

## **Abstract**

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### **Thesis-Title:**

“Health status of villagers in rural Attapeu Province, Lao PDR, with a focus on risk factors for intestinal helminth infections”

### **Institution:**

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### **Key words:**

“Neglected populations”, “health status of villagers”, “risk factors for intestinal helminth infections”, “NTD, Lao PDR”.

### **Problem statement:**

Malnutrition and neglected tropical diseases (NTD) such as intestinal helminth infections are of substantial public health concern in less developed countries like Lao PDR, where information on marginalized rural populations, who are especially prone to suffer from ill health, is scarce. The overall study objective was to assess the villagers’ state of health in each of the villages including the assessment of risk factors for intestinal helminthic infections. The following two specific objectives were pursued: First, to describe and to evaluate the health status of the villagers in relation to: (i) reported health problems in the last month preceding the survey, (ii) nutritional status including anemia and (iii) intestinal helminth infection; Second, to identify risk factors for intestinal helminth infections of this neglected population.

### **Methods:**

Between November 2010 and February 2011, a cross-sectional health survey was conducted in ten remote villages of Attapeu Province, Lao PDR.

### **Results**

Complete data records were obtained from 601 of 783 individuals. High malnutrition prevalence rates were found. Children aged 0 to 5 years showed a prevalence of 56.0% for stunting, 19.9% for wasting according to length/height for weight (L/W, H/W), 22.0% for wasting according to mid-upper arm circumference (MUAC) for age, 48.8% for underweight according to weight for age (W/A) and 22.1% for anemia. 26.2% of the adults suffered from

underweight according to a body mass index (BMI) of less than 18.5 kg/m<sup>2</sup> and 11.7% suffered from anemia.

60.7% of the study population reported at least one health problem in the last month preceding the survey. The most common health issue was fever (32.2%), general pain and tiredness (20.1%), cough (25.3%), cold (14.6%), diarrhoea (12.0%) and abdominal discomfort (7.0%).

Among the study participants, 60.3% were infected with at least one helminth species. Multiparasitism was detected in 12.5%. The most prevalent helminth infections were *Ascaris lumbricoides* (20.7%), hookworms (19.2%) and *Trichuris trichiura* (12.1%). Further infections such as *Taenia* spp. (9.6%), *Opisthorchis viverrini* (6.2%) and *Paragonimus* spp. (3.2%) were diagnosed. Prevailing helminth species differed by village and by district. Taeniasis was detected only in the Sansai District with prevalence rates reaching up to 39.4%. Multivariable logistic regression analysis identified living in the three villages of the Sansai District (Maythavone: OR=28.3, 95% CI 9.76-82.09; Daklakao: OR=10.35, 95% CI 3.91-27.38; Dakyat: OR=59.6, 95% CI 14.83-239.5) and belonging to the ethnic minority groups Niaheun (OR=10.65, 95% CI 1.58-71.82) and Lavaen (OR=13.57, 95% CI 2.69-68.48) as independent risk factors for any helminth infection.

## **Discussion**

Malnutrition, helminth infections and general health problems prevalence are a serious public health concern in remote villages of Attapeu Province. They exceed the countries average. Risk factors for helminth infections were related to ethnic minorities and village locations. Further studies may explore in more detail the contribution of socio-economic, behavioral and sanitary conditions to the health status of the villagers.

## **Conclusion**

Intensified efforts are vitally needed in neglected rural populations to increase access to public health programmes, safe water supply, sanitation and to improve the health and nutritional status. Regular deworming for treatment of cestodes and trematodes is urgently required.