



POOR INHIBITORY CONTROL IS ASSOCIATED WITH BEING OVERWEIGHT / OBESE IN ADOLESCENTS

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ABSTRACT

Inhibitory control is the ability to inhibit irrelevant information or ongoing responses as required by the situation. It's vital in academic achievements. A cross sectional study was carried out to assess the effect of gender and overweight/obesity on inhibitory control among a group of post advanced level (A/L) students in Maharagama Educational Division. Students who had sat for A/L examination for the first time in 2014 without any history of physical, neurological or developmental abnormality that affect cognition were included. Students with a Body Mass Index (BMI) less than 18.5 were excluded from the sample. Cutoff point for being overweight/ obese was taken as BMI greater than 23kgm⁻² as given by WHO for Asian countries. Inhibition was assessed through Go/No-Go task and Stroop task, testing ability to inhibit prepotent response and interference control respectively. Number of errors was calculated as the measure of inhibition. Independent sample t test was used to assess the significant difference. Significant level was kept at p <0.05. Study sample consisted of 102 adolescents with a mean age of 19.45 ± 0.5 years and 51% were females. Mean BMI of the study population was 22.46kg/m² ± 2.44 of which 51% were in obese/overweight category. Males had a significantly higher mean BMI when compared to females, (23.5kg/m² ± 2.50 vs. 21.4kg/m² ± 1.94, and p < 0.001). Mean scores of Go/No-Go task and Stroop task in the study sample were 1.3 ± 2.47 and 2.5 ± 2.10 respectively. Compared to females, males had significantly less errors in Go/No-Go task (0.4 ± 0.67 vs. 2.0 ± 3.03, p < 0.01) while females had significantly less errors in Stroop task (3.6 ± 2.35 vs. 1.4 ± 1.25, p < 0.01). Students with normal BMI had performed better in Go/No-Go task and stroop tasks (1.1 ± 1.68 vs. 1.5 ± 3.02, p = 0.163 and 2.1 ± 1.69 vs. 2.8 ± 2.51, p < 0.01), but only the scores in the Stroop tasks had reached statistically significant level. It can be concluded that males in our study sample had better inhibitory control on prepotent response and females had better inhibitory control over interference control, while those with normal BMI had better inhibition of both prepotent response and interference control inhibitory tasks.

Keywords: Cognition, Inhibitory Control, Obesity, Overweight, Adolescents

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