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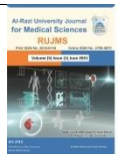

Risk Factors Associated with Prevalence of Intestinal Parasitic Infections among Schoolchildren in Amran City, Yemen

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Abstract:

Background: Intestinal parasitic infections are a significant health problem in Yemen primarily affecting school children. **Aims:** This cross-sectional study aimed to determine the prevalence of intestinal parasitic infection and their associated factors among schoolchildren in Amran town, Yemen. **Methods:** Stool samples were collected from 360 schoolchildren aged between 6-15 years old in the period from December 2021 to March 2022. Stool samples were processed and examined microscopically using direct wet-mount and formal-ether concentration techniques. All required data of study subjects were collected by a structured questionnaire. Data were statistically analyzed by SPSS and *P*-value < 0.05 was taken as statistically significant. **Results:** Of 360 schoolchildren examined for intestinal parasites, 273 (75.83%) were positive for at least one parasite. The prevalence rate of *Entameba histolytica* was the highest (60.8%) followed by *Giardia lamblia* (25.8), *Hymenolepis nana* (5.8%), *Schistosoma mansoni* (2.5%), and *Enterobius vermiculari* (0.8%). In addition, there were a significant association between intestinal parasitic infection and governorate schools (*P* = 0.010), female (*P* = 0.000), age groups of 6-10 years (*P* = 0.009), whose fathers uneducated (*P*=0.005), drinking untreated water (*P* = 0.026), eating of washed vegetables and unwashed fruits (*P* >0.05), unwashed their hands after defecation (*P* = 0.047), non-cutting their nails (*P* = 0.000). Moreover, it was found that there was no significant association between the prevalence rate of intestinal parasitic infection and clinical symptoms including blood in stool, fever, cough, muscle pain, itch skin, and weight loss (*P* >0.05). The rates of single, double, and triple parasitic infections were 75%, 22.5%, and 2.5%, respectively. **Conclusion:** This finding indicated that intestinal parasitic infections are still a public health problem in Yemen. Therefore, it demands promoted health education, improving personal hygiene practices, avoiding drinking untreated water, and eating raw vegetables and fruits are guaranteed to reduce parasitic infections.

Keywords: Amran city, Intestinal parasites, Prevalence, Risk factor, Schoolchildren, Yemen.

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Introduction

Intestinal parasitic infections (IPIs) constitute to be one of the top ten major public health problems in developing countries primarily affecting school children [1]. IPIs are commonly transmitted by both indirect and direct routes via oral-fecal, ingestion of contaminated food, vegetables, and drinking water [2,3,4].

The high prevalence rate of IPIs in developing countries depends on several factors. Socio-demographic variables associated with poverty such as reduced access to adequate sanitation, scarcity of potable water, unsafe human waste disposal systems, open field defecations, and unavailability of sufficient health care as well as the prevailing bad climatic and environmental conditions are the most important risk factors [5].

School children are always at the highest risk of acquiring parasitic infection due to their dirty habits of playing or handling infested soil, eating with soiled hands, unhygienic toilet practices, drinking and eating contaminated water, and food [6].

Around 24% of the global population are infected with soil-transmitted helminth infections, of which more than 267 million preschool-age children and over 568 million school-age children live in epidemic areas [7].

In developing countries, the Common parasites causing intestinal infections which include *Entameba histolytica*, *Giardia lamblia*, *Enterobius vermicularis, Hymenolepis nana, Schistosoma mansoni*, and *Taenia* species are spread more easily among children [7].

Yemen is one of the poorest developing countries in the world, with more than 13 million (50% of the total population) living under the national poverty line according the World Bank report [8]. Also, the country is suffering from severe water depletion and only 25% of the population has access to primary healthcare services, sanitation, and safe drinking water [9-12]. In addition, the Saudi-Emirati aggression coalition against Yemen since March 2015 and so on has worsened the situation and highly contributed to the prevalence of infectious diseases among the population particularly children approximately 3.3 million of them are suffering from severe malnutrition [13,14,15].

Numerous investigations in various parts of Yemen have been focused on the prevalence of IPIs among children in previous years. It was reported that the prevalence rate of intestinal parasitic infection was found at 58.7% in Hadramowat [16], 54.8% in Sana'a [17], 90% in Al-Mahweet [18], 38.2% in Taiz [19], 61.25% in Amran [20], and 62.7% in Ibb city [21].

