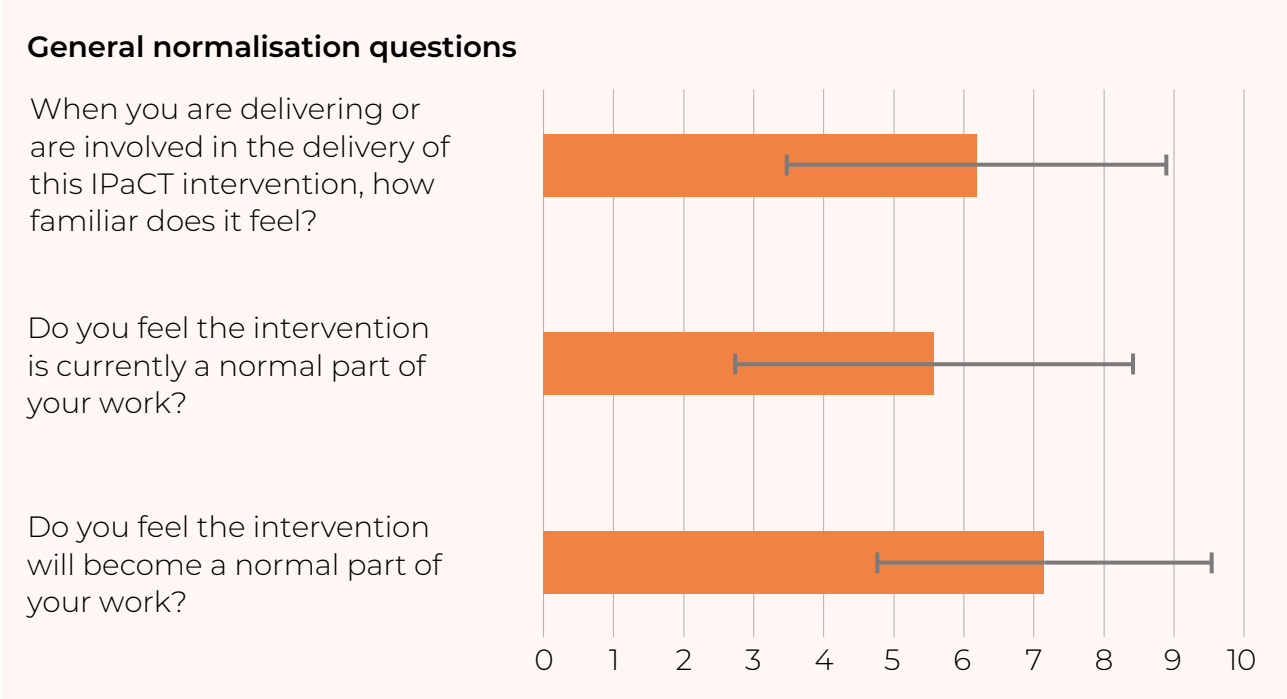

Figure 1: Mean responses to the three overall normalisation questions. Error bars represent standard deviation. All questions were asked on a scale of 0 = not at all, 5 = somewhat, 10 = completely

