The Effects of Campus Forest-Walking Program for College Students in Korea: Evidence From 3 Months Follow-Up

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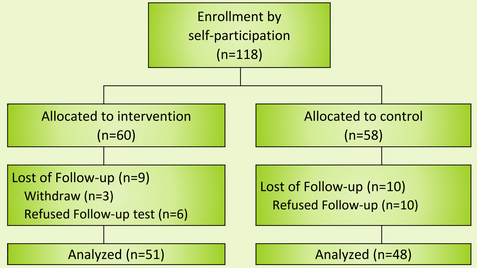
Purpose

Despite of an increased interest in health promotion, it is not easy for college students to perform and maintain an appropriate level of physical activity. This study conducted a campus forest-walking program for undergraduate and graduate students in one university during their lunchtime using the campus forest, and it aims to determine the immediate and long-term effects in physical and psychological aspects.

Figure 1. Recruitment of participants



Methods

Design: Non-equivalent control group pre-posttest design.

Participants: 118 students (experimental group=60, control group=58). Finally, 51 in intervention group and 48 in control group were included in the data analysis.

Intervention: 6-week campus forest-walking program and lecture of stress management. The intervention group participated once a week together during lunchtime for 6 weeks. Data collection: Pretest, posttest, and 3-month follow-up after finishing the program

Measurement: Self-report questionnaires and physiological measurements using blood analysis, body composition analysis, bone density, and heart-rate viability (HRV).

Figure 2. The Campus Forest-Walking Program

Table 1. Health Promotion behavior between Groups according to the Time Intervals

Variables	Time	Exp. M±SD	Cont. M±SD	Source	F	p
Health promoting behavior	pretest	126.26± 7.80	126.44± 18.46	G	2.58	.112
	posttest	134.41± 15.87	125.15± 20.12	T	5.19	.006
	f/u test	133.78± 18.15	126.54± 20.11	G*T	7.27	.001

Exp.=Experimental group; Cont.=Control group; G=Group; T=Time.

Table 2. Physical and Mental Health between Groups according to the Time Intervals

Variables	Time	Exp. M±SD	Cont. M±SD	Source	F	p
Percent body fat	pretest	24.09±6.79	23.47±6.38	Group	0.41	.524
	posttest	24.42±6.52	22.91±6.96	Time	0.62	.540
	f/u test	23.73±6.58	23.33±6.95	G*T	3.41	.035
Para-sympathetic nerve activity	pretest	56.27±9.34	55.88±10.29	Group	4.11	.045
	posttest	58.02±9.20	54.07±10.43	Time	0.18	.836
	f/u test	58.40±8.74	52.69±11.90	G*T	3.69	.027
Depression	pretest	7.86±5.40	7.50±5.34	Group	0.92	.340
	posttest	5.84±5.00	7.38±6.02	Time	9.59	.000
	f/u test	4.94±4.82	6.54±5.89	G*T	3.15	.045
Cholesterol, total	pretest	176.59±31.79	176.25±30.73	Group	0.09	.772
	posttest	175.69±28.70	177.15±27.80	Time	2.01	.137
	f/u test	177.73±29.53	181.50±29.82	G*T	0.63	.535
HDL	pretest	65.06±15.20	68.58±14.07	Group	0.80	.375
	posttest	64.22±14.65	65.81±12.42	Time	1.86	.161
	f/u test	64.82±16.20	66.92±15.63	G*T	0.46	.635
LDL	pretest	103.49±29.01	97.75±26.91	Group	0.19	.663
	posttest	100.84±26.80	99.25±22.70	Time	3.97	.022
	f/u test	103.75±26.70	104.69±24.51	G*T	1.51	.225
TG	pretest	76.92±42.46	71.90±35.53	Group	0.07	.790
	posttest	80.24±46.40	85.60±55.16	Time	3.08	.048
	f/u test	73.59±41.43	79.67±45.16	G*T	1.53	.220
Bone density	pretest	-0.84±0.92	-0.90±1.05	Group	0.33	.565
	posttest	-0.50±0.96	-0.55±1.03	Time	27.04	.000
	f/u test	-0.66±0.94	-0.57±0.91	G*T	1.52	.224

HDL: high-density lipoprotein; LDL: low-density lipoprotein; TG: triglyceride

Results

Health promoting behaviors (F=7.27, p=.001), percent body fat (F=3.41, p =.035), para-sympathetic nerve activity (F=3.69, p =.027) were significantly different between two groups.

Depression (F=3.15, p =.045) was significantly decreased in the experimental group after the intervention compared to the control group. This study is meaningful because we confirmed the effects in both of subjective and objective data, and in both of physical and psychological health, and testing the lasting effects.

Conclusions

The campus-walking program targeting undergraduate and graduate students during lunchtime is an efficient strategy to promote their physical and psychological health.

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