

SURVEY ON THE PREVALENCE OF INTESTINAL PARASITES AMONG ORPHAN CHILDREN INHABIT TWO STATEHOMES IN BAGHDAD CITY

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ABSTRACT

230 stool samples were collected from 2 state homes for (males and females) to investigate the infection of different intestinal parasites (pathogenic and non-pathogenic).

The infection rate was higher among males 15.7% than females 6%, these rates were increased when concentration method was employed up to 54.8% for males and 8.7% for females significantly.

Most infected orphans were found to harbor single parasite followed by double, triple parasites.

The highest rate of infection was found among young age group (1-5) years old, while the older age groups got lowest rates.

Of helminthes, the commonest parasite was *Hymenolepis nana* 5.7% and of protozoa, the commonest intestinal parasite was *Giardia lamblia* 7.4%.

INTRODUCTION

Statehomes are one of establishments which concern with orphan children who suffering of social and financial problems.

This study is extended to evaluate the healthy state of the beneficiaries who inhabits these homes and it is truly considered the first study which was done on statehomes orphans and children in Baghdad city.

Many studies were carried on school and pre-school children in different ages and sexes some of these were done in Baghdad city and its provinces (Al-Jeboori and Shafiq, 1976; Ali *et al.*, 1989; Ibrahim *et al.*, 1994) while others were done in other cities and in different parts of Iraq (Molan and Farooq, 1989; Dwiach *et al.*, 1992).

MATERIALS AND METHODS

230 stool samples were collected from two statehomes (males and females) in Baghdad city in clean, dry, covered plastic cups labeled with child name, sex, age and some clinical symptoms and all the samples were examined by two laboratory techniques:

A-Direct smear method: with two slides per each stool sample using saline and iodine with a little amount of stool and examined microscopically.

B-Concentration method: using normal saline to concentrate ova and oocysts, then the deposits examined microscopically using Lugol's iodine.

All stool samples were collected from (8-10 A. M.) approximately (25) samples/day and examined after (1 hr) from time of collection.

Chi-square applied on the data which was obtained.

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RESULTS AND DISCUSSION

From table (1 and 2) the study show that orphan child could be infected with different intestinal pathogenic and non-pathogenic parasites at different ages and sexes with different rates.

Of 230 stool samples, 73 (31.7%) were positive for intestinal parasite. *Giardia lamblia* was the most common 17 (7.4%) pathogenic parasite, but this rate is lower than that reported by (Ali *et al.*, 1989; Molan and Faroq, 1989; Mohmood, 1992).

The infection rates with this parasite vary greatly from district-to-district, due to many factors such as (district nature, level of personal sanitation and whether family, school, hospital child) (Al-Jeboori and Shafiq, 1976), while (Abdel-Hafez *et al.* 1986) said that highrate of giardiasis is due to person-to-person transmission in the same place.

Table 1: Prevalence of intestinal parasites among orphans children inhabit two statehomes for males and females.

Parasite name	Total cases		Statehome (M)		Statehome (F)	
	No.	%	No.	%	No.	%
<i>Entamoeba histolytica</i>	3	1.3	3	1.3	0	0
<i>Giardia lamblia</i>	17	7.4	15	6.5	2	0.87
<i>Entamoeba coli</i>	23	10	22	9.6	1	0.4
<i>Endolimax nana</i>	4	1.7	1	0.4	3	1.3
<i>Trichomonas hominis</i>	7	3	5	2.1	2	0.87
<i>Enterobius vermicularis</i>	5	2.1	5	2.1	0	0
<i>Hymenolepis nana</i>	13	5.7	11	4.8	2	0.87
<i>Strongyloides stercoralis</i>	1	0.4	1	0.4	0	0
Total no. exam. =230	73	31.7	63	27.5	10	4.4

These results were obtained by using concentration method.

Table 2: Total infection rates using both methods (direct and concentration) in accordance with age groups, sexes, pattern of infection.

Age groups (years)	Total no. exam.	Direct method		Concentration method	
		No. +	%	No. +	%
1-5	83	16	7	49	21.3
6-10	90	7	3	17	7.4
11-15	57	2	0.8	7	3
Sexes	Total no	No. +	%	No.+	%
Males	115	18	15.7	63	54.8
Females	115	7	6	10	8.7
Pattern of infection		No.+	%	No.+	%
Single infection		21	9.1	49	21.3
Double infection		3	1.3	20	8.7
Triple infection		1	0.4	4	1.7
Total no. exam.	230	25	10.8	73	31.7

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The infection rate with *Hymenolepis nana* is 5.7% which is much lower than that reported by (Al-Hannon and Mukhlis 1982) 7.9%, Mohmood (1992) 19.4% and higher than that reported by Dwiach *et al.* (1992) 3.6% and Ibrahim *et al.* (1994) 2.3%.

