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Original article

Epidemiological Study of Gastro-Intestinal Parasites in Selected Areas of Plateau State, Nigeria

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ABSTRACT

Background and aims. *Human societies have always been challenged by infectious diseases, some of which are caused by helminths and protozoan parasites. One-fourth of the known human infectious diseases are caused by helminths/protozoan groups. Intestinal parasitic infections constitute a public health nuisance in developing countries, with high prevalence rates that continue to ravage mankind as the socio-economic status of the affected populations deteriorates. Investigating the occurrence of these infections is critical since it helps to map out prevention and control strategies for the infections.* ***Methods.*** *This study is a cross-sectional, analytical, quantitative study conducted in parts of Plateau State, Nigeria to study the epidemiology of gastrointestinal parasites. 1257 stool samples were collected from humans and examined by formol-ether sedimentation techniques, and 1257 questionnaires were administered.* ***Results.*** *The prevalence of the gastrointestinal parasites identified in the study were E. histolytica 76(6%), A. lumbricoides 74(5.9%), E. vemicularis 1(0.1%) Hookworm 41 (3.3%), E. coli 6(0.5%), T. hominis 7(0.6%), H. nana 1(0.1%), S. mansoni 10(0.8%), G. lamblia 98(7.8%), T. trichiura 2(0.2%), T. solium 1(0.1%), and socio-demographic factors includes age-group, level of education, employment status, unskilled occupation, and drinking well water, which is potential risk factors. Furthermore, findings in the study showed that human gastrointestinal parasitic infection correlates with lower socio-economic status and poor sanitation conditions, representing a scourge, particularly for the poorest populations.* ***Conclusion****. These diseases caused by protozoa and helminth parasites are infestations that may trigger changes in the physical, psychosomatic, and social state of patients, directly interfering with their quality of life.*

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INTRODUCTION

Gastrointestinal parasites live in the small and large intestines of their hosts. Tapeworms, roundworms (or nematodes), and protozoa are the three forms of these parasites that inhabit humans' small and big intestines. They are one of the most prevalent illnesses among people, particularly in tropical and subtropical areas [1]. Globally, intestinal parasites have been linked to morbidity and mortality, particularly in impoverished nations and among people who also have co-morbid conditions [2]. Due to favourable climatic, environmental, and sociocultural conditions that allow for the transmission of these parasites throughout the seasons of the year, the diseases caused

by these parasites are widespread in the tropics [3]. According to reports, 450 million people become morbid from these infections; the majority of them are children, and around 3.5 billion out of the world's 7 billion people are impacted [4]. However, the prevalence of intestinal parasite infections varies greatly from location to location in response to the mode of disease transmission and thus represents a global health burden [4].
This study will provide baseline data as a prerequisite to developing appropriate control strategies for gastrointestinal parasitic infections that impose health problems in the communities and stress the necessary interventions to combat these infections. The pattern of infection among the population through epidemiological studies of the communities is not known for the greater part of the state. The paucity of information available as regards the pattern of transmission, distribution, and prevalence of this parasitic disease necessitates these studies.

METHODS

Study area

The study sites are Jos East, Mangu, and Qua'an-Pan LGAs in Plateau State, Nigeria. It is located between latitude 9.50 N and Longitude 8.50 E with an area of 26,899 square kilometers. Plateau State is composed of seventeen Local Government Areas (LGAs) with Jos as the capital. The 2006 population census figures revealed that this state has a population of about 3.5 million people. Jos-North, which seats the state capital, has a population of over 500,000 inhabitants [5].

Study population

A cross-sectional analytic quantitative study design was performed. Samples were collected weekly between August 2018 to August 2019. A total of 1257 stool samples were collected in three randomly selected Local Government Areas. In Jos East LGA, a total of 418 stool samples were collected, in Mangu LGA, 420 stool samples were collected, and 419 stool samples were collected in Qua'an-Pan LGA. A total of 1257 questionnaires were also administered to each participant in the study and a blind method of observatory clinical trials was adopted to ensure privacy.

