

RESULT OF RESEARCH STUDY EXPERIENCE

RELATIONSHIP BETWEEN SOIL TRANSMITTED HELMINTH
INFECTION AND NUTRITIONAL STATUS IN
STUDENTS OF ELEMENTARY SCHOOL
KECAMATAN PLAJU
PALEMBANG

Proposed As a Part of Requirements
to Obtain the Degree of Sarjana Kedokteran



By :

Dinna Andriana
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FACULTY OF MEDICINE SRIWIJAYA UNIVERSITY
PALEMBANG
2005

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has been evaluated and declared to be accepted as a part of requirements
to obtain the degree of Sarjana Kedokteran

**Faculty of Medicine
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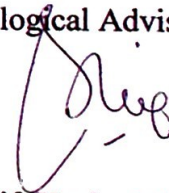
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DINNA THANKS TO...

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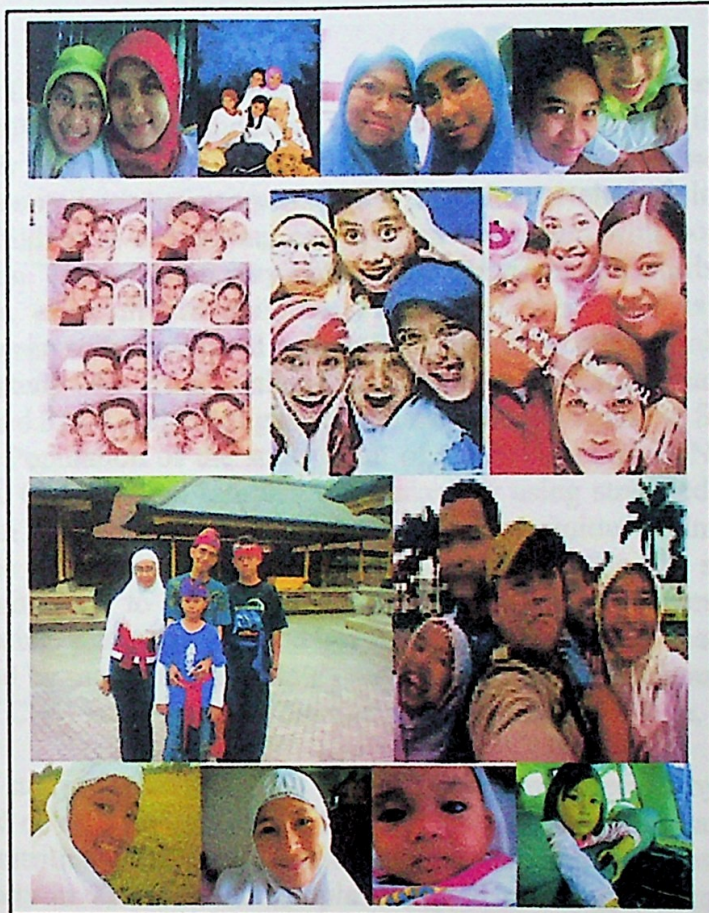
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ABSTRACT

Relationship Between Soil Transmitted Helminth Infection and Nutritional Status in Students of Elementary School Kecamatan Plaju Palembang

(Dinna Andriana; 22 pages; 2005)

Soil Transmitted Helminth is species of nematodes that use soil as their transmission media. The most important species of soil transmitted helminths in human being are *Ascaris lumbricoides*, *Ancylostoma duodenale*, *Necator americanus*, *Trichuris trichiura* and *Strongyloides stercoralis*. Soil Transmitted Helminth infection has a high prevalency in children of developing country and associated with poor living condition and bad sanitation. The infection may cause malabsorption and disturbance in mental and physical growth, especially in children. Purpose of this study is to determine the relationship between soil transmitted helminth infection and nutritional status

The study uses cross sectional analytic epidemiological survey. It was held in SDN 313, 314 and 315 Tegal Binangun Kecamatan Plaju Palembang from March 24 until April 24, 2005. Population of the study is all of the students of SDN 313, 314 and 315 Tegal Binangun. One hundred samples were taken by using stratified random sampling. The study begun by giving presentation about soil transmitted helminth infection and prevention of the infection to all students. After the presentation, the samples were given questionnaire and bottle to collect their faeces. The collected faeces was examined in laboratory by using Kato Katz Method. To measure nutritional status, anthropometry method was used by measuring sample's body weight and height. Standard of Depkes RI and standard of CDC is used for the estimation. To analyze the data, Chi Square Test is used.

The study shows that 42% of students were infected by Soil Transmitted Helminth. Based on standard of Depkes RI, 62% have good nutritional status and the rest 38% medium nutritional status. The nutritional status measurement by using chart of CDC USA results in 71 % of the samples in good nutritional status and 29% in bad nutritional status. Result of the statistical test indicates that there is relationship between soil transmitted helminth infection and nutritional status based on either standard of Depkes RI or standard of CDC USA.