The infection with *H. nana* may be either due to auto-infection (Al-Abiady, 1988) or could be child hands contaminated with mouse piles (Dwiach *et al.*, 1992) or may be accidental ingestion of mouse piles (Mohmood,1992).

The infection rate with *Entamoeba histolytica* is 1.3% which is lower than that reported by (Al-Hannon and Mukhlis, 1982) 6.7%, (Ibrahim *et al.*, 1994) 7.4% and this low rate either faecal-contamination with parasite is low (Al-Jeboori and Shafiq, 1976) or, the prevalence of this parasite among adults more than in children (Dwiach *et al.*, 1992).

Young children especially under 2 years old got lower infection rates because of the defence mechanism which transmitted from mother through breast milk (Asma *et al.*, 1988).

The prevalence rate of *Strongyloides stercoralis* was the lowest rate 0.4%, this rate reflect the fact that parasitic infection through soil is very low (Al-jeboori and Sahafiq, 1976; Mahdi and Jassim,1987).

On the other hand, the results indicated that the males got higher rate 15.7% than females 6% and these rates increased significantly ($P < 0.01$) when we used concentration method.

This fact reflects the better hygienic and sanitary precautions (It was observed very clearly) among females than males statehome and it means that there is better an intensive care among females statehomes than males.

This fact could be explained by the playing-nature of males outdoors & indoors make them exposed to contamination more than females and as it was observed clearly that the free behavior of males outdoor make them indirect contact with contaminated foods, this fact was affirmed by (Dwiach *et al.*, 1992; Jaafer, 1995).

The results indicated that orphan child could be harbour and infected with more than one parasite concurrently (single, double, triple infection) and this is due to either a great risk of exposure to mixed infection (Al-Jeboori & Shafiq, 1976) or due the mixed infection occur commonly via faeco-oral (Mahdi & Jassin, 1987) while (Ali *et al.*, 1990) said that the mixed infection is due to responsiveness of child to be infection with one parasite give a chance to other parasite to survive longer in same host & same time.

The highest infection rates with different parasites was found among young age group orphan (1-5) years old while old age group children (not adults) (6-10) (11-15) years old got lower rates of infection because orphans are among young age much more exposed to contaminate dirt due to play nature which keep them in direct contact with contamination (Al- Abiady, 1988), while (Al-Hanoon & Mukhlis, 1982) said that young ages are more liable for infection than older ages .

Finally non-pathogenic. Parasites were exist in some stool samples in different rates *Entamoeba coil* 10%, *Endolimax nana* 1.7% *Trichomonas hominis* 3% and the existence of these parasites in stool samples is an indication for a faecal contamination of hands, foods, water (Al-Jeboori & Shafiq 1976, Ibrahim *et al.* 1994).

CONCLUSION

Generally, we can say that the total rate of infection with different intestinal parasites is low, and this rate could be increased & extended to involve un-infective children especially among males statehome, unless all sanitary and medically precautions must be well developed in both statehomes .

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مسح حول انتشار الطفيليات المعوية بين الأطفال الأيتام في اثنين من دور الدولة في مدينة
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الخلاصة

لقد تم جمع ٢٣٠ عينة براز لاثنتين من دور الدولة (للبنات والبنين) للكشف عن الخمج لمختلف الطفيليات المعوية (الممرضة والغير ممرضة). أظهرت النتائج إن نسبة الخمج بين الذكور بصورة عامة أكبر من الإناث حيث بلغت النسبة ١٥,٧% للذكور و٦% للإناث، وقد زادت هذه النسبة عند استخدام طريقة التركيز حيث بلغت ٥٤,٨% للذكور و ١٨,٧% للإناث بصورة معنوية. لقد أظهرت النتائج بان الخمج المفرد هو النمط الشائع، ويأتي بعده الخمج المزدوج، الخمج الثلاثي، وان الفئات العمرية الصغيرة (١-٥) سنة بين الأطفال الأيتام أكثر الفئات عرضة للخمج من الفئات العمرية الكبيرة. لقد تبين بان أكثر الطفيليات المعوية الابتدائية شيوعاً هي *Giardia lamblia* حيث بلغت نسبة الخمج ٧,٤%، ومن الديدان الشريطية القزمية *Hymenolepis nana* حيث بلغت النسبة ٥,٧%.