Collection of samples

Fresh (early morning) stool samples were collected in screw-capped containers containing Merthiolate-iodine-formaldehyde fixative from participants and were preserved in 10% formalin solution and then transported to the laboratory. The samples were stored at room temperature and were processed for laboratory screening.
A pre-tested structured questionnaire was issued to gather socio-demographic, and personal hygiene practices information. Interviews were conducted individually by trained healthcare professionals to ensure privacy. Demographic and epidemiological data, as well as information on symptoms suggestive of intestinal parasitic infections, were collected [6]. The height and weight of the patients were also recorded using standard calibrated instruments [7].

Screening of sample procedure

Wet-mount technique: The stool samples were examined macroscopically for the presence of adult worms, consistency, and any other physical abnormalities. The stool samples were emulsified with 3 to 4 ml normal saline, and a drop of the emulsified sample was placed on a glass slide stained with (1-2) drops of iodine, and covered with a cover slip. The preparation was first examined under a 10x objective lens, then 40x for detailed identification of parasites under low light intensity.
Formol-ether concentration: After completion of direct stool screening, one gram of each sample was emulsified in 10% formalin solution and the formol-ether concentration technique was adopted. Half teaspoonful of faeces is thoroughly mixed in 10ml of water and strained through two layers of gauze in a funnel. The filtrate is centrifuged at 2,000 rpm for 2 minutes. The supernatant is discarded and the sediment is re-suspended in 10ml of physiological saline. It is again centrifuged and the supernatant is discarded. The sediment was re-suspended in 7ml of formalin saline and allowed to stand for 10 minutes or longer for fixation. To this is added 3ml of Ether. The tube was stoppered and shaken vigorously to mix. Then the stopper was removed and the tube was centrifuged at 2,000rpm for 2 minutes. The tube was allowed to rest on a stand. Four layers become visible, the top layer consists of Ether, the second is a plug of debris, the third is a layer of formalin saline and the fourth is sediment. The plug debris is detached from the side of the tube with the aid of a glass rod and the liquid is poured off leaving a small amount of formalin saline for suspension of the sediment. It is poured on a clean glass slide, covered with a cover slip, and examined under a microscope [8].

Statistical analysis

Differences in the prevalence of infection based on gender, age groups, level of education, and occupation (independent variables), were determined by a chi-squared (x^2) test. The univariate crude odds ratio (COR) and 95% CI were used to determine associations between the independent variables and risk factors for infection. The adjusted odds ratio (AOR) in the multivariate analysis was used to see the strength of the association of the risk factors with infection, p-values of < 0.05 were considered statistically significant. The age, height, and weight of the respondents were used in anthropometric calculations of the age-associated body-mass index (BMI, kg/m^2) according to WHO reference tables [9,7].
The data collected were analyzed using descriptive methods such as means, and percentages, with statistical packages for social sciences (SPSS) version 25. The chi-square test was used to assess the association between categorical variables.
Potential risk factors typically associated with parasitic infection were taken into account for the analysis. These included sex, age group, level of education, residence, behavioral (habit of washing hands, previous antiparasitic treatment in the past two years), working in the vegetable garden, eating raw/ improperly cooked vegetables, knowledge of the meaning of parasitic infection and having undergone previous stool tests. Logistic regression was used to investigate the effect of structural, social, and behavioral factors on the presence of parasitic diseases and symptoms generally associated with these infections [6]. Odds ratios (OR) and respective confidence intervals (95%) were expressed for each level. Significance was set at $p < 0.05$.

RESULTS

The study had a total population of 1257 persons recruited from Qua'an Pan, Jos-East, and Mangu Local Government Areas (LGA) of Plateau State. Out of these subjects, 271 (21.6%) stool samples tested positive and 986 (78.4%) were negative for human gastrointestinal parasitic infections (Table 1). Infection prevalence per LGA was 8.4%, 5.5%, and 7.7% in Qua'an Pan LGA, Jos East, and Mangu LGA respectively.