Amran city is one of the small city which located in the north of Sana'a capital of Yemen and there is no recent information about intestinal parasitic infection and their associated risk factors among schoolchildren. Therefore, the present study aimed to determine the prevalence of intestinal parasitic infection and its associated factors among schoolchildren in Amran city, Yemen.

Materials and Methods

Study design and period

A cross-sectional study was conducted among 360 school students aged 6-15 years of both governorate and private schools located in Amran city in the period from December 2021 to March 2022.

Population size and sample plan

The population size of the present study was 180 students (90 boys, 90 girls) attending governorate schools and also 180 students (90 boys, 90 girls) attending private schools. The sample collection was randomly from each type of school.

Inclusion and exclusion criteria

The students who signed informed consent and delivered stool samples were included. In contrast, the students who refused to fill out the questionnaire and sign the informed consent were excluded.

Data collection

A pre-tested standard questionnaire was designed to gather relevant data from each subject participant. Selected students for the study were interviewed to obtain information about gender, age, residence and variables factors such as educational level of parents, source of drinking water, washing vegetables, and fruits before eating, hand washing after defecation, and cutting nails periodically were obtained from suspected cases. Also, the prevalent clinical information such as blood in stool, fever, cough, muscle pain, diarrhea, itch skin, abdominal pain, and weight loss were obtained. For the children, the consent forms was voluntarily signed by the parents or guardians.

Stool collection, processing, and examination

The children were given a dry, clean, leak-proof container (labeled faecal) and instructed properly on how to introduce specimens (stool) into the bottles. The collected stool samples were preserved in 10% formalin and transmitted to the laboratory for parasitological examination. A portion of each of the stool samples was processed and examined microscopically using direct wet-mount and formal-ether concentration techniques following the procedures by Cheesbrough [22].

Ethical considerations

The ethical protocol was approved by the Amran University, Yemen and permission to start data collection were also given by the Education office belonging the Amran city. Before the beginning of data collection, the study objectives and methods were explained to the manager of the school and the children to consent to inclusion in this study.

Statistical analysis

Data were analyzed using the SPSS program (version 22.0). Categorical variables were reported as frequencies, percentages, and 95% confidence interval (CI). Also, all probability values were considered statistically significant at *P*-values <0.05.

Results

Socio-demographic characterization

Among these study subjects, the stool specimens were collected equally from governorate and private schools (180 from each) as well as male and female (180 from each). Also, most stool specimens were collected from the age group of 11-15 years (64.17%), students coming from urban areas (99.2%) whose fathers had a graduate certificate (36.7%), drinking from untreated water (51.7%), eating washed vegetables and fruits (98.3% in each), washing their hands after defecation (96.7%) and cutting their nails periodically (80%) (Table 1).

Table 1. Socio-demographic characteristic of subject study

Variables	Categories	Frequency	Rate (%)
School type	Governorate	180	50.0
	Private	180	50.0
Gender	Male	180	50.0
	Female	180	50.0
Age	6-10	129	35.83
	11-15	231	64.17
Residence	Rural	3	0.8
	Urban	357	99.2
Parents educational status	Illiterate	39	10.8
	Primary	108	30.0
	Secondary	81	22.5
	Graduate	132	36.7
Source of drinking water	Treated	174	48.3
	Untreated	186	51.7
Eating washed vegetables	Yes	354	98.3
	No	6	1.7
Eating washed fruits	Yes	354	98.3
	No	6	1.7
Hand washing after defecation	Yes	348	96.7
	No	12	3.3)
Cutting nails periodically	Yes	288	80.0
	No	72	20.0

Prevalence of intestinal parasitic infections

This result presented in Figure (1) indicates that 273 (75.83%) schoolchildren were positive for at least one parasite while 87(24.17%) were negative.

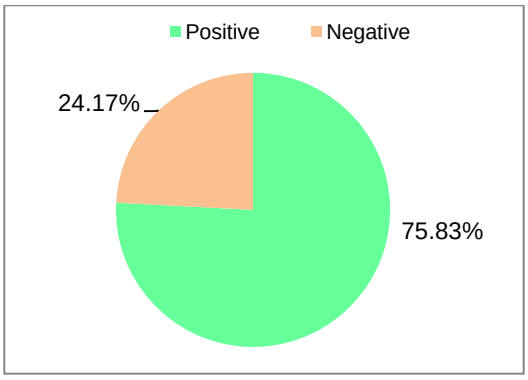

Figure 1. Prevalence rate of intestinal parasitic infection

The present result revealed that the *E. histolytica* was the most frequent parasite detected with prevalence rate of 60.8% while the *E. vermiculari* was the less frequently seen with a rate of 0.8% as summarized in Table (2).