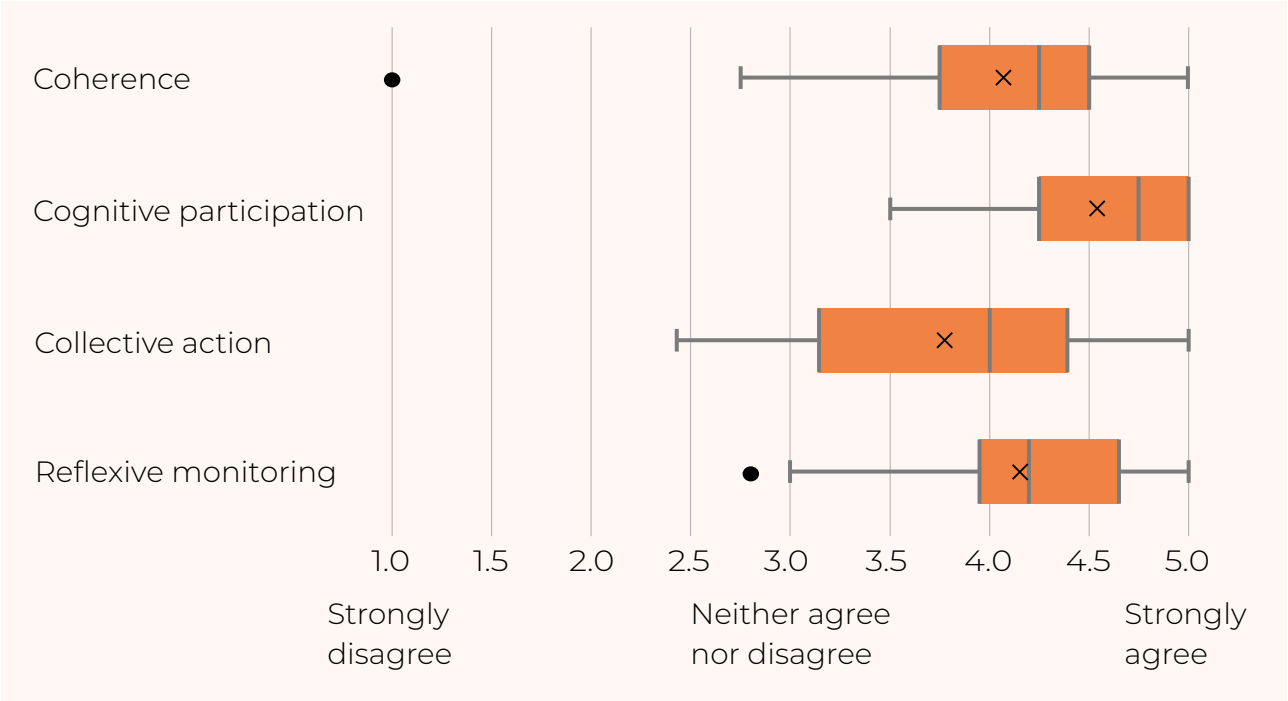

Figure 2: Box plot showing agreement with the four constructs

Table 7, Table 8, Table 9 and Table 10 present the breakdown of the responses to individual questions on the NoMAD constructs.

Construct 1: Coherence

Table 7: Responses to NoMAD questions about coherence

Level of agreement (%)	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
Differentiation: I can see how this intervention differs from usual ways of working	33	36	18	9	3
Communal specification: Staff in this organisation have a shared understanding of the purpose of this intervention	21	39	15	21	3
Internalisation: I can see the potential value of this intervention for my work	82	9	6	0	3
Individual specification: I understand how this intervention affects the nature of my own work	42	42	9	3	3

Construct 2: Cognitive participation

Table 8: Responses to NoMAD questions about cognitive participation

Level of agreement (%)	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
Initiation: There are key people who drive this intervention forward and get others involved	63	31	6	0	0
Legitimation: I believe that participating in this intervention is a legitimate part of my role	52	30	15	0	3
Enrolment: I'm open to working with colleagues in new ways to use this intervention	66	31	3	0	0
Activation: I will continue to support this intervention	69	28	3	0	0

Construct 3: Collective action

Table 9: Responses to NoMAD questions about collective action

Level of agreement (%)	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
Interactional workability: I can easily integrate this intervention into my existing work	33	40	10	17	0
Relational integration (1):* This intervention disrupts working relationships	3	3	13	37	43
Relational integration (2): I have confidence in other people's ability to deliver/use this intervention	15	36	27	15	6
Skill set workability (1): Work is assigned to those with skills appropriate to this intervention	19	45	19	16	0

Level of agreement (%)	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
Skill set workability (2): Sufficient training is provided to enable staff to implement this intervention	19	45	13	16	6
Contextual integration (1): Management adequately supports this intervention	23	52	16	10	0
Contextual integration (2): Sufficient resources are available to support this intervention	16	45	29	10	0

* The question on relational integration (1) is a reverse question (asking for the level of agreement with a negative statement), so has been reverse coded, such that strongly disagreeing equates to strongly agreeing in the other questions.

Construct 4: Reflexive monitoring

Table 10: Responses to NoMAD questions about reflexive monitoring

Level of agreement (%)	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
Systemisation: I am aware of reports about the effects of this intervention	32	42	3	19	3
Communal appraisal: The staff agree that this intervention is worthwhile	35	42	19	3	0
Individual appraisal: I value the effects that this intervention has had on my work	42	42	16	0	0
Reconfiguration (1): Feedback about this intervention can be used to improve it in the future	58	35	6	0	0
Reconfiguration (2): I can modify how I work with this intervention	35	42	16	3	3

A.2.2. Copy of Normalisation MeAsure Development Questionnaire (NoMAD)

The purpose of this questionnaire is to help us understand how well your organisation has implemented physical activity into psychological treatment and services. Your responses will help us see how effective the implementation process has been, and understand your experience of this and the relevant intervention within IAPT services.[c] All questionnaires will be kept confidential and your responses will be anonymously compiled with other members of staff to get a general view of how well the intervention has been implemented.

Thank you for your time!

This survey asks questions about the implementation of Increasing Physical Activity in Psychological Treatment (IPAcT). We understand that people involved with IPAcT have different roles, and that people may have more than one role.