Table 1. Prevalence of parasites in the study

Local Govt. Area	No Examined	No Infected (%)	Odd Ratio	χ^2	P-Value	95%
Qua'an-Pan	419	105(8.35)	-	9.93	0.007	-
Jos east	418	69(5.45)	-			-
Mangu	420	97(7.72)	-			-
Total	1257	271(21.56)	-			-

** Bivariate analysis showed a statistically significant ($P<0.05$) association between study sites and parasitic infectivity ($P = 0.01$, $\chi2 = 9.93$).*

Parasite discovered in the study

Out of the samples examined (Table 2), 12 species of intestinal parasites were identified. Of the intestinal parasites identified *Giardia lamblia* 98 (7.8%) had the highest prevalence followed by *Entamoeba histolytica* 76 (6.04%), *Ascaris lumbricoides* 74 (5.89%), Hookworm 41 (3.26%), *Schistosoma mansoni* 10 (0.79%), *Trichuris hominis* 7 (0.56%), *Entameoba coli* 6 (0.48%), *Trichuris trichiura* 2 (0.16%), *Hymenolepis nana* 1 (0.08%), *Taenia solium* 1 (0.08%). Table 3 shows the spread of parasites in the study site.

Table 2. The overall prevalence of parasites isolated in the study

Species	No. Isolated	%
	No	**%**
Protozoa		
E. histolytica	76	6.04
E. coli	6	0.48
T. hominis	7	0.56
G. lamblia	98	7.79
Helminths Cestodes;		
H. nana	1	0.08
T. solium	1	0.08
Trematodes;		

S. mansoni	10	0.79
Nematodes;		
Hookworm	41	3.26
A. lumbricoides ***T. trichiura***	2 74	0.16 5.89
S. stercoralis	1	0.79
E. vermicularis	1	0.79

Table 3. Parasitic Species at Study Sites

	Qua'an Pan LGA		Jos East LGA		Mangu LGA		
Parasite species	No Infected (%)	No Examined (%)	No Infected (%)	No Examined (%)	No Infected (%)	No Examined (%)	χ^2
Protozoans;							
E. histolytica	67(5.3)	352(28)	4(0.3)	414(32.9)	5(0.4)	415(33)	109.431a
E. coli	0(0)	419(33.3)	4(0.3)	414(32.9)	2(0.2)	418(33.3)	8.091[a]
G. lamblia	19(1.5)	400(31.8)	25(2)	393(31.3)	54(4.3)	366(29.1)	8.906[a]
T. hominis	6(0.5)	413(32.9)	0(0)	418(33.3)	1(0.1)	419(33.3)	4.021[a]
Helminths Cestodes;							
H. nana	0(0)	419(33.3)	1(0.1)	417(33.2)	0(0)	420(33.4)	2.009[a]
T. solium	0(0)	419(33.3)	1(0.1)	417(33.2)	0(0)	420(33.4)	
Trematodes							
S. mansoni	1(0.1)	418(33.3)	9(0.7)	409(32.5)	0(0)	420(33.4)	14.776[a]
Nematodes							
A. lumbricoides	14(1.1)	405(32.2)	27(2.1)	391(31.1)	33(2.6)	387(30.8)	14.776[a]
E. vermicularis	1(0.1)	418(33.3)	0(0)	418(33.3)	0(0)	420(33.4)	2.002[a]
Hookworm	27(2.1)	392(31.2)	3(0.2)	415(33)	11(0.9)	409(32.5)	22.570[a]
T. trichiura	0(0)	419(33.3)	2(0.2)	416(33.4)	0(0)	420(33.4)	4.034[a]
S. stercoralis	0(0)	419(33.3)	0(0)	418(33.3)	1(0.1)	419(33.3)	2.009[a]
TOTAL	129				107		

Key: a= significant level, LGAs: Local Government Areas

Logistic regression showed that the age group 0-29.5 years are 0.105 times more likely to be infected with any intestinal parasitic infections compared with the age group above 29.5years (OR= 6.395, CI=4.778-8.560, $\chi 2$=176.778). Similarly, the respondents who had no formal education and primary education are about 0.064 times more likely to be infected with any intestinal parasitic infection compared with those who had secondary and tertiary level of education ($\chi 2$=71.348, OR=3.339, CI=2.502-4.456). The occupation of the respondents was also analysed using logistic regression. It was observed that the skilled employees amongst the respondents were 0.144 times more likely to have had any intestinal parasitic infections compared with those who were unskilled (OR=0.681, CI=0.897, $\chi 2$=7.552). The logistic regression also revealed that the respondents whose source of drinking water is well were about 2.947 times more likely to be infected with any intestinal parasitic infection compared with those who do not use well as a source of drinking water (P=0.000, OR=0.991, CI=0.795-1.235). Thus, the source of drinking water (well) affects intestinal parasite infectivity. There is a statistically significant ($P<0.05$) association between drinking well water and intestinal parasite infection.

