

## THE EFFECT OF HOME ENVIRONMENT ON INHIBITORY CONTROL AMONG A GROUP OF ADOLESCENTS - PRELIMINARY RESULTS

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### Introduction:

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

### Methods:

This was a part of an ongoing study conducted to assess how demands in home environment can affect the performances of executive function tasks (ability to inhibit prepotent response and interference control) in a sample of adolescents who sat for the A/L examination in 2014 for the first time. The home effects were assessed through a self-administered questionnaire and executive functions were assessed by three different computerized executive function tasks (stop signal task (SS), go/no-go (GN) task and stroop (ST) tasks). Items that assessed in the home environment includes emotional support, enriched environment and encourage maturity. Higher the scores in inhibitory tasks, lower the inhibitory control. Correlation was assessed through spearman correlation coefficient ( $r$ ) and significant level was kept at  $p < 0.05$ .

### Results:

Study sample was comprised of 35 children within Maharagama education zone with a mean age of 19.5 years ( $\pm 0.51$ ). Mean scores for SS, GN and ST tasks were 2.86 (SD 1.96), 1.44 (SD 2.34) and 3.17 (SD 2.86) respectively. Negative correlations were observed between inhibitory task scores (SS, GN and ST) and emotional support ( $r = -0.3$ ,  $p = 0.08$  and  $r = -0.14$ ,  $p = 0.44$  and  $r = -0.1$ ,  $p = 0.56$ ) and encourage maturity ( $r = -0.23$ ,  $p = 0.2$  and  $r = -0.09$ ,  $p = 0.64$  and  $r = -0.03$ ,  $p = 0.86$ ). Correlation between Z-score and home environment (enriched environment, emotional support and encouraged maturity) were positively correlated [0.28 ( $p = 0.13$ ), 0.36 ( $p = 0.05$ ) and 0.04 ( $p = 0.83$ ) respectively].

### Conclusion:

Among adolescents those who got higher scores in emotional support and encourage maturity, have higher inhibitory control but it was statistically not significant probably due to smaller sample size. There was a positive correlation between Z-score and home environment but only the correlation between Z-score and emotional support was statistically significant ( $p = 0.05$ ).