Abstract

Recent published research on the negative impact of poverty on neurocognitive development has been broader in scope and has analyzed more in depth the issue. Infant malnutrition, inadequate medical care, exposure to stress and violence (Shore, 1997), weak speech stimulation and scarce organization of the environment are risk factors conditioning self regulation, as assessed in previous research (Musso, 2005; Ninio, 1980; Peralta de Mendoza, 1997; Wood, Bruner & Ross, 1976). Nevertheless, there is a need for further study of the mechanisms and various ways in which poverty exercises such negative impact. This work describes and analyzes the effects of some of the mechanisms present in poverty which impact on the development of executive functions such as: interference control and planning, at the beginning of schooling. The sample was conformed by 80 children, between 6 and 10 years of age, boys and girls, attending the first grade of General Basic Education (2005 cohort, in República Argentina), at a school included in the National Plan of a Thousand Schools below Poverty Level. The group deemed at risk by poverty displayed the following indicators: children with high levels of malnutrition, high percentage of students who repeat courses which accounts for the number of older children, high percentage of unemployed parents, and with low levels of schooling. A control group was used that was formed by children attending a city school, not part of the Plan of One Thousand Schools under the Poverty Line; their parents had finished obligatory or high level education, they were merchants, employees or professionals. The instruments applied were: Simon Says Game (La Voie, Anderson, Fraze & Johnson, 1981, see Zelazo, 1996) to assess the executive or response control through the use of a rule, The Hanoi Tower (two rings version) to assess planning, a Self report to assess the childrens' perception of parental styles (mother / father version) (Richaud de Minzi, 2006), and the Behavioural Observation Guide for Children (Ison & Fachinelli, 1993) that provides a quick overview of type and frequency of behavior problem in the children, were administered. Significant differences in interference control and problem solving were found between children exposed to poverty conditions and children not exposed. The perception of a hostile parental control and the child's age, were predictive variables of the capacity to plan. A statistically significant influence was found for Control by Withdrawal of relationships by mothers for hyper active behaviour \[ F (1, 23) = 5.422; p \leq .029 \], when considering extreme groups with respect to perception of attachment. In other words, children who perceive that their mothers attempt to control them by denying care, affect or attention, tend to show more hyperactive behaviour than children who do not perceive that kind of attempted control. In addition, a statistically significant difference was found between the groups with very low and very high hostile control by the father, as regards
planning \[F (3, 4) = 4.429; p < .041\]. That is, those children who perceive more hostile control from the father, show lower performance in their capacity to plan. The significant differences found between children exposed to poverty conditions when compared with those that were not, are consistent with the findings from a long list of studies and research results on the effects of poverty, particularly the duration of the exposure to poverty, on the physical, neurological, cognitive, and social development of children. The poverty factors can influence neurocognitive development through multiple mechanisms and specific associations. This study discusses the main mechanisms which could be responsible for the results reported in this study, concluding with the findings regarding the complexity of the multiple relationships between mediating mechanisms for poverty and neurocognitive development.

**Keywords**

Executive functions, Poverty, Development, Parental styles.