

Research Article

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The prevalence of intestinal parasitic infections among applicants for receiving the health card

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Abstract

Intestinal parasitic infection (IPI) is a public health problem in developing countries. This study aimed to investigate the prevalence of IPIs among applicants for receiving health card in Zarch –a city in Iran-. The current study is a cross-sectional descriptive study. This study was conducted with the participation of all food-related people who had referred to Zarch–in Yazd province of Iran- health center to receive a health card in 2020. Finally, the study data were analyzed by SPSS version 22. The results of this study showed that out of 600 participants related to food industry, only 1.3% had intestinal parasites. Also, the frequency distribution of the age of the clients showed that the highest number of participants is related to the age group of 26-35. The education level of the participants showed that more individuals (41.5%) had a diploma. Occupationally, 24% of the participants were related to food industry factories, followed by bakeries. In order to further reduce in the level of contamination with IPI, it is necessary to provide the necessary training to those involved in related- jobs specially the food industry.

Keywords: Intestinal parasitic infection, Public health problem, Food industry.

INTRODUCTION

The most frequent illnesses in the world are intestinal parasite infections (IPIs) [1-4]. Poverty, a deficiency of health maintenance, a lack of sufficient consumption of water, and a hot wet surroundings are all factors that have an important role in creation of IPI [5].

As stated by the World Health Organization (WHO) in the reports, over two-thirds of the world's population is infected with an intestinal parasite, with *Ascaris* and *Giardia* infections having the highest occurrence [6, 7].

As a result, multiple studies on the frequency of parasite illnesses in various sections of the Iran have been done, with parasitic infection rates ranging from almost 2- 61% in the populations surveyed [8-10].

The current study was also performed to investigate the prevalence of IPIs among candidates for receiving the health card in Zarch city – a city in Yazd province of Iran.

MATERIALS AND METHODS

This descriptive cross-sectional study was conducted with the participation of all food-related people who had referred to Zarch health centers in 2020 to receive a health card.

The sampling method of this study was census. This study was approved by the ethics code IR.SSU.MEDICINE.REC.1397.210 in the ethics committee of Shahid Sadoughi University of Medical Sciences in Yazd.

While recording the demographic characteristics of the people, each person was given three sampling containers to prepare a stool sample. Subjects prepared samples on three consecutive days and delivered them to the laboratory. All samples were examined for the presence of parasites by direct method (wet method with Lugol).

In the direct expansion method, a small amount of feces was mixed with a drop of physiological serum on

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the slide and after placing a slide on it, it was studied microscopically. (In the formalin ether method, dissolve some of the feces in 10 ml of 10% formalin and shake 7 ml of the filtered suspension vigorously after adding ether to it, and was centrifuged for 2 minutes at 2000 rpm, and then Lugol is added to lower sediment and examined under a microscope). The result was recorded in the relevant offices in front of the sample number.

Individuals who had been treated with intestinal antiparasitic drugs for the past three months or had incomplete information were excluded from the study.

Individuals' information was recorded only as a code and the identity of the participants was confidential. After collection, the data were entered into SPSS software version 22 and analyzed.

RESULTS

The number of people surveyed in this study was 600 people related to food industry who referred to Zarch health centers to receive a health card in 2020. 446 cases (74.3%) participants were men and rest (154 cases or 25.6%) women.

The highest number of referring was related to the age group of 26 to 35 (30.67%) (Fig. 1).

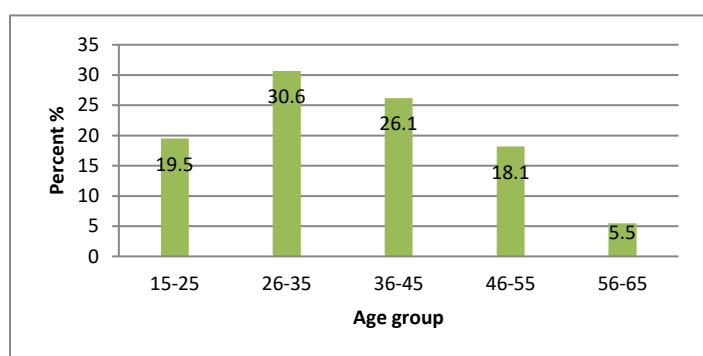


Figure 1: Referring cases frequency based on age

Table 1: The frequency distribution of job of cases

Occupation	Number	Percent (%)
Food factories	144	24
Bakery	85	14.17
Restaurant and fast food	48	8
Supermarkets	59	9.83
Confectionary	64	10.67
Fruit shop	22	3.67
Butcher, chicken and fish	15	2.5
Hairdressers for men and women	44	7.33
Services	58	9.67
Other jobs	61	10.17

The highest number of applicants, ie 41.5%, had a diploma and the lowest number referred with a master's and elementary degree.

The frequency distribution of jobs showed that 144 cases (24%) of the people were related to food factories (Table 1).

9 cases were in terms of parasite positive after testing. Of the 9 cases of positive parasites, 8 cases (88.8%) were Giardia parasites and 1 case (11.11%) was *Trichomonas hominis*. Also, 7 individuals were men. In

terms of education level, 5 cases had high school education level and 4 cases had middle school education level.

DISCUSSION

In current study, the highest number of referring was related to the age group of 26 -35. The highest number of applicants had a diploma. 9 cases were positive after testing in terms of parasite. Of the 9 positive cases, 8 cases were Giardia and 1 case was *Trichomonas hominis*. 7 individuals of them were men. Finally, 5 cases had high school and 4 cases had middle school education level.

Another study in Ardebil, Iran, found that 3.1% of the population was infected. In term of job the highest frequency was related to restaurant job. Also, Giardia was the most reported parasite in positive samples [11].

During a study in Tabriz parasite infection was identified in 172 cases (3.73%) of 4612 samples related to patients. Protozoa were found in 156 of the positive samples of patients (90.69 %). The majority of parasitic illnesses were caused by Giardia [7].

Another study in Yazd showed that parasitic infection prevalence was 3.8% in that city. The most protozoan infections were related to *Blastocystis* and Giardia, respectively [12].

CONCLUSION

The results indicate that a small number of food suppliers are infected with intestinal parasites. In order to further reduce the level of these contaminants to zero, it is necessary to provide the necessary training to those involved in jobs related to the food industry. Given that men are the most involved in occupations related to the food industry, it is necessary to increase health controls among them, and the continuation and expansion of education to improve the health of these people has a decisive role in public health.

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Conflict of Interest

We declare that we have no conflict of interest.

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