Table 2. Frequency of intestinal parasites among subject study

Parasites	Infected No. (%)	Un-infected No.(%)
E. histolytica	219 (60.8)	141 (39.2)
G. lamblia	93 (25.8)	267 (74.2)
H. nana	21 (5.8)	339 (94.2)
S. mansoni	9 (2.5)	351 (97.5)
E. vermiculari	3 (0.8)	357 (99.2)

Risk factors associated with IPIs

This present result revealed that a significant association between intestinal parasitic infection and type of school with governorate having a significantly higher prevalence rate compared to private schools (81.70% vs. 70%; 95% CI = 1.45-1.55, *P* = 0.010).

Table 3. Univariate analysis of factors associated with intestinal parasitic infection among study subjects

Variables	Categories	No. of sample (%)	Infected No.(%)	95% (CI)	*P* value
School type	Governorate	180(50)	147(81.7)	1.45-1.55	0.010
	Private	180(50)	126(70.0)		
Gender	Male	180(50)	120(66.7)	1.45-155	0.000
	Female	180(50)	153(85.0)		
Age	6-10	129(35.83)	108(83.7)	1.59-1.69	0.009
	11-15	231(64.17)	165(71.4)		
Residence	Rural	3(0.8)	3(100)	1.98-2.00	0.328
	Urban	357(99.2)	270(75.6)		
Parents' educational status	Illiterate	39(10.8)	33(84.6)	2.74-2.96	0.005
	Primary	108(30)	69(63.9)		
	Secondary	81(22.5)	63(77.8)		
	Graduate	132(36.7)	108(81.8)		
Source of drinking water	Treated	174(48.3)	141(81.0)	1.46-1.57	0.026
	Untreated	186(51.7)	132(70.9)		
Washing vegetables before eating	Yes	354(98.3)	270(76.3)	1.00-1.03	0.137
	No	6(1.7)	3(50.0)		
Washing fruits before eating	Yes	354(98.3)	267(75.4)	1.00-1.03	0.164
	No	6(1.7)	6(100)		
Hand washing after defecation	Yes	348(96.7)	261(75.4)	1.01-1.05	0.047
	No	12(3.3)	12(100)		
Cutting nails periodically	Yes	288(80)	207(71.9)	1.16-1.24	0.000
	No	72(20)	66(91.7)		
Blood in stool	Yes	39 (10.8)	27(79.2)	1.86-1.92	0.309
	No	321(89.2)	246(76.6)		
Fever	Yes	207 (57.5)	156(75.4)	1.37-1.48	0.809
	No	153 (42.5)	117(76.5)		
Cough	Yes	189 (52.5)	141(74.6)	1.42-1.53	0.568
	No	171 (47.5)	132(77.2)		
Muscles pain	Yes	174 (48.3)	138(79.3)	1.46-1.57	0.137
	No	186 (51.7)	135(72.6)		
Diarrhea	Yes	195 (54.2)	156(80.0)	1.41-1.51	0.045
	No	165 (45.8)	117(70.9)		
Itch skin	Yes	201 (55.8)	147(73.1)	1.39-1.49	0.180
	No	159 (44.2)	126(79.2)		
Abdominal pain	Yes	258 (71.7)	210(81.4)	1.24-1.33	0.000
	No	102 (28.3)	63(61.8)		
Weight loss	Yes	168 (46.7)	123(73.2)	1.48-1.59	0.279
	No	192 (53.3)	150(78.1)		

CI= Confidence interval. Significant association ($P \leq 0.05$)

Similarly, the difference was statistically significant among the gender (*P* = 0.000) and different age groups (*P* = 0.009). With regards to parents' educational level, the prevalence of intestinal parasitic infection was significantly higher among children of uneducated fathers (84.6%; 95% CI = 2.74-2.96; *P* = 0.005). However, the difference between the source of drinking water was statistically significant (95% CI = 1.46-1.57; *P* = 0.026) as summarized in Table (3).

In contrast, there was a non-statistical difference between intestinal parasitic infection and eating unwashed vegetables and fruits (*P* >0.05). The result of this study showed that all student who didn't wash their hands after defecation were completely (100%) infected with significant statistically deference (95% CI = 1.01-1.05; *P* = 0.047). A similar observation has been reported among study subjects who didn't cut their nails having a higher rate of intestinal infection with significant statistical deference (95% CI = 1.16-1.24; *P* = 0.000). Moreover, it was found that there was no significant association between the prevalence rate of intestinal parasitic infection and clinical symptoms including blood in stool, fever, cough, muscle pain, itch skin, and weight loss (*P* >0.05) (Table 3).