Table 4. Socio-demographic factors and parasitic prevalence

Risk factors	No Examined (%)	No Infected (%)	Odd Ratio	χ^2	P-Value	95%
Gender						
Male	577 (45.9)	120(9.55)	0.92	0.366a	0.582	0.702-1.206
Female	680(54.1)	151(12)				
Age group						
1_10	52(4.1)	42(3.3)		213.087a	0	
11_20	170(13.5)	12(1)				
21_30	365(29)	132(10.5)				

31_40	577(45.9)	64(5.1)				
41_50	79(6.3)	19(1.5)				
51_60	14(1.1)	2(0.2)				
Level of education						
No education(no/yes)						
No	1073(85.4)	212(16.9)	1.917	14.069a	0	1.359-2.704
Yes	184(14.6)	59(4.7)				
Primary education(no/yes)						
No	1131(90)	211(16.8)	3.954	56.235a	0	2.71-5.798
Yes	12(10)	60(4.8)				
Secondary education(no/yes)						
No	569(45.3)	207(16.5)	0.179	135.021a	0	0.132-0.244
Yes	688(54.7)	64(5.1)				
Tertiary education(no/yes)						
No	997(79.3)	183(14.6)	2.276	29.263a	0	1.681-3.081
Yes	260(20.7)	88(7)				
Occupation						
Unemployed(no/yes)						
No	943(75)	222(17.7)	0.601	8.744a	0.003	0.427-0.844
Yes	314(25)	49(3.9)				
Unskilled(no/yes)						
No	1122(89.3)	203(16.1)	4.595	74.237a	0	3.174-26.652
Yes	135(10.7)	68(5.4)				
Skilled(no/yes)						
No	449(35.7)	116(9.2)	0.681	7.552a	0.007	0.518-0.897
Yes	808(64.3)	155(12.3)				
Source of drinking water						
Well-water(no/yes)						
No	448(35.6)	96(7.6)	1.012	0.007a	0.943	0.764-1.34
Yes	809(64.4)	175(13.9)				
Stream (no/yes)						
No	1100(87.5)	247(19.6)	0.623	4.174a	0.048	0.395-0.984
Yes	157(12.5)	24(1.9)				
Pipe-borne (no/yes)						
No	1254(99.8)	268(21.3)	0.214	10.941a	0.01	0.192-0.238
Yes	3(0.2)	3(0.2)				
River (no/yes)						
No	1244(99)	258(20.5)	0.207	47.793a	0	0.186-0.231
Yes	13(1)	13(1)				
Pond water (no/yes)						
No	1248(99.3)	262(20.8)		32.982	0	
Yes	9(0.7)	9(0.7)				
Bore-hole (no/yes)						
No	521(41.4)	106(8.4)	0.21	0.775	0.404	0.189-0.234
Yes	736(58.6)	165(13.1)				
Spring water (no/yes)						
No	1257(100)	271(21.6)				
Yes						
Rockpool water (no/yes)						
No	1254(99.8)	268(21.3)	0.214	10.941a	0.01	0.192-0.238
Yes	3(0.2)	3(0.2)				
Geophagia water (no/yes)						

No	1249(99.4)	263(20.9)	0.211	29.293a	0	0.189-0.234
Yes	8(0.6)	8(0.6)				

DISCUSSION

It was reported [10] that of 554 human faecal samples examined, 50.4% harboured intestinal parasites. Data indicated that A. lumbricoides (24.2%) followed by hookworm infections (10.1%) were most prevalent, whereas infections with *G. lamblia* were 2% and infection with *E. histolytica* (1.8%) was least encountered. *A. lumbricoides*, *Trichuris trichiura*, and hookworm were found [11] in stool samples examined in five LGAs in Delta State. The lower prevalence recorded in this study could be attributed to variations in certain geographic factors, environmental factors, and sanitation levels which might have played key roles in the survival and fecundity of these parasites [12,3,13]. However, this is subject to further investigation.