From this study, it is expected that the information about soil transmitted helminth infection and the prevention can be spread larger, not only to the children but also to their parents in order to reduce soil transmitted helminth infection. It is also suggested that the test and medication for soil transmitted helminth infection is held annually for the students of elementary school.

Keywords : Soil transmitted helminth infection, nutritional status

Faculty of Medicine Sriwijaya University

FOREWORD

When I first finishing this task, I realize that what I try to create is just a tiny water drop in the ocean of knowledge. But as a person who still have to strive hard to be a real human, with all of my minuses, I try to push my brain working in order to give my piece of mind as a contribution for knowledge. But however, vision and imagination wouldn't explore and will wouldn't be an action without the will of The One and Only, The Almighty Allah. Lots of gratefulness for His amazing gift. Alhamdulillah... Alhamdulillah... Alhamdulillah...

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Certainly, this PBR is less of perfection. Therefore, constructive critics and suggestions on this subject will be helpful fot the follow-up study. May this PBR beneficial for knowledge advance.

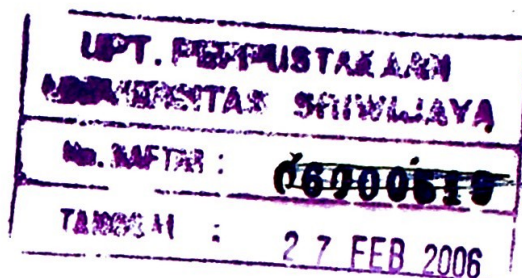
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CHAPTER I

INTRODUCTION

I.1. Background

Nematodes, also known as round worm, with more than 15.000 known species spread on earth, may cause serious infections in human being.¹ The largest infection is caused by nematodes transmitted in soil, or also known as soil transmitted helminths, such as *Ascaris lumbricoides*, *Ancylostoma duodenale*, *Necator americanus*, *Trichiuris trichiura* and *Strongyloides stercoralis*.² During periods, nematodes infection has not been considered as a serious health problem since nematodes infection causes minimal harmful effect. That is one of the reasons why nematodes infection spreads extensively especially in tropical countries where the circumstances gives a big support for growth and reproduction of nematodes species.

Infection of soil transmitted helminths affects physical development of host by many mechanism, such as malabsorption, blood and protein loss, anorexia and chronical dispeptic syndrome.² It is an undeniable fact that nutrition plays a very important role in children's physical growth. Children supported by good nutrition tend to have a good physical growth. In the contrary, children that are not supported by good nutrition tend to have a bad physical growth. The disturbance in physical growth can be observed by using nutritional status.^{3,4} A good nutritional status indicates a good physical growth. It means that children supported by good nutrition tend to have good nutritional status. In contrary, children that are not supported by good nutrition tend to have bad nutritional status. Since malabsorption caused by soil transmitted helminths infection may result in bad nutrition of host, children with soil transmitted helminths infection tend to have bad nutritional status.

Children are the largest population of soil transmitted helminths infection.⁵ In Malaysia, the prevalence of soil-transmitted helminths infections among children in squatter kindergartens are 90% and 10% in upper/middle class kindergartens. In Jakarta, 60% of adult are infected by

soil transmitted helminths and 90-98% children are infected by this helminths. This is the reason why this study use students of elementary school as population. ²

Soil transmitted helminths infection correlates to bad sanitation and hygiene. In environment with bad sanitation, 60-100% of children from 1-10 years of age are infected. It is also proved in Japan, where the prevalence of soil transmitted helminths infection decreases from 51.8% in 1945 to 1.6% in 1970 due to improvement of sanitation and hygiene. The prevalence is also low in developed countries with much better sanitation and hygiene. In United Kingdom, the prevalence is 1% and 2.3% in United States. ² That is the reason why this study is taken place in SDN 313, 314 and 315 where people still living in a poor sanitation and hygiene condition.

I.2. Problems

1. What is the proportion of soil transmitted helminths infection in students of SDN 313, 314 and 315 Kecamatan Plaju, Palembang?
2. What is the nutritional status of students in SDN 313, 314 and 315 Kecamatan Plaju, Palembang?
3. How is the relationship between soil transmitted helminths infection and nutritional status in students of SDN 313, 314 and 315 Kecamatan Plaju, Palembang?

I.3. Objectives of the Study

1. To determine the proportion of soil transmitted helminths infection in students of SDN 313, 314 and 315 Kecamatan Plaju Palembang.
2. To determine the nutritional status of students of SDN 313, 314 and 315 Kecamatan Plaju, Palembang
3. To determine the relationship between soil transmitted helminths infection and nutritional status

I.4. Significance of the Study

1. By knowing the ratio of soil transmitted helminths infection in elementary school students, it is expected that the result of the study is able to become a relevant information source for those who have competency and responsibility in preventing soil transmitted helminths infection to find the most suitable intervention
2. By knowing the nutritional status of elementary school students, it is expected that the result of the study is able to become a relevant information source for those who have competency and responsibility in preventing malnutrition and obesity to find the most suitable intervention
3. By knowing the relationship between soil transmitted helminths infection and nutritional status, it is also expected that the result of the study is able to be the base of the follow-up study