Thesis	Development and Validation of Modified Dietary Assessment of Vitamin A Intake in Northern Preschool Children
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ABSTRACT

A contributing factor to vitamin A deficiency is inadequate vitamin A intake A variety of methods exist to characterize vitamin A status of individuals or communities although each method has advantages and disadvantages. The Modified Dietary Assessment (MDA) was developed earlier for Northeast Thailand by adjusting the method of Pongtorn Sungpuag, 1994 guidelines of the International Vitamin A Consultative Group (IVACG) on dietary assessment The objective to establish MDA is a noninvasive screening tool to identify population at risk of vitamin A deficiency. The research question was whether MDA as developed for Northeast region can identify the same at risk population in Northern Thailand as assessed by biochemical

(Modified Relative Dose Response or MRDR, Serum Retinol) and functional (Conjunctival Impression Cytology or CIC) parameters

MDA questionnaire consisted of 23 items of vitamin A rich foods with the score from 1-16 assigned based on retinol equivalent per serving. MDA score was calculated from average food score multiplied by calculation factors for number of serving as well as frequency of consumption Guardians or parents were interviewed on the children's intake of vitamin A foods for the past month with the assistance of food models of different serving sizes to obtain approximate quantity and frequency of consumption. 340 preschool children in 4 subdistricts of Payao province were assessed on vitamin A status by MDA, MRDR(n 124). Serum Retinol(n=212) and CIC (n=239)

The results indicated that children consumed the median vitamin A intake of 44 % RDA of which most vitamin A came from animal sources. MDA scores of the population ranged from 17-940 with the median value of 201. Most population carried the scores between 80-159 or 75-100 % RDA for 2-6 years old. In comparison to MRDR, serum retinol (<20, <25 and <30 µg/dl) and CIC, MDA score of 120 was proposed as a reasonable cut-off point with specificity range between 66-72 % and sensitivity range of 38-61 %. Risks of vitamin A deficiency as detected by MDA < 120, MRDR > 0.06, serum retinol < 25 µg/dl and abnormal CIC were 35.5, 39.5, 20 and 8 % respectively

In summary, this study provides evidences that MDA method as developed for the Northeast region can be applied in Northern Thailand to be used as a screening tool to identify population at risk of inadequate vitamin A status