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RECURRENT HEALTH ISSUES AND MISSED VACCINES (IMMUNIZATION) AFFECT THE COGNITIVE FUNCTION IN GENERAL PUBLIC PRIMARY SCHOOL CHILDREN

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Objectives: The study was aimed to assess the relationship of general health and cognitive function of primary school children in Pakistan.

Method: Prospective observational study conducted in 2 state and 2 private schools in a small district.

Results: Two hundred children age 7-12 years class 3, 4 and 5 were assessed using McCarthy scale of child cognition. 11(5.5%) children stated missing some immunization whereas 15(7.5%) found to have recurrent health issues.

Healthy children demonstrated better verbal and linguistic skills. (Mean score 3.94 ± 0.85 vs 3.27 ± 1.03 , $P=0.004$). Similarly children receiving full immunization demonstrated better verbal and linguistic skills (score 3.91 ± 0.87 vs 3.18 ± 0.87 , $P=0.01$).

Mathematical ability was assessed by 3 tests and was scored 1-3. Children with no recurrent health issues demonstrated better mathematical ability (2.56 ± 0.62 vs. 1.93 ± 0.70 , $P < 0.000$). Similarly children compliant with immunization demonstrated better mathematical ability ($P=0.02$).

Reasoning in conversation was assessed on scale of 1-7. Immunization compliant group expressed better reasoning score ($P=0.03$). There was no statistical difference between the group with recurrent health issues and the healthy group ($P=0.51$).

Memory was assessed on a scale of 1-4. Better memory was observed in the immunization compliant group ($P=0.006$) whereas no significant difference observed between the healthy group and the group with recurrent health issues ($P=0.51$).

Gross movements were assessed on a scale of 1-5. The Immunisation compliant and the healthy group demonstrated better performance ($P=0.03$ and 0.07) respectively.

Results: This study demonstrates that missing immunisation and recurrent health problems result in poor cognitive function and school performance.