Distribution of intestinal parasitic infection

Table 4 shows that the high rate of most intestinal parasites was among schoolchildren studying at governorate schools, female students, and age group of 6-10 years. Also, participant who eaten washed vegetables and didn't washed their hands after defection were found to be infected by most of IPIs.

Table 5 shows the distribution of intestinal parasitic infection among participants associated with clinical symptoms.

Table 4. Distribution of protozoa and helminthes among subject study

Variables	Categories	No. of sample (%)	*E. histolytica*	*G. lamblia*	*S. mansoni*	*H. nana*	*E. vermicularis*
School type	Governorate	180(50)	126 (70)	57(31.7)	0(0)	15(8.3)	0(0)
	Private	180(50)	93(51.7)	36(20)	9(5)	6(3.3)	3(1.7)
Gender	Male	180(50)	93(51.7)	51(28.3)	0(0)	3(1.7)	0(0)
	Female	180(50)	126 (70)	42(23.3)	9(5)	18(10)	3(1.7)
Age	6-10	129(35.83)	81(62.8)	39(30.2)	63(48.8)	15(11.6)	3(2.3)
	11-15	231(64.17)	138(59.4)	54(23.4)	117(50.6)	6(2.6)	0(0)
Residence	Rural	3(0.8)	0(0)	3(100)	0(0)	0(0)	0(0)
	Urban	357(99.2)	219(61.3)	90(25.2)	9(2.5)	21(5.9)	3(0.8)
Parents educational status	Illiterate	39(10.8)	24(61.5)	18(46.2)	3(7.7)	0(0)	0(0)
	Primary	108(30)	66(61.1)	18(16.7)	0(0)	6(5.5)	0(0)
	Secondary	81(22.5)	48(59.3)	24(29.6)	3(3.7)	12(14.8)	3(3.7)
	Graduate	132(36.7)	81(61.4)	33(25)	3(2.3)	3(2.3)	0(0)
Source of drinking water	Treated	174(48.3)	111(63.8)	39(22.4)	3(1.7)	18(10.3)	3(1.7)
	Untreated	186(51.7)	108(57.1)	54(29)	6(3.2)	3(1.6)	0(0)
Washing vegetables before eating	Yes	354(98.3)	219(61.8)	90(25.4)	9(2.5)	21(5.9)	3(0.8)
	No	6(1.7)	0(0)	0(0)	0(0)	0(0)	0(0)
Washing fruits before eating	Yes	354(98.3)	216(61)	90(25.4)	9(2.5)	21(5.9)	3(0.8)
	No	6(1.7)	3(50)	3(50)	0(0)	0(0)	0(0)
Hand washing after defecation	Yes	348(96.7)	207(59.5)	87(25)	9(2.6)	21(6.0)	3(0.9)
	No	12(3.3)	12(100)	6(50)	0(0)	0(0)	0(0)
Cutting nails periodically	Yes	288(80)	162(56.3)	69(23.9)	9(3.1)	12(4.2)	3(1.0)
	No	72(20)	57(79.2)	24(33.3)	0(0)	9(12.5)	0(0)

Table 5. Distribution of intestinal parasites associated with clinical symptoms

Variables	Categories	No. of sample (%)	*E. histolytica*	*G. lamblia*	*S. mansoni*	*H. nana*	*E. vermicularis*
Blood in stool	**Yes**	39 (10.8)	21(53.8)	9(23.0)	0(0)	9(23)	0(0)
	No	321(89.2)	198(61.7)	84(26.2)	9(2.8)	12(3.7)	3(0.9)
Fever	**Yes**	207 (57.5)	126(60.8)	66(31.9)	0(0)	15(7.2)	0(0)
	No	153 (42.5)	93(60.8)	27(17.6)	9(5.9)	6(3.9)	3(1.9)
Cough	**Yes**	189 (52.5)	114(60.3)	63(33.3)	6(3.2)	12(6.3)	0(0)
	No	171 (47.5)	105(61.4)	30(17.5)	3(1.7)	9(5.2)	3(1.7)
Muscle pain	**Yes**	174 (48.3)	120(68.9)	36(20.7)	6(3.4)	12(6.8)	0(0)
	No	186 (51.7)	99(53.2)	57(30.6)	3(1.6)	9(4.8)	3(1.6)
Diarrhea	**Yes**	195 (54.2)	129(66.1)	57(29.2)	6(3.1)	15(7.7)	3(1.5)
	No	165 (45.8)	90(54.5)	36(21.8)	3(1.8)	6(3.6)	0(0)
Itch skin	**Yes**	201 (55.8)	120(59.7)	54(26.8)	9(4.5)	12(5.9)	0(0)
	No	159 (44.2)	99(62.2)	39(24.5)	0(0)	9(5.6)	3(1.8)
Abdominal pain	**Yes**	258 (71.7)	165(63.9)	78(30.2)	9(3.4)	21(8.1)	3(1.1)
	No	102 (28.3)	54(52.9)	15(14.7)	0(0)	0(0)	0(0)
Weight loss	**Yes**	168 (46.7)	87(51.7)	51(30.3)	6(3.5)	12(7.1)	0(0)
	No	192 (53.3)	132(68.7)	42(21.8)	3(1.5)	9(4.7)	3(1.5)