1. From the statements below, please select **all the roles that apply to you** in relation to IPAcT:

- ☐ I am involved in managing or overseeing the cognitive behavioural therapy (CBT) and physical activity (PA) groups
- ☐ I am involved in delivering the Step 3 CBT & PA groups
- ☐ I am involved in managing or overseeing the Getting Active with a Health Condition workshop (PsychED)
- ☐ I am involved in delivering the Getting Active with a Health Condition workshop
- ☐ I am involved in managing or overseeing the Foundations mobile application (app)
- ☐ I am involved in offering the Foundations app alongside my treatment
- ☐ I am involved in managing or overseeing the Walk and Talk therapy
- ☐ I am involved in delivering Walk and Talk therapy
- ☐ Other

[c] Re-named NHS Talking Therapies, for anxiety and depression during the course of this evaluation.

2. This survey asks questions about the implementation of Increasing physical activity in Psychological Treatment (IPAcT). We understand that people involved with IPAcT have different roles, and that people may have more than one role.

   From the statements below please choose an option that best describes your **main role** in relation to IPAcT:

   - ☐ I am involved in managing or overseeing the cognitive behavioural therapy (CBT) and physical activity (PA) groups
   - ☐ I am involved in delivering the Step 3 CBT & PA groups
   - ☐ I am involved in managing or overseeing the Getting Active with a Health Condition workshop (PsychED)
   - ☐ I am involved in delivering the Getting Active with a Health Condition workshop
   - ☐ I am involved in managing or overseeing the Foundations mobile application (app)
   - ☐ I am involved in offering the Foundations app alongside my treatment
   - ☐ I am involved in managing or overseeing the Walk and Talk therapy
   - ☐ I am involved in delivering Walk and Talk therapy
   - ☐ Other

Part A: About yourself

3. How many years have you worked for the Camden & Islington Foundation Trust (CIFT) services, iCope? (If your trust has merged with another or changed its name, please include in your answer all the time you have worked with this trust and its predecessors)

   - ☐ Less than 1 year
   - ☐ 1–2 years
   - ☐ 3–5 years
   - ☐ 6–10 years
   - ☐ 11–15 years
   - ☐ More than 15 years

4. How would you describe your professional job category? (For example, high-intensity therapist, psychological wellbeing practitioner, service manager, clinical/health psychologist)

   [*free text*]

Part B: General questions about the intervention (your main role in IPAcT)

5. When you are delivering or are involved in the delivery of this IPAcT intervention, how familiar does it feel?
   (1 = still feels very new, >5 = somewhat familiar, >10 = completely familiar)

6. Do you feel the intervention is currently a normal part of your work?
   (1 = not at all, >5 = somewhat, >10 = completely)

7. Do you feel the intervention will become a normal part of your work?
   (1 = not at all, >5 = somewhat >10 = completely)

Part C

For each statement please select an answer that best suits your experience using Option A. If the statement is not relevant to you please select an answer from Option B.

Option A: Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree)

OR

Option B: Not relevant to my role; Not relevant at this stage; Not relevant to this intervention

Part C: Section 1: Specific questions about your selected intervention

- ☐ I can see how this intervention differs from usual ways of working
- ☐ Staff in this organisation have a shared understanding of the purpose of this intervention
- ☐ I can see the potential value of this intervention for my work
- ☐ I understand how this intervention affects the nature of my own work

Part C: Section 2: Specific questions about your selected intervention

- ☐ There are key people who drive this intervention forward and get others involved
- ☐ I believe that participating in this intervention is a legitimate part of my role
- ☐ I'm open to working with colleagues in new ways to use this intervention
- ☐ I will continue to support this intervention

Part C: Section 3: Specific questions about your selected intervention

- ☐ I can easily integrate this intervention into my existing work
- ☐ This intervention disrupts working relationships
- ☐ I have confidence in other people's ability to deliver/use this intervention
- ☐ Work is assigned to those with skills appropriate to this intervention
- ☐ Management adequately supports this intervention
- ☐ Sufficient training is provided to enable staff to implement this intervention
- ☐ Sufficient resources are available to support this intervention

Part C: Section 4: Specific questions about your selected intervention

- ☐ I am aware of reports about the effects of this intervention
- ☐ The staff agree that this intervention is worthwhile
- ☐ I value the effects that this intervention has had on my work
- ☐ Feedback about this intervention can be used to improve it in the future
- ☐ I can modify how I work with this intervention

9. If you wish to provide any further feedback detail regarding IPAcT, please do so below:

[*free text*)

Thank you for completing this survey. To enable us to potentially explore any changes in responses over time please provide your email address below. This will be kept confidential.

[*free text*]

Appendix B. Qualitative interviews and questionnaires

B.1. Copy of the interview topic guides

Please note that there were different topic guides for the interviews with participants from the CBT groups and participants from the LTC workshops.

