



THE EFFECT OF SCHOOL ENVIRONMENT AND PEER RELATIONSHIP ON EXECUTIVE FUNCTIONS IN A SAMPLE OF ADOLESCENTS - A PRELIMINARY STUDY

K.A.T. Nayanapriya*, P.T.M.A. Nanayakkara*, M.I.S. Silva*, B.C. Guruge¹, Chandana Hewage*

* Department of physiology, Faculty of Medical Sciences, University of Sri Jayewardenepura, Nugegoda
¹National Hospital of Sri Lanka

Executive functions (EFs) are prefrontal cortex (PFC) mediated higher cognitive functions essential for maturation of cognition and appropriate behavior. The PFC can be affected by various adverse environmental and stress situations faced by adolescents leading to various behavioral and cognitive abnormalities. Preparation for Advanced Level examination is considered to be such a situation where conflict of interest can occur between teacher's demand and child's expectation.

This was a part of an ongoing study conducted to assess how demands in school and peers can affect the performances of executive function tasks (computerized visuo-spatial working memory (VSWM) and verbal working memory (VBWM) tasks) in a sample of adolescents who sat for the A/L examination in 2014 for the first time. The school and peer effects were assessed through a self-administered questionnaire with higher scores reflecting more supportive environment for the adolescents. Items that assessed in the school environment includes emotional support, enriched environment etc. Correlation was assessed through spearman correlation coefficient(r) and significant level was kept at $p < 0.05$.

Study sample was comprised of 35 children within Maharagama educational zone with a mean age of 19.5 years (± 0.51) and 48.6 % of them were girls. Correlation between school environment and WM tasks were statistically non-significant ($r=0.02$, $p=0.93$ and $r=0.11$, $p=0.55$). Correlation between peer relationship and WM tasks were 0.35 ($p=0.04$) and 0.16 ($p=0.36$) respectively. Correlation between GCE A/L Z-score and visuo-spatial and verbal WM tasks were 0.15 ($p=0.41$) and 0.08 ($p=0.66$). All were positively correlated. Only the correlation between peer relationship and VSWM was statistically significant. This may be due to the smaller sample size.

Keywords: *School environment, Peer relationship, Executive functions, Working memory, GCE A/L Z-score*