EPIDEMIOLOGY OF PREVALENT ENTEROPARASITIC DISEASES AMONG SEMIURBAN PRIMARY SCHOOL CHILDREN

THESIS

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BY

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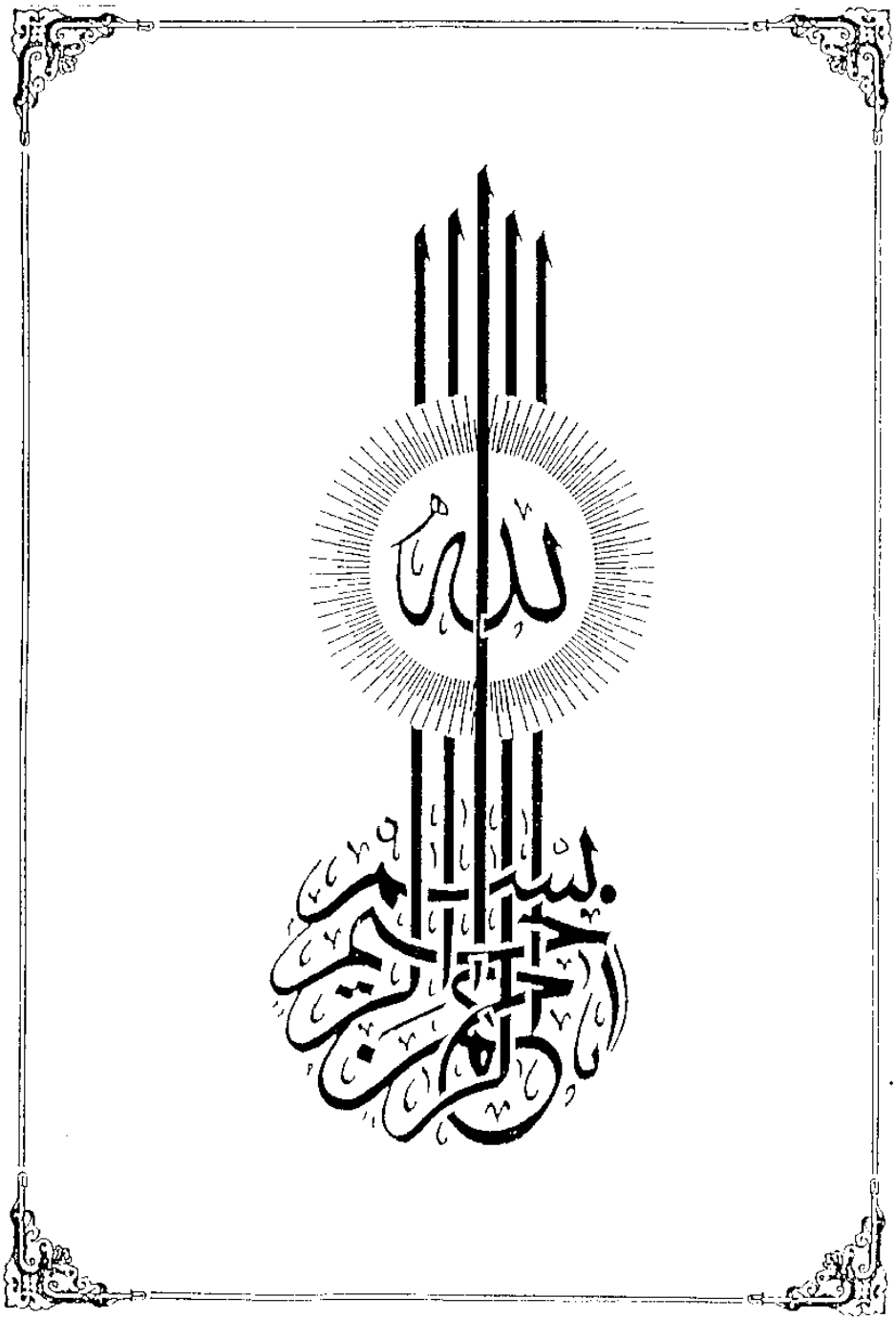

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INTRODUCTION

Egypt is gifted by good and mild weather all the year around. This is not only good for the inhabitants but also for the parasitic diseases, some of the parasites spend part of their life-cycles out side the human body.

