

Prevalence of Intestinal Parasitosis among Food Handlers in Benghazi, Libya

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Abstract:

Background: A substantial percentage of food handlers may be the carriers of many intestinal parasites. Handling of food and drinks by infected individuals in the society promotes transmission of intestinal parasites.

Objectives: To determine the prevalence of intestinal parasites among food handlers in Benghazi.

Material and Methods: A total of 3150 food handlers submitted their faecal specimens to get health clearance certificates to the Central Lab in Benghazi during the period of May 2005 to April 2006. All faecal specimens were routinely examined by direct smear microscopy and concentration method or intestinal parasites.

Results: Two hundred sixty one (8.26%) food handler professionals were found infected with intestinal parasites. Prevalence rate was significantly ($p < 0.05$) higher among Sudanese (9.40%) and Egyptian (7.51%) food handlers compared to Libyan (4.96%) food handlers. The most common parasite was *E.histolytica* (4.4%) among these professionals.

Conclusion: Import of intestinal parasites by expatriate workers arriving from neighboring countries, such incidence patterns seems to become a persistent feature in the region. To minimize intestinal parasites, medical health care and revamping hygiene measures of food handlers is necessary.

Introduction:

Libya is a developing country, and people in communities usually have high standard of cleanliness, general good health, clean water supply and proper sewage disposal. The high frequency of intestinal parasites in a population indicates low socio-economic conditions, poor medical care, occupational categories and low standard hygiene.^{1,2} An enormous increase in the number of expatriates is a result of economic growth in Libya. The prevalence rate of intestinal parasites has been found higher in expatriates arriving from developing countries.³⁻⁷

Foreigners, and immigrants in the region may tend to import the intestinal parasites, and would impact on health of Libyan peoples. A large number of populations of expatriates coming from neighboring countries, work at different places where food is served by these people. Handling of food and drinks by infected cooks and servants might be a common factor of transmission of intestinal parasites in many localities.

Limited studies have been made on stool examination for entero-parasites in Libyan population.⁸⁻¹¹ So far no study has been carried out for the prevalence of intestinal parasites among food handlers in the region. Moreover, prevalence rate of intestinal parasites has been

found high in food handlers and untreated individuals, who serve as roving reservoirs of intestinal parasites in the area.^{1,12-14}

This study was carried out to determine the prevalence of intestinal parasites among food handlers in Benghazi.

Materials and Methods:

A total of 3150 stool samples from food handlers were examined for intestinal parasites during the period from May 2005 to April 2006 at Central Lab in Benghazi. There were 1563 Sudanese, 1304 Egyptians and 283 were Libyan Nationals, who work in hotels, restaurants, lunch counters of road sides, bakeries, refreshment stands, selling and distributing food items to the shops. The expatriate food handlers (Sudanese and Egyptians) were subjected to have stool examination upon arrival or after returning from holidays to get health clearance certificates to work. Libyan Nationals food handlers also have regular (every six months) checkup of stool examination by law to submit their medical examination certificates prior to start such professional employment. Female food handlers, prepared food items in their houses and sell or distribute to the shops.

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All stool samples were routinely examined microscopically in normal saline and iodine solution for the detection of intestinal parasites. Soon after direct smear microscopic, same faecal specimens were concentrated by sedimentation technique by using normal saline.

Results:

The prevalence of intestinal parasites among food handlers is presented in Table 1. Out of the 3150 individuals were examined, 2816 (89.39%) were males and 334 (10.60%) were females. 237 (8.41%) were males 24 (7.18%) females were passing trophozoites, cysts or ova of intestinal parasites. Intestinal parasitosis was significantly higher ($p<0.05$) among Sudanese and Egyptian food handlers. *Entamoeba histolytica* was more prevalent among food handlers. Helminthic infections were found to be relatively low compared to protozoan. Only seven (0.22%) food handlers showed mixed infection of two intestinal parasites. No significant difference of infection was observed among males (8.41%) and females (7.18%).

Discussion:

The apparently healthy asymptomatic infected food handlers coming to Libya may shed intestinal parasites in the region which may be source of infection and transmission of parasites in the population.

In the present study, 3150 stool specimens were examined, 261 (8.28%) were found infected with various intestinal parasites. Prevalence rate of intestinal parasites was found to be similar to the findings of Khan et al,¹⁵ who reported 7.56% intestinal parasitic infection was found among food handlers in Dammam, Saudi Arabia. However, a

comparatively higher prevalence has been reported in other parts of the world.^{2,13,16}

The prevalence rate of *E. histolytica* in the study was found to be higher than other enteroparasites. Similar findings had been reported in Libyan population.^{8,9,11,17} Moreover, a higher prevalence rate of *E. histolytica* has been found among expatriates coming from Sudan and Egypt in Libya.⁵ The higher infection of *E. histolytica* among food handlers shows that this protozoa is more troublesome in this region. Prevalence of helminth infections among food handlers was found to be low. In Libya it has been found that prevalence of helminthes parasites were low.⁹⁻¹¹ Moreover, low rate of helminthic infection has been reported among expatriates working in Benghazi.⁵

It is concluded that prevalence of intestinal parasitosis among food handlers arriving from endemic areas should be considered as a serious health problem that may exert its effect on the Libyan communities. Awareness of health problems in the society, the health education should be increased among Libyan population. Food handlers need to educate themselves about health education programme, importance of maintaining hand hygiene by cutting their nails and hand washing practices, which may definitely reduce enteroparasites in the region. Moreover, medical health care of food handlers is mandatory for proper control for intestinal parasites in the area. There is also need for constant epidemiological surveys on parasitic infections for the entire population segment.

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Table 1: Prevalence of intestinal parasites among food handlers

Nationality	No. Examined	No. Infected	<i>Entamoeba histolytica</i>	<i>Giardia lamblia</i>	<i>Entamoeba coli</i>	<i>Ascaris lumbricoides</i>	<i>Trichuris trichiura</i>	<i>Ancylostoma duodenale</i>	<i>Hymenolepis nana</i>
Sudanese	1563	147 (9.40)	89 (5.69)	26 (1.66)	12 (0.76)	7 (0.44)	3 (0.11)	4 (0.25)	6 (0.38)
Egyptians	1304	98 (7.51)	41 (3.14)	32 (2.45)	10 (0.76)	6 (0.46)	4 (0.30)	3 (0.15)	2 (0.15)
Libyans	283	14 (4.96)	9 (3.18)	2 (0.70)	1 (0.35)	NIL	NIL	NIL	2 (0.70)

Figures in parentheses indicate percentage.

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