

## Evaluating the effectiveness of fluoride varnish application in reducing dental caries among preschool children in rural thailand

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**Introduction:** Dental caries remains a significant public health concern among preschool children in rural Thailand, often exacerbated by limited access to preventive care and oral health education. Fluoride varnish is a cost-effective, non-invasive preventive tool. This study aimed to assess the effectiveness of fluoride varnish application in reducing the incidence of dental caries among children aged 3–5 years in rural provinces.

**Methodology:** A randomized controlled trial was conducted in two rural districts of Chiang Rai, Thailand. A total of 240 children aged 3–5 were recruited and randomly assigned to two groups: the intervention group (received fluoride varnish every three months for one year) and the control group (received only routine oral hygiene education). Baseline caries status was recorded using the dmft index. Follow-up examinations were conducted at 6 and 12 months. Parental surveys were also administered to track changes in oral hygiene practices.

**Results:** At the 12-month follow-up, children in the intervention group demonstrated a 42% reduction in new carious lesions compared to the control group. The mean dmft score in the intervention group decreased significantly from 5.3 to 3.1, while the control group showed a negligible change. Parental awareness regarding fluoride benefits and brushing frequency also improved among the intervention group.

**Conclusion:** Fluoride varnish application significantly reduces dental caries incidence among preschool children in rural Thailand. Incorporating fluoride varnish programs into national child health policies, especially in underserved communities, could offer a sustainable solution for improving pediatric oral health outcomes.

### Biography

Nattaya Srisuwan, DDS, MPH, is a pediatric dentist and oral health researcher based in Chiang Mai, Thailand. She obtained her DDS from Mahidol University and completed her Master of Public Health from Chulalongkorn University. Dr. Srisuwan has dedicated her career to improving child oral health in rural Thai communities through clinical practice, research, and health education programs.

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