

## HEART RATE VARIABILITY OF OBESE AND NON-OBESE FILIPINO ADOLESCENTS

### **Abstract**

*The purpose of this research was to compare the differences in heart rate variability (HRV) parameters between obese and non-obese individuals from spontaneous breathing (SB) and paced breathing (PB). Totally 20 subjects, healthy male adolescents participated in the study: 10 obese (age:  $17.1 \pm 0.74$  yrs; height:  $173.5 \pm 4.94$  cm; weight:  $103.9 \pm 16.4$  kg; %BF =  $29.0 \pm 5.68$ ; waist circumference (WC):  $102.8 \pm 7.8$  cm; systolic blood pressure (SBP):  $119.2 \pm 5.9$  mmHg; diastolic blood pressure (DBP):  $74.6 \pm 6.7$ ; physical activity level:  $36.9 \pm 9.48$ ) and 10 non-obese (age:  $16.5 \pm 0.71$  yrs; height:  $166.7 \pm 5.33$  cm; weight:  $55.1 \pm 10.6$  kg; %BF:  $10.5 \pm 5.22$ ; SBP:  $100.0 \pm 11.5$  mmHg; WC:  $68.3 \pm 6.4$ ; DBP:  $62.6 \pm 6.6$ ; physical activity level:  $41.1 \pm 14.8$ ) They underwent two 5-minute heart rate recordings for SB and metronome guided PB respectively. PB was adjusted from the respiratory rate during SB. Results from two-way repeated measures ANOVA revealed non-significant differences in the standard deviation of N-N intervals (SDNN), low frequency (LF), peak LF (LFpeak), relative contribution of LF (%LF), LF normalized unit (LFnu), high frequency (HF), peak HF (HFpeak), relative contribution of HF (%HF), HF normalized unit (HFnu), total power (TP), LF to HF ratio (LF/HF), instantaneous beat to beat variability (SD1), continuous beat to beat variability (SD2), and SD1 to SD2 ratio (SD1/SD2). In conclusion, metronome guided PB adjusted from SB rate did not produce any significant difference in time, frequency and non-linear domains of HRV between asymptomatic obese and non-obese adolescents.*

**Key words:** heart rate variability, obesity, adolescence

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