Topic guide – interviews: CBT groups

The purpose of this interview is to discuss your experience of your iCope/ Buckinghamshire Talking Therapies groups that you received. We will also discuss any changes in your physical activity, and mental/physical health during or after the groups.

The interview should take approximately 30–45 minutes. As we only have a limited amount of time, if we interrupt or change the topic, this is because we want to try and stay focused on your engagement with – and experiences of – the group sessions, and how you think they have impacted your physical activity.

Interviews will be kept confidential – this means that only people within the research team will hear the recording/see the transcripts. The transcripts will be anonymised, which means that you will be given an ID/your name will not be on the transcript/ the team won't be able to tell who you are from the transcript.

If you disclose something to us that indicates that you or someone else are at risk of immediate harm, we would have to discuss this with a member of your IAPT[d] service.

If you don't feel comfortable answering any questions at any time during the interview you don't have to. If you need/want to stop at any time, you can and don't need to give a reason. Same for if you need a break, just say. You can also refer to:

- For Camden and Islington: If the person is experiencing a mental health crisis (risk to self/ others) then information about urgent support can be found here: Urgent help | Camden and Islington NHS Foundation Trust. We also have resources around this on our website: Getting Help in a Crisis – iCope. More general self-help here: Self-help resources – iCope. People could also re-refer to iCope if their mental health has deteriorated and they feel further support would be useful: Refer yourself to iCope.
- For BTT [Buckinghamshire Talking Therapies]: Most info is summarised here:

[d] Re-named NHS Talking Therapies, for anxiety and depression during the course of this evaluation.

Emergency help – NHS Buckinghamshire Talking Therapies. Alternatively they can say: Buckinghamshire Talking Therapies are not an emergency response service. For any emergencies requiring urgent medical attention please contact 999. If you feel you need urgent help for deteriorating mental health, please contact NHS111, our local Mental Health helpline, or visit https://111.nhs.uk/ (24 hours a day) who can offer urgent advice and support. You can also contact Bucks Safe Haven that offers a safe and supportive alternative to A&E for adults (aged 18+) who are experiencing a mental health crisis. For High Wycombe (open 7 nights a week) contact [*service phone number*] and for Aylesbury (open Sunday, Monday, Tuesday and Wednesday, contact [*service phone number*]. You can also contact the Samaritans on 116123 to talk through how you are feeling, your GP or their out of hours service.

If you lose connection at any point and can't re-connect, don't worry. Just give me a call on the number in the chat and in the invite email you were sent. Failing that, just send me a message (in the chat and on email) and we can arrange a time to complete the interview.

General prompts/expansions for questions, if needed:

- What do you think the reasons for that were/why was that, do you think?
- Can you give a bit more detail about that?
- Could you explain what you meant when you said…

Engagement

Key questions

- Before we start discussing the group, were you offered access to the Foundations app?
    - IF YES – how much did you use it?
        - If a bit/a lot – what did you like about it? What didn't you like about it/what do you think would make it better?
        - If not at all/a little bit/completed onboarding only – why not/ only a little bit? What didn't you like about it?
- Can you describe your experience of getting referred to the group sessions?
- What **did** you like/enjoy about the group sessions and could you explain why?
- What **did** you find helpful/useful about the group sessions and could you explain why?
- What **didn't** you like/not enjoy about the group sessions and could you explain the reasons for that?
- What did you **not** find helpful/useful about the group sessions and could you

explain the reasons for that?

- Did your engagement, enjoyment or opinions about the group sessions' usefulness change over time?
    - If so, why might that be do you think?
    - If you could, what would you have changed about the groups?
        - What are your thoughts and feelings about the **group** format, rather than the sessions being for **individuals**?
- **PA iCope-/BTT-specific**: Did having the time to move and inclusion of PA within the sessions help with your engagement?

Change in PA

Key questions

- Did your levels of PA change over the course the groups, either during the sessions and/or outside them?
    - If so, how did they change?
    - How (if at all) did the groups contribute to this change?
- What types of PA did you do, in and outside of the sessions?
- What facilitated/helped you to carry out your physical activity/ [*insert type of PA*]?
- What barriers did you experience that hindered you being able to do PA/ certain types of PA? Were there any things you did to try and overcome these challenges/barriers?
    - (and do you feel you were successful?)
- Have you managed in some form to integrate PA into your daily/weekly routine?
    - Have you been able to sustain this so far?
        - (and do you think this will continue?)
    - [*If applicable*] What do you think are the key factors or reasons why this is/might be more sustainable? What might help you sustain this PA?
        - What do you think is different about your engagement with this PA compared to PA you've done or tried to do previously?