Accordingly, most if not the majority of human parasites were discovered in Egypt. Moveover as canned food is seldom used in Egypt specially canned vegetables, most of these are consumed fresh or handled directly from the field.

Due to this, entero-parasitic infections are so common among Egyptians specially children.

Child's health is so important not only from the humanity point of view but also from the economic point to the welfare of the country. The child of today is going to be the man of tomorrow who will share the responsibility in raising the standard of living of the country by working and producing.

Accordingly, we have to take good care of our children not only during illness but also to try to protect them from current diseases.

Some of the diseases of primary school children which affect their health is the enteroparasitic group of diseases.

This study was designed to show the prevalence of the enteroparasitic diseases among primary school children in a semiurban area in Cairo. Similar investigations were well documented in rural areas while these studies have not been well covered in semiurban areas in Cairo.

Such a study would help in planning a program for prevention of the detected diseases.

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REVIEW OF LITERATURE

Previously, investigators have dealt with this subject.

A survey was carried out by Nor-El-Din and Baz (1950) in a study of cestode infections among Egyptians attending the Research Institute. They have found that Hymenolepis nana, Hymenolepis diminuta, Taenia saginata and Taenia soluim were the most common parasites. They studied the prevalence among different age groups under 10 ; 10 - 15 and over 15 years old. The prevalence of H.nana were 17.4%, 9.8%, 1.7% and of Taenia infections were 3.8%, 2.5% and 2.2% respectively.

Rifaat et al (1968) in a work done aiming at finding out the distribution of various forms of parasitic infestations in Egyptian infants and children attending the outpatient clinic of Ain Shams University Children's Hospital. 271 infants and children were examined, 153 males and 118 females ranging from 3 months to 15 years old.

Giardia lamblia was found in 17.7% of cases, Hymenolepis nana in 12.9% and Enterobius vermicularis in 16.6%.

Tadros (1973) in a polyclinic of school students at Giza Province found that the prevalence of parasitic diseases was 40.3%.

The figures obtained for the parasitic infestations were : Schistosoma haematobium 16.6%, Ascaris lumbricoides 6.6%, Ancylostoma 0.7%, Hymenolepis nana 2.6%; Taenia saginata 0.7%, Entamaeba histolytica 2.6% and Giardia lamblia 1.7%.

In Hong Kong Hellman (1965) reported that the prevalent parasitic infeotions in China and Hong Kong were : Trichocephalus trichuris 49 and 50% respectively, Clonorchis sinensis 36 and 41%, Ascaris 43 and 16%, hook worm 25 and 15% and few cases with Fasciolopsis buski, Taenia solium and only one case of Schistosoma japonicum.

Seah, S.K.K. (1973) in a survey done on 400 Chinese aged 3-67 years who were recently immigrant to Canada from Hong Kong and Southern China showed Clonorchis sinensis ova in 15.5%, Trichocephalus trichuris in 5.5%, Giardia lamblia in 4% and Ascaris in 3.0%. Overall 24% of the total had

intestinal parasites. All were symptom free.

In England Archer (1966) found that parasitic infections among children coming from India and Pakistan were 1.5% for round worms and 2.7% for Hymenolepis nana and there was one child with Taenia saginata.

In Ethiopia, Wang (1966) reported that there was a significant difference in prevalence of parasitic infections among children living in high and low lands. The procured figures were 80% and 12% respectively.

Ricci, M. et al (1973) had under taken a study upon 298 school children aged 7-12 years from Brindisi (A) and its environs (B). They were examined for intestinal parasites.

Children from the city group (A) were 46 boys, 59 girls and from rural areas group (B) were 96 boys and 97 girls. More than 50% of each group had some kind of intestinal parasite whether protozoal or helminthic. The most common was Enterobius vermicularis in 50% of each group, then Giardia lamblia in group (A) and Tricocephalus trichuris in group (B), Hymenolepis nana 8% in each group and Entamoeba histolytica 2%. Ascaris was present only in group (B).

