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**A CROSS-SECTIONAL STUDY OF AMEBIASIS AMONG ORANG ASLI
SCHOOL CHILDREN IN SEKOLAH KEBANGSAAN PENDERAS, PAHANG.**

By

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DECLARATION

"I hereby declare that this thesis is my original work and has not been submitted previously or currently for any other degree at UiTM or any other institutions."

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TABLE OF CONTENTS

	Page
TITLE PAGE	
DECLARATION	ii
ACKNOWLEDGMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	v
LIST OF FIGURES	vii
LIST OF ABBREVIATION	viii
ABSTRACT	vii
 CHAPTER	
 1 INTRODUCTION	 1
1.1 Objectives of Study	6
1.1.1 General Objective	6
1.1.2 Specific Objective	6
1.2 Hypotheses	7
 2 LITERATURE REVIEW	 8
2.1 Classification and Taxonomy	8
2.2 Biology of <i>Entamoeba histolytica</i>	9
2.3 Morphology of Genera and Species Infecting Human	10
2.3.1 <i>Entamoeba histolytica</i>	10
2.3.2 <i>Entamoeba dispar</i>	10
2.3.3 <i>Entamoeba moshkovskii</i>	11
2.4 Life Cycle of <i>Entamoeba histolytica</i>	12
2.5 Geographical Distribution and Prevalence in Human	14
2.6 Sources of Human Infection and Modes of Transmission	17
2.6.1 Waterborne/foodborne transmission	17
2.6.2 Sexual transmission	18
2.6.3 Zoonotic Transmission	19
2.6.4 Person to Person Transmission	19
2.7 Laboratory Diagnosis Of Amebiasis	20
2.7.1 Microscopy	20
2.7.2 Polymerase chain reaction (PCR)	21
2.8 Infection And Disease	23

ABSTRACT

Amebiasis also recognized as infection by *Entamoeba histolytica* is still ubiquitous in rural Malaysia particularly among Orang Asli school children. This infection can be transmitted through ingestion of water or food contaminated with stool that contains *E. histolytica* cysts. Clinical manifestations of amebiasis ranging from asymptomatic colonization of intestinal wall to amoebic colitis which was dysentery or diarrhea and invasive extraintestinal infection can be present in the form of liver abscess. Up to this date, knowledge about the prevalence of amebiasis among underprivileged communities such as Orang Asli was not well documented. To contribute to the better understanding about the epidemiology of this infection, a cross-sectional study has been conducted in Pahang to provide the information regarding the prevalence, possible risk factors and clinical manifestations that associated with amebiasis. Pre-tested questionnaire was used for collecting demographic, socio-economic, environmental and behavioral data and further analyzed using Pearson's Chi-square, univariate and multivariate analyses. A total of 89 stool samples were collected from Orang Asli school children in Sekolah Kebangsaan Penderas, Pahang. All stool samples were examined by using Wheatley's trichrome stain. Thirteen (14.61%) samples were microscopically positive with *E. histolytica*/*E. dispar* complex either cysts and/or trophozoites. The prevalence of this infection discovered an age-independency relationship, with higher prevalent rates were observed among those aged ≤ 10 years compared to their counterparts (15.2% vs. 14%). According to genders, the present findings discovered that there was no significant difference between boys and girls with amebiasis. However, the prevalence of *E. histolytica*/*E. dispar* complex was found high among girls to boy with the ratio of 1.79:1. There was no possible risk factors could be found in the present study. Diarrhea ($p = 0.58$) and other gastrointestinal symptoms ($p = 0.49$) were not statistically significant with *E. histolytica*/*E. dispar* complex infection. Essentially, the present findings highlighted that *E. histolytica*/*E. dispar* complex infection is still widespread among Orang Asli school children. Further studies using molecular technique such as single-round polymerase chain reaction should be carried out in order to differentiate the morphologically identical species of pathogenic, *E. histolytica* from the non-pathogenic, *E. dispar* species. This well documented information will be an advantageous for the public health authorities to consider special planning and implementation of specific prevention and control approach to totally eradicate this infection among Orang Asli school children in rural Malaysia.

CHAPTER 1

INTRODUCTION

In 1875, Fedor Losch is the first described about amoebic dysentery after a case of young farmer that suffering from chronic dysentery and large amount of amoebas are found in his stool (Kean *et al.*, 1978). In 1925, an idea about the presences of two morphologically identical amoeba species was being developed (Brumpt, 1925). However, this idea is not being accepted until 1993 when an idea about redescription that *Entamoeba histolytica* and *Entamoeba dispar* are two different species with morphological identical cysts is being established (Diamond & Clark, 1993). This great idea left the name for pathogenic strains as *E. histolytica* that have been discovered by Fritz Schaudinn in 1903 (Saklatvala, 1993). Meanwhile, for non-pathogenic strains, it is reusing the specific name that previously proposed by Brumpt (1925) as *E. dispar*.

In the human intestinal tract, the species of genus *Entamoeba* that may live in it would be *E. histolytica*, *E. dispar*, *E. moshkovskii*, *E. coli*, *E. hartmanni* and *E. polecki*. Harmless intestinal colonization or colon wall invasion and destroyed host organs, for examples liver, lung and brain can be resulted from an infection that caused by *Entamoeba* spp. that also recognized as amebiasis. The only species that associated with disease in humans would be *E. histolytica* while the rest of *Entamoeba* spp. would be assessed as harmless (Clark & Diamond, 1991).

Globally, amebiasis also can be assessed as a parasitic infection that can cause human death (World Health Organization, 1997; Haque *et al.*, 2003; Haque & Petri, 2006). Ingestion or consumption of water or food that have been contaminated with the faeces that contain *E. histolytica* cysts will