Change in MH/LTC

- Have you noticed any changes in your MH since starting the groups?
    - What have these changes looked like/in what way?
- Do you think your change in PA has contributed this change in MH?
    - [*encourage to expand if needed*].

Mop up/AOB

- In terms of your own participation and engagement with the groups, is there anything that you think you yourself would do differently if you did it again?
    - [*Only use these prompts if no answer; e.g. increase attendance; try different PA; different daily planning or routine, keeping a diary*]
- Accessibility: was there anything that you would change about the intervention to make it more accessible to you? [*E.g. if they have a disability that they feel comfortable disclosing to you and how this affected their experience, prompts could include asking about specific elements of the groups, e.g. the level of the worksheets, use of MS Teams/Zoom etc.*].
- Researcher to summarise the interview.
- Is there anything else that you would like to discuss/do you feel like there is anything else important? Do you have any other final thoughts?

Topic guide – interviews: LTC workshops

The purpose of this interview is to discuss your experience of your iCope/ Buckinghamshire Talking Therapies intervention that you received. We will also discuss any changes in your physical activity, and mental/physical health during or after the intervention.

The interview should take approximately 30–45 minutes. As we only have a limited amount of time, if we interrupt or change the topic, this is because we want to try and stay focused on your engagement with – and experiences of – the group sessions, and how you think they have impacted your physical activity.

Interviews will be kept confidential – this means that only people within the research team will hear the recording/see the transcripts. The transcripts will be anonymised, which means that you will be given an ID/your name will not be on the transcript/ the team won't be able to tell who you are from the transcript.

If you disclose something to us that indicates that you or someone else are at risk of immediate harm, we would have to discuss this with a member of your IAPT[e] service.

If you don't feel comfortable answering any questions at any time during the interview you don't have to. If you need/want to stop at any time, you can and don't need to give a reason. Same for if you need a break, just say. You can also refer to:

- For Camden and Islington: If the person is experiencing a mental health crisis (risk to self/ others) then information about urgent support can be found here: Urgent help | Camden and Islington NHS Foundation Trust. We also have resources around this on our website: Getting Help in a Crisis – iCope. More general self-help here: Self-help resources – iCope. People could also re-refer to iCope if their mental health has deteriorated and they feel further support would be useful: Refer yourself to iCope.

[e] Re-named NHS Talking Therapies, for anxiety and depression during the course of this evaluation.

- For BTT: Most info is summarised here: Emergency help – NHS Buckinghamshire Talking Therapies. Alternatively they can say: Buckinghamshire Talking Therapies are not an emergency response service. For any emergencies requiring urgent medical attention please contact 999. If you feel you need urgent help for deteriorating mental health, please contact NHS111, our local mental health helpline, or visit https://111.nhs.uk/ (24 hours a day) who can offer urgent advice and support. You can also contact Bucks Safe Haven that offers a safe and supportive alternative to A&E for adults (aged 18+) who are experiencing a mental health crisis. For High Wycombe (open 7 nights a week) contact [*service's phone number*] and for Aylesbury (open Sunday, Monday, Tuesday and Wednesday, contact [*service's phone number*]. You can also contact the Samaritans on 116123 to talk through how you are feeling, your GP or their out-of-hours service.

If you lose connection at any point and can't re-connect, don't worry. Just give me a call on the number in the chat and in the invite email you were sent. Failing that, just send me a message (in the chat and on email) and we can arrange a time to complete the interview.

General prompts/expansions for questions if needed

- What do you think the reasons for that were/why was that do you think?
- Can you give a bit more detail about that?
- Could you explain what you meant when you said…

Engagement

Key questions

- Before we start discussing the group, were you offered access to the Foundations app?
    - IF YES – how much did you use it?
        - If a bit/a lot – what did you like about it? What didn't you like about it/what do you think would make it better?
        - If not at all/a little bit/completed onboarding only – why not/ only a little bit? What didn't you like about it?
- How did you get referred to the group sessions?
- What did you like/enjoy about the group sessions and could you explain why?
- What did you find helpful/useful about the group sessions and could you explain why?
- What didn't you like/not enjoy about the group sessions and could you explain the reasons for that?
- What did you not find helpful/useful about the group sessions and could

you explain the reasons for that?

- Did your engagement, enjoyment or opinions about the group sessions' usefulness change over time?
    - If so, why might that be do you think?
    - If you could, what would you have changed about the groups?
- What are your thoughts and feelings about the **group** format, rather than the sessions being for **individuals**?
- **LTC-specific**: did you find the work pack resources (e.g. the change in mood or PA tracker) helpful? How did this help any engagement with, or changes in PA?

