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PHYSICAL ACTVITY 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 3 0.85, post=30.75 3 0.83, p=0.00<0.05; WEIGHT LOSS: pre=78.50 3 1.25, post=73.92 3 1.13, p=0.00<0.05; BODY FAT: pre=34.72 3 0.32, post=31.69 3 0.29, p=0.00<0.05; WAIST: pre=36.52 3 0.37, post=34.34 3 0.30, p=0.00<0.05; PUSH-UP: pre=8.37 3 0.55, post=18.70 3 0.68, p=0.00<0.05; CURL-UP: pre=9.46 3 0.59, post=21.82 3 0.84, p=0.00<0.05; SQUAT: pre=11.39 3 1.18, post=31.16 3 1.50, p=0.00<0.05; CHOLESTEROL: pre=205.46 3 3.69, post=188.95 3 2.88, p=0.00<0.05; LDL: pre=125.39 3 3.14, post=116.79 3 2.67, p=0.00<0.05; HDL: pre=57.22 3 1.11, post=52.91 3 0.82, p=0.00<0.05; TRIGLYCERIDES: pre=120.23 3 9.42, post=95.76 3 3.24, p=0.004<0.05; BLOOD GLUCOSE: pre=98.95 3 4.72, post=92.64 3 2.58,p=0.037<0.05. For between-subjects-comparison, Curl-Up reported significant difference with Synchronous Music and Controls (pre=9.48 3 7.22 post=26.32 3 10.37 vs. pre=8.73 3 5.09 post=18.67 3 5.98, 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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