

Relationship of Moderate to Heavy *Trichuris trichiura* Infection with the Packed Red
Cell Volume and Mental Ability of Elementary Schoolchildren in Miag-ao, Iloilo

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ABSTRACT

Trichuris trichiura commonly known as whipworm is a nematode that infects human particularly primary school-aged children. Studies show that moderate to heavy *Trichuris* infection may adversely affect the cognitive functions of schoolchildren (Nokes, 1991) and may cause anemia overtime (Politt, 1982). However, this has not been established in the local setting. This led the researchers to locally conduct a study that would primarily determine the relationship of the moderate to heavy intensity of trichuriasis with the mental ability of schoolchildren and with the Packed Red Cell Volume. It also aims to determine if there is a significant difference between the mental ability test scores and the Packed Red Cell Volume of moderate to heavy *Trichuris* infected group and the non-infected group.

Three coastal elementary schools in Miag-ao, Iloilo was chosen as the study sites. These were Miag-ao West Central Elementary School, Igtuba-Guibongan Elementary School, and Bacauan-Mambatad Elementary School. Five hundred twenty five (525) elementary pupils aged 8 – 14 years had their stool samples examined using Modified Kato Katz to determine the intensity of *Trichuris* infection. Thirty (30) moderate to heavy *Trichuris* infected students and another 30 non-infected students were randomly selected as the study sample. Capillary blood samples were collected from the 60-study sample. The packed red cell volume was determined using the Microhematocrit Method and was categorized as normal and below normal.

Mental ability of the study sample was measured using the standardized Culture Fair Intelligence Test (CFIT). The test instrument was administered and interpreted by the Psychometricians. The results of the tests consisted of verbal interpretation and was categorized as below average, average and above average.

The results showed no significant difference between the moderate to heavy infected group and the non-infected group based on mental ability test verbal interpretation ($p= 0.770$). The non-infected group even obtained a higher proportion of study samples that were below average CFIT test scores compared with the moderate to heavy infected group.

The results of packed red cell volume revealed that all study samples (100%) in the non-infected group had normal Packed Cell Volume (PCV). On the other hand, only

90% of the study samples in the moderate to heavy infected group had normal Packed Cell volume (PCV) while the remaining 10% had below normal PCV. Statistically however, the difference was not significant ($p= 0.164$).

Finally, Linear Regression Analysis showed no linear relationship between mental ability test Deviation Intelligence Quotient and Packed Red Cell Volume among the study samples. The scatter plot diagram showed dispersed distribution of study samples which means weak relationship between the two variables.

The insignificant results in this study could be attributed to various confounding variables that were not controlled strictly all throughout the study, as well as the insensitivity of the test instruments used. Thus, the study recommends controlling carefully the various extraneous variables such as socioeconomic conditions, nutritional status of the study sample. The study also recommends the use of more sensitive and specific instruments for measuring the blood level and cognitive functions.