**The Effects of Malnutrition and Post Traumatic Stress Disorder on the Learning Capacity of Children**

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**Abstract**

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Malnutrition is accepted to have a negative impact on the school performance of children and adolescents. Malnutrition has a negative impact on cognitive development and a potentially lasting effect on (some) cognitive functions. While recent findings seem to suggest that under certain conditions some of the cognitive impairments can be reinstalled, this paper focuses on the short term working memory effects of malnutrition. This is important since defective working memory capacities among young children limit their learning capacity and thus the success of their investments in human capital. This may jeopardize their ability to obtain socially and economically adequate schooling levels potentially depressing their earning possibilities at adulthood. The study is based on an empirical study among 90 children (boys and girls) aged between 9 and 13 years old in Banda Aceh Indonesia conducted in 2010 in cooperation with UNICEF. The study involved testing the children on a number of working memory tests (Digit Span, Coding and Bourbon-Vos) and the Raven SPM intelligence test. Malnutrition was measured as stunting. Because the population of children living in Banda Aceh had been exposed to severe stress during the Tsunami of December 2004 and its aftermath and during the long lasting violent conflict in the region, the study measured the degree of Post-Traumatic Stress Disorder (PTSD) using the Child PTSD Symptoms Scale (CPSS). PTSD is proved to have similar effects on brain development as malnutrition and thus the effects of malnutrition on the working memory of children have to be controlled for the potential effects of PTSD. According to the results of the study, malnutrition is associated with a decrease in performance on the working memory tasks. Intelligence measured by the Raven’s SPM was not associated with the decrease in performance on the working memory tasks, while it was found that a high score on the CPSS was indeed associated with a decrease in the performance on the three working memory tests. The study concludes with discussing the results of the study and setting out an agenda for further research.

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