Change in PA

Key questions

- Did your levels of PA changed over the course the groups, during the sessions and/or outside them?
    - If so, how did they change?
    - How (if at all) did the groups contribute to this change?
- What types of PA did you do, in and outside of the sessions?
- What facilitated/helped you carrying out your physical activity/ [*insert type of PA*]?
- What barriers did you experience that hindered you being able to do PA/ certain types of PA? Were there any things you did to try and overcome these challenges/barriers?
    - (and do you feel you were successful?)
- Have you managed in some form to integrate PA into your daily/weekly routine?
    - Have you been able to sustain this so far and do you think this will continue?
    - [*If applicable*] What do you think are the key factors or reasons why this is/might be more sustainable? What might help you sustain this PA?
        - What do you think is different about your engagement with this PA compared to PA you've done or tried to do previously?

Change in MH/LTC

- [*If appropriate*] Has there been any changes in your long-term health condition since starting the intervention?
    - What have these changes looked like/in what way?

- Have you noticed any changes in your MH since starting the groups?
    - What have these changes looked like/in what way?
- Do you think your change in PA has contributed to this change in MH and/or LTC?
    - [*Encourage to expand if needed*]

Mop up/AOB

- In terms of your own participation and engagement with the groups, is there anything that you think you yourself would do differently if you did it again?
    - [*Only use these prompts if no answer; e.g. increase attendance; try different PA; different daily planning or routine, keeping a diary*]
- Accessibility: was there anything that you would change about the intervention to make it more accessible to you? [*E.g. if they have a disability that they feel comfortable disclosing to you and how this affected their experience, prompts could include asking about specific elements of the groups e.g. the level of the worksheets, use of MS Teams/Zoom etc.*]
    - [*Researcher to summarise the interview*]
- Is there anything else that you would like to discuss/do you feel like there is anything else important? Do you have any other final thoughts?

B.2. Analysis of the staff questionnaire and service user feedback form

Staff questionnaire

A brief qualitative questionnaire for staff who had delivered or been trained in Walk and Talk or Animal Antiks was designed by the researchers, with input from staff at the sites. A copy of the questions can be found in Appendix B.3.

Ten staff members from Camden and Islington NHS Foundation Trust who had been trained in Walk and Talk responded to the questionnaire (only four had delivered Walk and Talk).

Three staff members from Buckinghamshire Talking Therapies who delivered Animal Antiks completed the questionnaire (all eligible staff completed the survey).

Key themes were extracted from the questionnaires and are summarised in the following sections.

Walk and Talk

Experience and enabling factors

Staff found that Walk and Talk helped to facilitate interactions with service users. They reported that it built rapport, reduced the hierarchy between service users and staff, and made sessions feel more comfortable and collaborative.

> **'It changed our relationship and made the therapy more meaningful.'**

Staff found it particularly helpful to use techniques commonly used in NHS Talking Therapies services such as behavioural experiments and learning new skills. Engaging in physical activity together enabled service users to walk in a safe and more supported environment. Some staff reported the sessions as serving as a catalyst that enabled people to go outside by themselves after the intervention.

> **'I think [Walk and Talk] was very helpful for getting the patient to do some exercise and seeing the benefits of this in his life. Also, getting some fresh air and overcoming some anxieties about going out.'**

Staff noted multiple enabling factors that made the sessions more successful and easier to deliver. These included having set walking routes, delivering the sessions during quieter times with fewer people around, people being motivated to be outside, and recognising the benefits of physical activity and being outside.

Challenges with sessions and barriers to delivery

Identifying appropriate service users to take part in Walk and Talk was noted as challenging, with some staff reporting not knowing who was appropriate.

Many staff members had been trained to deliver Walk and Talk, yet only four members went on to deliver it. This could be due to several barriers raised by staff. For example, they worried about being overheard, especially when discussing sensitive topics. If people were feeling distressed, staff found it difficult to suggest going outside.

Expectations of therapy was also raised as a barrier, such as what therapy is and what it should look like in general. For example, staff spoke about the therapy room being a 'safe space' and there being traditional expectations around what therapy is. Deviating from this, changing expectations and breaking habits were described as challenges.

> 'It's getting used to taking people out of the safety of the clinical space to discuss what may be sensitive/confidential information or difficult emotions. Some of this may be therapist reticence based on previous experience of client reluctance.'

Practical considerations, such as needing more time or sessions overrunning, and factors to do with the external environment, such as weather and light, were raised as barriers. Accessibility was also raised, for example for people with limited mobility.

Staff wellbeing

All staff members said that delivering Walk and Talk had positive effects on their own mood, wellbeing and stress levels:

> 'It has helped my wellbeing a lot, I feel so much better when doing Walk and Talk therapy, it helps decrease my own stress and improves my wellbeing a lot by being outside and moving my body too.'

Animal Antiks

Overall, Animal Antiks received positive feedback from staff, who also reported positive responses from service users.

