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COGNITIVE FUNCTIONS AND BODY MASS INDEX: IS THERE A RELATIONSHIP? PRELIMINARY STUDY AMONG A SAMPLE OF PERIURBAN YOUNG ADULTS IN COLOMBO DISTRICT, SRI LANKA

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Recent studies have shown that obesity and overweight are a risk factor for poor cognitive functions. Executive functions (EFs) are a group of cognitive processes essential for goal directed behaviours. Impairment of EFs have been associated with academic and behavioural problems. The working memory (WM) and inhibition are two of the core executive functions (EFs) that are continued to develop and mature in late adolescence. Therefore, the aim of this study was to determine the effect of body mass index (BMI) on executive functions among periurban young adults living in Piliyandala Medical Officer of Health (MOH) division, Colombo District, Sri Lanka. A descriptive cross sectional study was conducted on young adults aged 21-25 years selected by simple random sampling. Computerized executive function tasks (EF tasks) were performed to assess the executive functions. EFs were assessed through visuospatial working memory task (VSWM) and inhibition with go/no-go and stop signal tasks (SST). Correlation was assessed through spearman correlation coefficient (r) and the level of significance was set at $p < 0.05$. Study sample consisted of 41 young healthy adults. Majority of the sample was female (61%) and mean age was 23.07 ± 1.63 years. Mean BMI was $23.82 \pm 3.02 \text{ Kg m}^2$ and 43% were overweight or obese. The mean score of VSWM was 21.46 ± 7.23 SD. In inhibition tasks, mean scores of the commission error of SST and incorrect responses of go/no go tasks were 2.12 ± 1.36 SD and 0.72 ± 0.91 SD respectively. Further, a negative significant correlation coefficient was observed in VSWM ($r = -0.495$ & $p < 0.001$) while no significant correlation coefficient was observed in inhibition tasks (SST $r = -0.098$ & $p = 0.543$ and go/no go $r = 0.1888$ $p = 0.382$). Study shows that VSWM was significantly negatively associated with BMI but there was no significant association between inhibition tasks and BMI. This may be due to small study sample.

Keywords: Executive functions, Body Mass Index