The results obtained from earlier studies [14] showed that 188 (67.6%) of the 278 stool samples examined were positive for E. histolytica. The prevalence of E. histolytica recorded [14] is quite higher than those obtained by some other researchers. A prevalence of 26.7% among school-aged children was reported in Lafia, Nassarawa state [15], in Anambra, Southeast, and Jos, Plateau State Nigeria, rates of 12.6% and 17.0% were recorded among children, respectively [16,17]. However, the highest prevalence of 72% for E. histolytica was recorded among food vendors in Abeokuta [18]. Also, reports have shown 5.3% in India [19] and 39.8% prevalence of the E. histolytica/dispar complex with microscopy in Northern Ghana [20]. The comparative high prevalence of E. histolytica (67.6%) in the study [14] relative to the present finding (21.6%) can be attributed to poor sanitary practice, unhygienic methods of waste disposal, shortage of good water supply, and low standard of personal hygiene among the children [14]. The transmission of these parasites is mainly by the fecal-oral route. Transmission of E. histolytica infection is through the fecal-oral route by consumption of food, water, or drinks contaminated with cysts of the parasite. Licking or sucking of faecally contaminated hands has been documented to introduce the infection to humans [21] as cited by [14].

This study shows that intestinal parasites continue to be an important source of infections in the study population, affecting all genders and ages. The results indicated that the highest infectivity rate of intestinal parasites was observed in female individuals (12%) than the male individuals (9.5%). The finding does not deviate from another study [22], which reported that the discrepancy in demand for health services related to gender shows that women seek access to basic care more than men. Thus, this high infection rate is evident among women, observing that men use primary health services less. This result seems to occur because the culture of the society reaffirms the belief that man does not need prophylaxis and care [23]. Men are often more affected by chronic diseases and often severe compared to women [22].

Logistic regression analysis shows a significant relationship between the prevalence of parasites and the history of psychological disorders, stress, sedentary lifestyle, drug abuse, fingernails cut, dirt in fingernails, availability of latrine, and washing of anal area after defecation.

This study is comparable to other studies [13], whose report showed that the age group of 1 to 5 years was most affected by intestinal parasites, followed by 6 to 10 years. However, this age group preponderance is in contrast to some other findings [24,25] which revealed that most infestations occur in the 6 to 12 years age category, followed by the 1 to 5 years age group.

Age is an important risk factor. Our study indicates that the age group 0-29.5 years was 0.105 times more likely to be infected with any intestinal parasite infection compared to the age group above 29.5 years. This is to say that younger people are more exposed to intestinal parasitic infections than older people. The bivariate analysis revealed a significant association between age group and parasitic infectivity. The finding is in congruence with another study [26], whose study in Pakistan showed that preschool and school-going children have been reported to be at the highest risk for intestinal parasite infection.

The association between intestinal parasitic infections and the level of education of the study participants indicated that respondents who had no formal and primary level of education were more likely to have been infected with any intestinal parasite infection compared to secondary and tertiary-level education respondents. The observations in the present study do not in any way rule out the findings of other studies [27], In Ethiopia and other less developed countries, the researchers reported a strong association between intestinal parasite infection and the low level of education of children's mothers [28,29,27]. The finding in this study is more likely because the high level of education provides respondents with better knowledge on sanitation measures and good personal hygiene habits such as regular hand washing before meals and the knowledge about faecal-oral transmission of intestinal parasites through unwashed hands [27] as well as eating of unwashed/uncooked vegetables and fruits [30] which could be due to the contamination of vegetables with faecal materials from the farm [27] as growing of vegetables in the faecally polluted garden was found to be conducive for transmission of geohelminths and intestinal protozoa [31].

There is, therefore, the need to create awareness of the mode of spread and prevention of the disease through public health education measures. However, more research needs to be done to confirm this.

This research also assesses the possible association between occupation and intestinal parasite infection. It was noted that skilled employees amongst the respondents were more likely to have intestinal parasite infections compared to those who were unskilled. This investigation is contrary to the work of earlier studies [30] which reported higher infection rates in farmers (unskilled workers) compared to others (skilled workers). The discrepancies between our findings are difficult to explain but they could be attributed to differences in methodology, and host risk factors and our study examined intestinal parasites as a whole unlike the earlier study [30] which examined patients with HIV and intestinal helminths only.

