

A guided walking protocol for the amelioration of cognitive functions in subjects with schizophrenia. A pilot study

Mandini S¹, Morelli M¹, Belvederi Murri M², Grassi L², Masotti S¹, Simani L³, *Zerbini V¹, Raisi A¹, Piva T¹, Grazzi G^{1,4,5}, Mazzoni^{1,4}

¹Center for Exercise Science and Sports, Department of Neuroscience and Rehabilitation, University of Ferrara; ²Institute of Psychiatry, Department of Neuroscience and Rehabilitation, University of Ferrara; ³Public Mental Health Department, AUSL Ferrara, Ferrara, Italy; ⁴Public Health Department, AUSL Ferrara, Ferrara, Italy; ⁵Healthy Living for Pandemic Event Protection (HL-PIVOT) Network, Chicago, IL, USA

Background

Aim of the study was to enroll a group of individuals with schizophrenia in a long-term moderate-intensity physical activity program and to evaluate its effects on their cognitive functions and cardiovascular risk factors.

Methods

Study population:

Forty sedentary patients diagnosed with schizophrenia (mean age 46.4 ± 9.6) followed by the Public Mental Health Department of Ferrara were included in the study. (Clinical trial registration: ISRCTN14763786)

Study design:

28 of them followed a 1-year walking program consisting of two guided walking sessions/week, while 12 maintained their sedentary lifestyle and followed the usual Cognitive Rehabilitation program. To the participants following the walking program VO₂peak and walking speed were assessed at baseline and at the end of the program. All participants were evaluated on blood pressure and anthropometric variable. Cognitive functions were assessed with the Screen for Cognitive Impairment in Psychiatry (SCIP) and with the Frontal Assessment Battery (FAB) questionnaires.

Results

The 20 participants completing the walking program displayed significant improvements in cognitive functions (d_{ppc2} 0.35 for SCIP and 0.26 for FAB), with a positive correlation between SCIP score and the number of sessions attended ($R = 0.86$, $p < 0.001$), evident in the patients attending to at least 75 of the 100 walking sessions. (Figure1)

Walking speed and VO₂peak increased significantly and a decrease of body weight, BMI, systolic and diastolic blood pressure was also observed.

The 12 CG (Control Group) patients maintaining the sedentary lifestyle did not display improvements of cognitive functions.

Results are reported in the Table1.

Figure 1. Relationship between number of walking session attended and the increase in SCIP score after 1-year of guided walking.

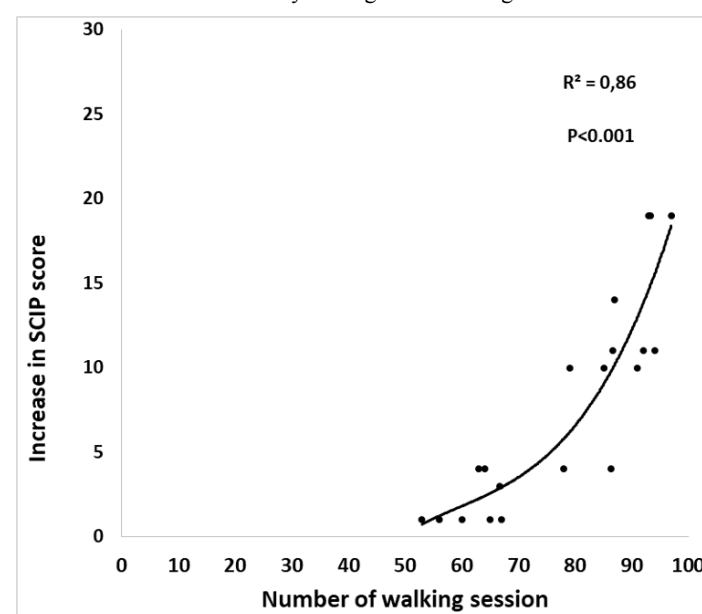


Table 1. Values of the variables considered at baseline and after 1-year of guided walking. Values are reported as mean \pm standard deviation.

	Walking group (n= 20)			Control group (n= 12)		
	At baseline	After 1-year	P	At baseline	After 1-year	P
Age (yrs)	44.0 \pm 8.7	-		48.8 \pm 12.6	-	
Gender (Male/Female)	15/13	-		8/4	-	
Weight (kg)	87.6 \pm 16.1	84.9 \pm 14.5	0.03	85.6 \pm 13.1	85.9 \pm 12.9	0.43
BMI (kg/m ²)	30.8 \pm 5.3	29.8 \pm 4.5	0.04	30.2 \pm 3.6	29.4 \pm 3.6	0.23
Waist circumference (cm)	107.7 \pm 13.1	105.8 \pm 10.7	0.70	105.4 \pm 7.7	106.2 \pm 8.0	0.06
Systolic blood pressure (mmHg)	125.6 \pm 11.8	117.7 \pm 7.7	0.001	129.0 \pm 12.8	128.8 \pm 11.6	0.80
Diastolic blood pressure (mmHg)	83.0 \pm 5.4	78.7 \pm 6.4	0.02	82.9 \pm 5.8	81.7 \pm 6.2	0.33
Walking speed (km/h)	4.8 \pm 0.5	5.1 \pm 0.7	0.01			
Estimated VO ₂ peak (ml/kg/min)	28.3 \pm 6.9	32.2 \pm 4.9	0.01			

Conclusions

The improvement of cognitive functions is significantly related to the number of walking sessions attended by participants with schizophrenia.

The walking program, guided by exercise specialists, proved to be an enjoyable activity for people with mental disorder.

References

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