Khin-Ohn-Lwin, et al (1972) reported that out of the estimated 2834 populations of 7 villages in Loikaw Township of Burma they have taken 92 stool specimens. There was 63% had parasites. Ascaris was found in 46.7%, Trichocephalus trichuris in 25% and hook worm in 13%.

De Sowitz et al (1970) examined 275 school children born in Oahu of Hawaii and 115 school children foreign born in Philippines and Samoa .

By stool examination they had found that in general there was a high prevalence of infection in immigrant children up to 43.4% in one school. Trichocephalus trichuris, Ascaris and hook worm were found in 24.3%, 9.5% and 4.3% respectively in the immigrants but only one local child was infected with Tricocephalus trichuris, 3 with hook worm and none with Ascaris. Intestinal protozoa were uncommon with the exception of Giardia lamblia which was present in 5.2% of the specimens for the immigrant children and 3.6% of the locally born. Only one Entamaeba histolytica infection was discovered in a child from Samoa.

Ebrahim Zadeh, A. (1974) had studied the prevalence of parasitic infections in various regions of Iran by taking 1042 stool samples from Roodza and Schahy in the north (warm and very humid, oceanic climate), from Khorramabad in the west (dry and temperate) and from Ahwaz in the south (dry and very hot but often with cold nights), Ascaris, Trichostrongylus, Hymenolepis, Giardia and Entamaeba histolytica were more frequent in the south than in the north while T. trichuris, strongyloides and hook worm were predominant in the north. Relatively few liver flukes were detected. The effects of climate on species distribution were briefly discussed.

Ricciardi, M.L. (1971 and 1972) examined 300 persons for intestinal parasites at a hospital in southern Togo in January 1971 and about twice the number a year later. There was little difference from one year to the next in the total infection rates (63.5 and 67%) or in the rates of various parasites. Those for the more important infections (1972) were Entamoeba histolytica 6%, Giardia lamblia 6%, Ascaris 21%, Necater americanus 37% and no schistosoma infections were seen in 1971 but there were 2 cases in 1972.

The author comments on the lower incidence in children of pre-school age who had been subjected to repeated examinations and treatment and he suggested that this means that control should be extended to cover everyone.

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MATERIAL AND METHODS

Two hundred school children were taken from schools including children living at semiurban areas in Cairo aging 6-13 years.

Most of them live at Mohammady area, some at Arab-El-Nor and others at kwadria. However, they live in the environment around the College and the University Hospital.

The present study covered one school and the rest of the 200 children examined were selected from another school on the basis that they live in the above area.

A sheet was designed to each child including personal history, name, age, sex, address and occupation of the father. Moreover, the form covered the socioeconomic pattern of life as for example the number of rooms in the house, number of occupants per bed room, type of floor, presence of toilet facilities, water supply, refuse disposal and feeding habits.

Clinical examination was done for liver, spleen, chest and heart, Also anthropometric measures for weight and heipht.

Stool examination was undertaken by direct smear, floatation and sedementation methods.

Direct smear method :

A drop of saline was placed on the centre of a microscope slide. With the help of an applicator a small sample about one gram of pure faeces was selected avoiding non-faecal material. The sample was stirred into the saline making an even suspension. There after it was covered by cover glass. The smear therefore was satisfactory for examination. The low power of the microscope was used. High power lens was needed whenever confirmation was required.

Floatation method :

From each sample, two grams of stool were placed in a 50 ml. beaker with two ml. saturated salt solution. The sample was vigorously shaken to form a paste, then more saturated salt solution was added until the brim of the flask. A slide was placed carefuly over the brim and was allowed to remain so for ten minutes before examining it under the microscope, by that time all the ova & cysts would be found floating.

Sedementation method :

From each sample, two grams of stool were put in a beaker containing 10 ml. dilute salt solution. The sample was then stirred and passed through a sieve into a conical flask and left to sediment for 20-30 minutes. The sediment was taken by a pipette and two drops of it were put in the centre of a slide and was examined under the microscope.

Faecal specimens were collected freshly day by day in a clean disposable receptacles.

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