Table 6. Multiplicity of parasitic infections among study subjects

Infections multiplicity	Parasites species	Cases No.(%)
One parasite	*E. histolytica*	156 (55.71)
	G. lamblia	39 (13.93)
	H. nana	9 (3.21)
	S. mansoni	6 (2.14)
Total		**210 (75)**
Two parasites	*E. histolytica* + *G. lamblia*	54 (19.28)
	E. histolytica + *H. nana*	6 (2.14)
	E. vermiculari + *S. mansoni*	3 (1.07)
Total		**63 (22.5)**
Three parasites	*E. histolytica* + *G. lamblia* + *H. nana*	6 (2.14)
	S. mansoni + *H. nana* + *E. vermiculari*	1 (0.36)
Total		**7 (2.5)**
Total		**280 (100)**

Discussion

Globally intestinal parasites are one of the most serious public health concerns with widely distribution patterns in many countries, particularly in developing countries and seen mainly in children [2]. Yemen is one of the poorest developing countries and the infectious disease still threatens the population mainly children [23].

Current findings revealed that the overall rate of intestinal parasitic infection was 75.83% observed among schoolchildren. This result is consistent with reports that documented the prevalence rate of intestinal parasites infection in some regions in Yemen was 73.25% in Hajjah [24], 62.7% in Ibb [21], 61.25% in Amran [20], and 61.85% in Sana'a [4]. However, the lower rate of this result was reported in Yemen at 58.7% in Hadramowat governorate [16], 57.4% in Ibb [24], and 54.8% in Sana'a [17]. In contrast, the higher rate was 90% reported in Al-Mahweet governorate by Alwabr and Al-Moayed [18].

This observed difference might be due to differences in the study period, method of stool examination, geographical area, and sample size. Also, the high prevalence of infectious diseases in later years in Yemen resulted from the war since 2015 and so on. Also, these conflicts have been contributing significantly in increase poverty among the population, increasing costs the live requirements, and most families immigrating to other areas that are safe for them to live [26-33].

This result showed that *E. histolytica* was the most frequent parasite with 60.8% followed by *G. lamblia* (25.8), *H. nana* 5.8%, *S. mansoni* (2.5%), and *E. vermiculari* (0.8%). The current result is similar to earlier reports documented in Yemen. A study by Alsubaie *et al*. [24] documented that the *E. histolytica* was the most predominant parasite (33.7%), followed by *G. lamblia* (23.6%), *A. lumbricoides* (14.3%), *T. trichiura* (9.3%), *H. nana* (6.2%), *S. mansoni* (3.1%), *A. duodenale* (1.2%), *E. vermicularis* (0.8%), and *S. stercoralis* (0.8%).

In a study conducted in Hajjah by Mogalli *et al*. [24] reported that rates of *E. histolytica* was 30.03%, followed by *G. lamblia* (22.53%), *E. vermicularis* (17.75%), *A. lumbricoides* (14.33%), *H. nana* (7.51%), *S. mansoni* (5.4%), *T. trichiura* (1.71%), and *A. duodenale* (0.68%). Recently, Edrees *et al*. [4] observed *E. histolytica* at 49.32% followed by *G. lamblia* (30.14%), *H. nana* (9.59%), *Taenia* species (6.84%), and *A. lumbricoides* (4.11%).

This study revealed a higher prevalence of infection in governorate schools (81.1%) compared to private schools (70%). This result is statically significant and agrees with the previous study that the infection rate among governorate schools (63.63%) compared to private schools (60%) [34].