Staff experience and enabling factors

The intervention was rated as being extremely feasible by staff. Like Walk and Talk, staff described Animal Antiks as helping them build therapeutic relationships with participants and discussed the benefits of being outside and walking.

> 'I really enjoy this aspect of the walks as it allows me to get to know clients better and talk about their interests, as well as informally discussing the benefits of physical activity, getting out in the fresh air, but also prioritising doing things we enjoy for wellbeing purposes.'

Staff described practical factors that enabled them to deliver the interventions. They highlighted the presence of physical activity coordinators and psychological wellbeing practitioners at sessions as important, to provide support, as well as having time outside of the sessions to coordinate attendance and follow up with people. The farm setting was seen as an enabling factor as it was accommodating for people with mental health problems.

'A big enabling factor is how well set up the farm is. As they have run similar groups with organisations such as Mind, they are well-versed in the organisation of running groups for people with mental health and it has a calm and welcoming atmosphere which is key when working with people who are potentially anxious at first.'

Staff-reported service user experience

Staff reported receiving positive feedback from people attending Animal Antiks. Attendees reported to staff that it gave structure to their week as well as enabling them to socialise with others and be outside. People also reported that being outside and walking had a positive effect on mood and wellbeing. Staff reported that people wanted to attend again or continue with the activity independently.

'They have found the Animal Antiks walks more beneficial than their main treatment, and [said] that they intend to buy a dog so they can continue with the walks with an animal companion. We have had multiple clients want to complete the group for a second time.'

Challenges with and barriers to delivery of sessions

Staff reported several factors that made the sessions challenging. This included practical considerations, such as the location being too far away or hard to get to, when group sizes felt too big, poor weather, and accessibility issues including for people with limited mobility.

'Recruitment has been the most challenging part. As a service we cover a large area and therefore the location of the walks is not always easy for clients to get to. If we could have the option of various locations, we would see a much bigger uptake.'

Staff wellbeing

Staff reported that the intervention and being outside had a positive effect on their own wellbeing and mood.

'I notice massive improvements in my own mood and wellbeing after attending the walks. I love animals so that automatically improves my mood but also as most of our jobs are behind a desk, being able to get out, go for a walk, get fresh air and chat to new people is so beneficial to me. I hope that my enthusiasm and love for this group is translated to clients as well.'

Service user feedback form

A sample of people who participated in Animal Antiks were also asked about their experience of the intervention, and the impact it had on their wellbeing and physical activity. A brief feedback form was created by Buckinghamshire Talking Therapies and given to people who had attended Animal Antiks at their last session. The questions can be found in Appendix B.4.

Four people who attended Animal Antiks consented and filled in the feedback form at the end of their last session. Key themes were extracted from the responses and are summarised below.

Experience and impact on physical activity

Respondents' feedback about Animal Antiks was very positive. People said that the groups were friendly, that it was relaxing to be outside, and that they found it uplifting to walk the animals.

'It's such a relaxing way to spend an hour or so out in the fresh air and nature. I miss it!'

People enjoyed walking the alpacas, and said that the animals had a positive effect on their mood and gave them something to look forward to.

'The animal really can brighten up your day and you can even get to talk to people who are going through the same thing you are going through and sharing coping techniques.'

People noted that they felt more comfortable over time, and found they benefited from meeting and speaking to people going through similar experiences.

Participants noted that they either already had or were planning to introduce more physical activity (such as walking) into their routines. Some said that their ability to do so depended on their LTC symptoms.

Summary of findings

Although Walk and Talk and Animal Antiks are very different interventions, some similarities in findings emerged in the analysis of the results of the questionnaire and feedback form.

Staff discussed their experiences of delivering the interventions. These involved the interventions helping with interactions with service users, therapeutic relationships and building rapport. Although some staff noted reluctance around moving away from the traditional therapy environment, the evaluation highlights the benefits of novel interventions that involve being outside and engaging in physical activity, as well as on clinician and staff wellbeing. Therefore, it could be beneficial to include these in similar future interventions.

Some enabling factors contributed to the success of these interventions. For example, the timing of the sessions and service users being motivated to be outside and/or physically active. Training people on useful routes, times to deliver sessions, or using peer to peer support/supervision between people delivering the interventions to share ideas, could be beneficial. Involving management or physical activity coordinators to help identify appropriate service users, or using a physical activity measure at assessment to ascertain who has lower physical activity levels (and may therefore benefit most from these interventions), may be helpful. This could also help with recruitment issues, encountered when staff found it difficult to identify appropriate individuals.

Other challenges to delivery were, for example, time pressures and busy schedules that could inhibit the delivery of the interventions. Enabling staff to have dedicated time and adapting workplans could overcome this.

