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Effect of Elastic Band Exercise, Brisk Walking and the Diabolo Exercise on the Serum Lipid Level of Women with dyslipidemia between 60 to 69 Years Old

Lin Zhou, Lan Zhang, Guohao Lin, Guangyan Cao, Xiaojing Chen
Shan Dong Sport University

Objective This study investigated the effect of elastic band exercise, brisk walking and the diabolo exercise on the serum lipid level of abnormal blood lipids women between 60 to 69 years old.

Methods 252 subjects were randomly divided into the elastic band exercise group (EBG), the brisk walking group (BWG), the diabolo exercise group (DEG) and the control group (CG), each group of 63 people. In the end, 186 people ($N_{EBEG}=63$, $N_{BWG}=45$, $N_{DEG}=32$, $N_{CG}=46$) completed all the tests in 12 weeks due to various reasons, such as withdrawal, travel abroad, and hospitalization. The EBG and the DEG respectively carry on the self-braiding and the Diabolo exercise (DE) training for 1 h, 3 times per week for 12 weeks. Participants in the BWG wore pedometers for brisk walking, 5 times per week, and 8,000 to 10,000 steps per time. The CG did not intervene. Measurement on height, body weight, TG, TC, HDL-C, LDL-C were made at two time points—baseline, 12 weeks.

Results After 12 weeks of exercise, TG, TC and LDL-C levels of the EBG, BWG and DEG were significantly lower than those in the pre-test group, and the difference was statistically significant, there was no significant change in the control group. The average level of HDL-C in the BWG and DEG was higher than that before the experiment, and the difference was statistically significant. The average level of TG change rate ($P_{50}=0.16$) of DEG was greater than EBG ($P_{50}=0.09$) and BWG ($P_{50}=0.05$), all of the experimental group were greater than the CG, and the difference was statistically significant. The average level of TC change rate of the EBG, BWG and DEG was greater than the CG, and the difference was statistically significant. The average level of HDL-C change rate in both BWG ($P_{50}=0.06$) and DEG ($P_{50}=0.14$) was greater than that of the EBG ($P_{50}=0.01$) and the CG ($P_{50}=0$), and the difference was statistically significant. The average level of LDL-C change rate of the EBG ($P_{50}=0.06$) and the BWG ($P_{50}=0.13$) was larger than that of the CG ($P_{50}=-0.04$) and the DEG ($P_{50}=-0.08$), and the difference was statistically significant. The EBG is compared with the BWG, and the comparison between DEG and CG, the difference was not statistically significant.

Conclusions The TG level in the blood was significantly reduced in the EBG, BWG and DEG, and the effect of the diabolo exercise (DE) was better than that of the elastic band exercise (EBE) and the brisk walking (BW). The EBE, BW and DE can significantly reduce the TC level in blood. Both BW and EBE can raise the level of HDL-C in the blood. Both the EBE and BW can reduce the level of LDL-C in the blood. Therefore, all three types of exercise can effectively regulate the Serum Lipid Level of elderly women with dyslipidemia and reduce the risk of ASCVD.