The females in this study were found to be more infected than males with strongly significant difference (*P*= 0.000). This finding is consistent with reports by Al-Yousofi *et al.* [35]. Inconsistent with other studies, a male had a higher infection rate of IPIs compared to females [17,18,36].

The higher rate of infection in females in this report can be justified by considering that females are more exposed to the infective stages of parasitic infection due to the nature of the chores they perform in the house and their lifestyle. Females, on average, have more soil contact when cultivating vegetables and eat raw vegetables with prepared food more frequently than males, and IPI was found to be relatively common among pregnant women. Also, females in Yemen particularly in Amran are responsible for obtaining water from water sources that could be contaminated with infectious diseases [35].

The present finding revealed that an age group of 6-10 years had a significantly higher prevalence rate compared to 11-15 years (83.7% vs. 71.4%; *P* = 0.009). This finding is reliable to reports carried out in Yemen [4, 24].

As regards the parents' educational level in this study, the prevalence of intestinal parasitic infection was significantly higher among children of uneducated fathers (84.6%; 95% CI = 2.74-2.96; *P* = 0.005). This result has been supported by the previous investigation conducted in Yemen and revealed statistically significant higher prevalence rates of IPIs among children with uneducated parents [18, 37,38]. The educational status of the parents is considered a significant factor that has been reported to influence the parasitic infection [6].

This finding observed a higher prevalence of infection in schoolchildren drinking from untreated water (51.7%) compared to treated water (48.3%) with statically significant (*P* = 0.026). This was supported by many other studies [5, 38,39] and has been well documented. Usually, the Yemeni people, mainly in rural areas are depending on the dams as the main sources of drinking water. These types of water have been exposed to high pollution due to human and animal faces during the rainy season [19].

In addition, there was a non-statistical significant association between intestinal parasitic and eating washed vegetables and unwashed fruits (*P* >0.05). Inconsistent with reports have been proven that a significant statistical difference between the IPIs prevalence and use of unwashed vegetables and fruits [5,17]. Also, the association between the prevalence of intestinal parasitic infection and vegetables in Sana'a city was documented by Edrees *et al.* [40] found that 65.3% of marketing fresh vegetables examined for IPIs were contaminated.

According to personal hygiene in this study, it was found the prevalence of IPIs had a higher rate among participants who unwashed their hands after defecation (*P* = 0.047) and non-cutting their nails (*P* = 0.000). This result has been supported by some investigation [17,18,35].

Intestinal parasite infections are commonly linked to living situations, poverty levels, personal and environmental hygiene, access to safe drinking water, health facility adequacy, and sanitation practices [5,35]. Several studies showed that sociodemographic characteristics and associated factors contribute greatly to contracting intestinal parasitic infections [41,42]. The major factors associated with the prevalence of pathogenic microorganisms in Yemen are referring to the low hygienic practices, environmental contamination with fecal, lack of safe water, and

health education resulting from a high level of poverty [43-47].

Furthermore, this report revealed a significant association between the prevalence rate of intestinal parasitic infection and clinical symptoms including diarrhea (P= 0.045) and abdominal pain (P= 0.000). This result was supported by Al-Haddad and Baswaid [16] and Qasem *et al*. [21] in Yemen found an association between intestinal parasitic infection and clinical symptoms including diarrhea, abdominal pain, abdominal distention, constipation, nausea, vomiting, and fever. A similar result was found among Yemeni immunocompromised patients where diarrhea was associated with a higher risk of cryptosporidiosis and giardiasis [48,49].

Most IPIs were associated with diarrhea and abdominal cramps. In this study, diarrhea was significantly associated with parasitic infections. The possible reason might be due to the diarrhea-causing nature of intestinal parasites [35,50].

Additionally, the present survey indicated that the multiple infections by two types of intestinal parasites were 22.5%. This report is similar to results performed by Edrees *et al.*[4] in Sana'a (23.53%), in Al-Mahweet (75.5%) [18], and in Hajjah governorate (44%) [24].

Conclusion

In conclusion, IPIs constitute to be an inaudible a significant health problem in Yemen, with an alarmingly high prevalence of *E. histolytica* and *G. lamblia* infections. Low health education, inadequate personal hygiene, lack of access to clean water, and individual behavior were found to be major factors that contribute to the prevalence of parasitic intestinal infections. Therefore, a multi-sector effort is required to effectively highlight reducing this infection. A proper health education, improving personal hygiene practices and behavior, and avoiding drinking untreated water are imperative for an effective and sustainable control program to reduce parasitic infections in Yemen.

Conflict of interest

No conflict of interest is associated with this work.

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