

Thesis Title                    A Comparative Study on the Prevalence of  
Antibody to Poliovirus in two Primary School  
at Danchang District, Suphanburi Province.

Name                            Ubolrat Narueponjirakul

Degree                         Master of Science ( Epidemiology )

Thesis Supervisory Committee

Pairoj Oonsombat, M.D., M.P.H. (U.C.L.A.)

Vichai Rungpitarangsi, M.D., M.Sc. (Mod Demog)

Vichai Chokevivat, M.D., M.P.H. (Tulane)

Chuinrudee Jayavas, M.D., F.R.C.P.T.

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ABSTRACT

The purpose of this study was to compare the neutralizing poliovirus antibody levels among the pupils in two primary school at Tambol Nongmakhamong , Amphur Danchang , Suphanburi province. The Banmaikilopad school which had reported case of poliomyelitis 2 months before this study and the other was Nonguloke school which there was no case of poliomyelitis. The sample population were 219 pupils aged 7 to 14 years by simple random sampling which composed of 109 pupils in Banmaikilopad school and 110 pupils in Nonguloke school. The questionnaire was used in interviewing the history of trivalent oral polio vaccine and the blood sample was collected to determined the neutralizing poliovirus antibody using micro-neutralization test. Antibodies titre of 1:4 and over was considered as the protective antibody

level. The data collection was undertaken during December 1988 to November 1989. The results were shown as follow.

1. The pupils at Banmaikilopad school had protective antibody to at least one poliovirus type significantly higher than those of pupils at Nonguloke school ( $\chi^2_{MH} = 4.05$ , p-value = 0.0442 ).

When we considered the poliovirus antibody in each type we found that the pupils at Banmaikilopad school had protective antibody against type 1 , type 2 , and type 3 polioviruses were 1.45 times, 1.46 times, and 1.05 times than those of Nonguloke school respectively.

2. The pupils at Nonguloke school revealed the triple seronegative of poliovirus antibody to be 11.82 per cent and Banmaikilopad school was shown to be lower (3.67 per cent).

3. The highest antibody of pupils at both school was antibody to poliovirus type 2 which was higher than type 1 and type 3 respectively .

4. The pupils with history of receiving trivalent oral polio vaccine had no significant protective antibodies higher than those without polio vaccination.

5. The pattern of polio - antibodies to each of the poliovirus types was closely resembled, that declined with increasing age.

6. If we considered as a whole from the subject who had protective antibody to at least one poliovirus type we found that the proportion of antibodies is over 80 per cent. But in details of the study on the antibodies in each type was decreased especially antibody to type 1 and type 3 poliovirus were less than 70 per cent.

These results indicated that poliovirus antibody levels among the pupils in primary school at rural area was not high enough to protect themselves from poliomyelitis. These obstruct the policy for eradication of poliomyelitis from Thailand. It was recommended that children should accepted at least 3 doses and one booster dose for primary immunization which will be stimulate a better immune response than those children who received at only one or two doses of polio vaccination.