Overall, the interventions highlighted the positive effects that being physically active outside, with other people, in a safe environment can have on people's wellbeing and condition, and on their subsequent ability to independently initiate physical activity.

Limitations

Accessibility issues impacted both interventions: people need to be mobile to participate in the walking components. When planning future interventions that include physical activity or being outside, consideration should be given to making adaptations or using an intervention that is accessible for people who would benefit but who are, for example, restricted by their LTC.

When reflecting on the conclusions drawn from the questionnaire and feedback form, it is important to consider that there were a small sample size of staff and service users. Only a small number of staff in iCope had delivered Walk and Talk, compared with the number who had been trained. Those who had delivered Walk and Talk shared positive experiences and suggested ways to overcome barriers. Sharing these experiences or learnings or using peer support could increase the number of staff members delivering Walk and Talk in the future.

Future research could survey a larger sample of staff or service users to give a greater breadth of experiences. Using semi-structured interviews instead of questionnaires/ feedback forms could give more in-depth insight into staff or service user experiences.

B.3. Copy of the Animal Antiks and Walk and Talk staff questionnaire

Thank you for taking the time to fill out this survey. We are interested to hear about your thoughts and experiences with Animal Antiks/Walk and Talk – this feedback will help the future development of the sessions. All answers are anonymous, and may be analysed by the Increasing Physical Activity in Psychological Treatment (IPAcT) research team at UCL [*University College London*], to help with the development of these sessions. Outcomes from this analysis may form part of publications.

If you have any questions or issues, please contact Lia Marshall / Joshua Cane [*email address*].

Please answer the questions with as much detail as you feel able to give. If any questions not relevant to you please put 'N/A'.

1. Are you a staff member who has been trained in delivering Walk and Talk therapy?*
2. Have you been able to deliver Walk and Talk therapy with any service users that you have worked with since undertaking the training?*
3. Please provide details of any feedback (positive or negative) from any service users whom you worked with during Animal Antiks/Walk and Talk
4. How have you found interacting with service users during Animal Antiks sessions/ Walk and Talk?
5. (a) What worked well? And (b) what are the enabling factors to delivering Animal Antiks/Walk and Talk?
6. What didn't work so well during the Animal Antiks/Walk and Talk sessions?
7. What are the challenges to delivering Animal Antiks/Walk and Talk to more service users?
8. Please provide details of any feedback (positive or negative) from any service users whom you offered Animal Antiks,/Walk and Talk but who declined the sessions?
9. Overall, how feasible do you think delivering Animal Antiks/Walk and Talk is? [*Scale: 1 being not feasible at all, and 10 being extremely feasible*]
10. How could Animal Antiks/Walk and Talk be made more feasible?
11. Are there any types of clients you think that it works better for (or could do in the future?)
12. In your opinion, how has the delivery and impact of the sessions been affected by being outside and/or walking during sessions?
13. How has (or could) being outside and/or walking during the sessions affected your own wellbeing?

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B.4. Copy of the Animal Antiks service user feedback form

1. Today's date
2. How have you managed to introduce more physical activity into your schedule? [*free text*]
3. What impact has physical activity had on your wellbeing? [*free text*]
4. What changes have you noticed if you have increased your physical activity? [*free text*]
5. How do you plan to continue to incorporate physical activity as part of your toolbox? [*free text*]
6. Is the group what you expected? [*Responses: no/yes/somewhat*]
7. Is there anything which you think it would be particularly helpful for us to tell future participants about the group before they come? [*free text*]
8. What advice would you give someone who was thinking about doing this group? [*free text*]
9. How should we change or improve the group? [*free text*]

Abbreviations

-	not applicable
AOB	any other business
β	beta coefficient
BTT	Buckinghamshire Talking Therapies
iCope	Camden and Islington NHS Foundation Trust's NHS Talking Therapies service
CBT	cognitive behavioural therapy
CI	confidence interval
d	Cohen's d effect size
GAD-7	Seven-item Generalised Anxiety Disorder scale
HI	high intensity
IAPT	Increasing Access to Psychological Therapies (now NHS Talking Therapies)
iCope	Camden and Islington Psychological Therapies Service
IPAcT	Increasing Physical Activity in Psychological Treatment
IPAQ(-SF)	International Physical Activity Questionnaire (Short Form)
LI	low intensity
LTC	long-term condition
M	mean average
MET	metabolic equivalent of task
MH	mental health
N	total number of participants
n	number of participants
NICE	National Institute for Health and Care Excellence
NoMAD	Normalization MeAsure Development
NPT	Normalization Process Theory
n.s.	not significant
PA	physical activity
PHQ-9	Nine-item Patient Health Questionnaire
p or p-value	probability value
OR	odds ratio
SD	standard deviation
t	t-test (of significant differences)
UCL	University College London
X2	Chi-squared test

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