PHYSICAL ACTIVITY AND MUSIC ON BODY COMPOSITION, FITNESS AND METABOLIC PARAMETERS AMONG OBESE SINGAPORE WOMEN

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Globesity, permeating Asia, has not excluded Singapore. With 10.8% obesity in 2010, economic growth of this high GDP country will be affected if not overcome. Time-economical high intensity physical activity is a treatment modality for obesity. PURPOSE: To investigate whether the obese, despite their functional limitations, can augment positive results on body composition, fitness and metabolic parameters, when executing high intensity exercises (work intervals >80% of maximal heart rate) aided by music. METHODS: Twelve-week randomized-controlled trial, experimental design on overweight/obese (BMI>24.9 kg/m2) adult Singapore women (N=92): Treatment A = exercise+synchronous music (n=31), Treatment B = exercise+asynchronous music (n=31) and Control C = non-music exercise (n=30). Clinical examinations, anthropometric and fitness evaluations were carried out pre and post intervention. Analysis: IBM SPSS Statistics v.22 with repeated measure (pre-post-tests) and SPANOVA p < 0.05. RESULTS: Significant differences in all parameters in within-subjects-comparisons Time 1 to Time 2 of intervention. BMI: pre=32.62 ± 0.85, post=30.75 ± 0.83, p=0.00<0.05; WEIGHT LOSS: pre=78.50 ± 3.25, post=73.92 ± 3.13, p=0.00<0.05; BODY FAT: pre=34.72 ± 3.02, post=31.69 ± 3.02, p=0.00<0.05; WAIST: pre=36.52 ± 3.03, post=34.34 ± 3.30, p=0.00<0.05; PUSH-UP: pre=8.37 ± 0.55, post=18.70 ± 0.68, p=0.00<0.05; CURL-UP: pre=9.46 ± 3.05, post=21.82 ± 3.04, p=0.00<0.05; SQUAT: pre=11.39 ± 3.18, post=31.16 ± 3.50, p=0.00<0.05; CHOLESTEROL: pre=205.46 ± 3.69, post=188.95 ± 3.28, p=0.00<0.05; LDL: pre=125.39 ± 3.14, post=116.79 ± 3.27, p=0.00<0.05; HDL: pre=57.22 ± 3.11, post=52.91 ± 3.02, p=0.00<0.05; TRIGLYCERIDES: pre=120.23 ± 3.42, post=95.76 ± 3.24, p=0.004<0.05; BLOOD GLUCOSE: pre=98.95 ± 4.72, post=92.64 ± 3.58, p=0.037<0.05. For between-subjects-comparison, Curl-Up reported significant difference with Synchronous Music and Controls (pre=9.48 ± 3.72, post=26.32 ± 3.10, p=0.037<0.05 vs. pre=8.73 ± 3.50, post=18.67 ± 3.98, p=0.023<0.05). CONCLUSIONS: Results proved positively for obesity fitness management. Physical activity is effective in all groups, notwithstanding music or non-music. Cardio-metabolic profile (exception of HDL - possible explanation being inadequate time and nil diet intervention) were improved. Non-music and synchronous music are ergogenically effective for Curl-Up fitness. Original music composition + Prediction Formulae (weight loss/waist circumference) - novel findings generated from study.

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