

Supplementary Material

Increasing exercise with a mobile app in people with Parkinson's disease: a pilot study

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Supplementary Table 1. Confidence questionnaire using smartphones

Questions	Exercise (<i>n</i> = 25)	Dropouts (<i>n</i> = 16)	<i>P</i> value
Q1. I can distinguish the function of the button on the smartphone.	3.0 (3.0, 4.0)	3.0 (3.0, 4.0)	0.874
Q2. I can change the wallpaper of the smartphone	3.0 (2.0, 4.0)	3.0 (2.0, 3.0)	0.189
Q3. I can charge a smartphone.	4.0 (4.0, 4.0)	4.0 (4.0, 4.0)	0.601
Q4. I can text or send emails using a smartphone	4.0 (3.0, 4.0)	3.5 (2.0, 4.0)	0.265
Q5. I know how to use a search engine (Google, Naver or Daum)	4.0 (2.5, 4.0)	3.0 (2.3, 4.0)	0.870
Q6. I can cope with unknown numbers calling and robocalls.	4.0 (3.0, 4.0)	3.0 (3.0, 4.0)	0.168
Q7. I know how to use the Internet on my smartphone.	4.0 (3.0, 4.0)	4.0 (2.3, 4.0)	0.872
Q8. I can write notes or documents on my smartphone	3.0 (2.0, 4.0)	3.0 (2.0, 3.8)	0.197
Q9. I know how to buy merchandise on my smartphone	3.0 (2.0, 4.0)	2.5 (2.0, 4.0)	0.551
Q10. I can calculate the four-fundamental arithmetic operations (+, -, ×, ÷) with my smartphone.	4.0 (3.0, 4.0)	3.0 (2.0, 4.0)	0.015
Q11. I can copy and paste text on my smartphone	3.0 (2.0, 4.0)	3.0 (2.0, 4.0)	0.543
Q12. I can load and save files according to the file format on my smartphone.	3.0 (2.0, 4.0)	2.0 (1.0, 3.0)	0.025
Q13. I can take a picture and send it to others.	4.0 (3.0, 4.0)	3.0 (3.0, 4.0)	0.085
Q14. I can play music on my smartphone	4.0 (3.0, 4.0)	4.0 (2.3, 4.0)	0.927
Q15. I can send a social network service (SNS) messaging to others.	4.0 (4.0, 4.0)	4.0 (3.0, 4.0)	0.280
Total	51.0 (43.5, 59.5)	47.0 (38.0, 55.3)	0.099

Mann-Whitney test was used for statistical analysis.

Supplementary Table 2. Satisfaction survey and adverse events

Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Q1. I am satisfied with the app.	12 (46.2%)	13 (50.0%)	1 (3.8%)	0 (0.0%)	0 (0.0%)
Q2. Using the app was generally helpful to me.	13 (50.0%)	11 (45.3%)	2 (7.7%)	0 (0.0%)	0 (0.0%)
Q3. I am satisfied with the exercise program including the app.	8 (30.8%)	14 (53.8%)	4 (15.4%)	0 (0.0%)	0 (0.0%)
	Much too long	Too long	Just right	Too short	Much too short
Q4. The duration of each exercise video was:	0 (0.0%)	3 (11.5%)	15 (57.7%)	6 (23.1%)	2 (7.7%)
Q5. Adverse events (fall, near falls, trauma associated with the using app)			0 (0.0%)		

Supplementary Table 3. Comparison between the participants who completed the program and dropouts

	Complete 2-week program (<i>n</i> = 25)	Dropouts (<i>n</i> = 16)	<i>P</i> value
Age (y)	64.1 (58.8, 70.1)	65.8 (57.2, 72.6)	0.877 ^b
Male (%)	13 (52.0%)	10 (62.5%)	0.540 ^d
Disease duration (m)	23.0 (16.0, 63.0)	35.0 (11.5, 63.5)	0.688 ^c
UPDRS III	11.0 (7.5, 14.5)	13.0 (8.3, 15.8)	0.817 ^b
H&Y stage	2.0 (1.0, 2.0)	2.0 (1.0, 2.0)	0.906 ^c
LEDD (mg/day)	175.0 (120.0, 450.0)	255.0 (185.0, 476.3)	0.228 ^c
MMSE	29.0 (28.0, 30.0)	29.0 (27.0, 30.0)	0.923 ^c
Education (y)	12.0 (9.0, 14.0)	12.0 (9.0, 16.0)	0.762 ^c
BMI (kg/m ²)	25.2 (23.3, 28.1)	23.0 (20.2, 25.4)	0.030^b
No. of completed exercises	26.0 (14.5, 34.0)	2.0 (1.0, 3.0)	< 0.001^c
IPAQ-SF ^a	1386.0 (1035.0, 2868.0)	1264.0 (1013.9, 2746.5)	0.718 ^c
Vigorous ^a	240.0 (0.0, 720.0)	280.0 (0.0, 660.0)	0.902 ^c
Moderate ^a	480.0 (10.0, 1120.0)	480.0 (40.0, 720.0)	0.978 ^c
Walking ^a	792.0 (495.0, 1287.0)	800.3 (336.6, 1179.8)	0.698 ^c
PDQ-39 SI	17.2 (9.1, 26.2)	13.5 (7.1, 22.5)	0.439 ^c
Mobility	11.3 (5.0, 30.0)	10.0 (3.1, 24.4)	0.579 ^c
ADL	16.7 (5.2, 24.0)	6.3 (0.0, 19.8)	0.160 ^c
Emotional well-being	18.8 (5.2, 35.4)	20.8 (8.3, 36.5)	0.846 ^c
Stigma	18.8 (6.3, 37.5)	18.8 (7.8, 42.2)	0.801 ^c
Social support	0.0 (0.0, 6.3)	0.0 (0.0, 14.6)	0.884 ^c
Cognition	18.8 (6.3, 31.3)	12.5 (12.5, 25.0)	0.568 ^c
Communication	8.3 (0.0, 22.9)	0.0 (0.0, 22.9)	0.224 ^c
Bodily discomfort	25.0 (8.3, 50.0)	25 (10.4, 33.3)	0.635 ^c

Abbreviation: UPDRS, Unified Parkinson's Disease Rating Scale; H&Y, Hoehn and Yahr; LEDD, levodopa equivalent daily dose; MMSE, Mini-Mental State Examination; BMI, body mass index; IPAQ-SF, International Physical Activity Questionnaire-Short Form; PDQ-39 SI, Parkinson's Disease Questionnaire-39 Summary Index; ADL, Activities of Daily Living.

Data are presented as the median and interquartile range (IQR).

^aThe amount of exercise is presented as metabolic equivalent minutes per week (MET-mi/week).

^bStudent's *t*-test was used for statistical analysis.

^cMann-Whitney test was used for statistical analysis.

^dChi-squared test was used for statistical analysis.