



The Effects of the Spinning Exercise Intervention among Hospital Workers with Metabolic Syndromes in a Medical Center

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Background/Problem/Objective

Many surveys indicate that a majority of hospital workers do not take part in vigorous physical activity, are overweight or obesity, and have metabolic syndromes. How to improve this problem more effectively has become an important issue in health promotion hospitals. Spinning is identified as an effective exercise for burning calories. The purpose of this study is to explore impacts of spinning exercise and core muscle training intervention among hospital workers with metabolic syndromes in a medical center.

Methods/Intervention

Thirty hospital workers with metabolic syndromes in a medical center were recruited to participate in the program. Spinning exercise twice a week, nutrition and healthy food promotion courses were included in the program. The intervention was implemented continuously 12 weeks, from April to July 2018. Physical fitness tests and biochemical examinations including cholesterol, triglyceride, HDL-C, SGPT, Ac sugar, creatinine, and uric acid of hospital workers were investigated before and after the program. Comparisons of pre- and post- data were analyzed by proper statistical methods.

Results (of evaluation)

Results of this study showed that eleven hospital workers reduce their problems with metabolic syndromes. Biochemical indexes of blood pressure, cholesterol, triglyceride, HDL-C, and Ac sugar significantly reduced ($p < 0.05$). BMI (Body Mass Index), skeletal muscle weight, body fat percentage, back strength, grip strength, a minute bent-knee sit-up, sit and reach, 3-minute step test were significantly improved ($p < 0.05$) after the intervention of the spinning exercise program.

Table1 blood parameters before and after comparison table N=30

variable	before		after		P
	M	SD	M	SD	
Waist circumference	90.5	10.9	88.4	11	0.000*
Systolic blood pressure(mmHg)	132.7	15.8	127.9	11.9	0.000*
Diastolic blood pressure (mmHg)	83.2	11.8	82	10	0.000*
Ac sugar (mg/dl)	101	22.8	100.8	16.8	0.000*
HDL-C (mg/dl)	43.8	7.1	41.9	6.9	0.000*
Triglyceride (mg/dl)	157.7	82.6	158.1	73.6	0.000*

* $p < 0.05$

Table2. physical fitness before and after comparison table N=27

variable	before		after		P
	M	SD	M	SD	
BMI	29.3	4	28.8	3.8	0.000*
Skeletal muscle weight (kg)	25.6	4.7	25.8	4.7	0.000*
Body fat percentage (%)	37.4	6.5	36.5	6.5	0.000*
Back strength (kg)	67.4	22.8	77	24.1	0.032*
Grip strength (kg)	36	9.1	37	8.3	0.000*
A minute bent-knee sit-up (times/second)	20.7	9.5	20.1	10.2	0.000*
Sit and reach (cm)	24.5	10.8	25.2	10	0.000*
Reaction(milliseconds)	366.9	111.2	334.2	82.2	0.09
3-minute step test	53	7.5	53.3	8.1	0.005*

* $p < 0.05$

Conclusions

Core muscles training program interventions in education and training have achieved remarkable results. However, three of the musculoskeletal discomfort related cases were not suitable for certain sports or due to certain sports patterns to exacerbate musculoskeletal discomfort due to old musculoskeletal injuries. Therefore, suggested that should invite physiotherapists and functional therapists to form a cross disciplinary staff health promotion team in order to promote the curriculum of musculoskeletal discomfort through communication, cooperation and integration to make the courses more professional and individual.