This research also assesses the source of drinking water of the respondents. The research reveals that there is a significantly positive association between drinking water from the stream and intestinal parasite infection. This investigation agrees with earlier findings [30] regarding whether the source of drinking water is treated or not and intestinal parasite infection. This calls for intervention by stakeholders to provide safe and portable drinking water for the inhabitants of the study areas.

The study also examined the socio-economic status (SES) of the respondents. This research used respondents who did not stay in residential flat accommodations and used drinking water from the stream as a proxy to gauge (measure) the socio-economic status of the respondents. The study reveals that the type of residential accommodation is positively associated with intestinal parasite infection as well as farming activities. It was observed that there is a positive significant association between these two variables and intestinal parasitic infection. Lower socio-economic status is a risk factor for intestinal parasite infection. The effect of socio-economic status on the risk of infectious diseases in general, and parasitic infections in particular, is complex and could be attributed to several other factors such as lack of access to clean water, poor hygienic environment, lack of access to education due to financial constraints and overcrowded conditions [26]. This calls for a multifaceted approach in tackling the menace, such as public health education and political commitment towards resolving some of these challenges. This work agrees with the findings in another study [14] which observed a high prevalence of intestinal parasitosis among children using water sources other than pipe-borne water alone. Accordingly, the significant difference in the prevalence of *E. histolytica*, an intestinal parasite, in children that sourced water from wells, taps, and streams could be due to the extent to which these water sources are associated with defaecation habits, sewage disposal habits, and the level of sanitation at home and in the community at large. It was observed [16] that significant infection rates of 26.9% and 25% of *E. histolytica* for users of surface water and unprotected well water respectively, while low infection rates of 11.4% and 15% were recorded for tap water and protected borehole water, respectively. similarly, to further buttress this fact, [32] a statistically significant relationship between gastro-intestinal infection and source of drinking water and domestic treatment of drinking water, among the under-fives in Jos. However, the result of this study is contrary to other studies [17,33], which observed that the prevalence of *E. histolytica* was not associated with the type of water supply but was seemingly influenced by the storage of household supplies. Intestinal parasite control programmes should be well implemented and properly coordinated based on field reports so that the limited resources would be deployed appropriately, although only a few of these control programmes are available [4].

The study reveals that lack of latrine (open field defecation) and washing of the anal area by hand after visiting the toilet had a significant association with intestinal parasite infection among the study subjects. The finding of this study agrees with the work of earlier researchers [26] which noted that a poor hygienic environment was positively associated with intestinal parasite infection in an urban slum of Karachi. This practice of open field defecation has the potential to promote high transmission rates of various intestinal parasites, leading to the high prevalence of the disease, as reported by some authors in some African countries and Lafia, Nasarawa State, Nigeria [34]. The high prevalence among the study subjects may be due to poverty or low socio-economic conditions, poor personal and environmental hygiene, overcrowding, limited access to clean water, the tropical climate, altitude, and lack of knowledge about parasite transmission. The study also reveals that inadequate hand washing after defecation was a major problem among the study population. Most of the study subjects perceived washing hands with soap as an extra cost that reduced profit margin (for some occupations), even though most respondents exhibited good personal hygiene practices [34]. Wider social determinants like portable drinking water, availability of sewage disposal facilities, food, and personal hygiene underpin the prevalence of intestinal parasites [30]. This underscores the urgent need for interventions in this regard to reduce this social inequality in low-and middle-income countries.

CONCLUSION

The study reported a high level of infestation (about one-fourth of the study population is infected with a parasite) and identified risk factors that are part of the community's way of life. The wide variation of climatic conditions across Plateau States has an impact on parasite infectivity.

Conflict of Interest

There are no financial, personal, or professional conflicts of interest to declare.

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دراسة وبائية للطفيليات المعدية المعوية في مناطق مختارة من ولاية الهضبة، نيجيريا

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المستخلص

الخلفية والأهداف. لقد واجهت المجتمعات البشرية دائمًا تحديًا بسبب الأمراض المعدية، والتي يسبب بعضها الديدان الطفيلية والطفيليات الأولية. ربع الأمراض المعدية البشرية المعروفة سببها الديدان الطفيلية / مجموعات الأوليات. تشكل الالتهابات الطفيلية المعوية مصدر إزعاج للصحة العامة في البلدان النامية، مع ارتفاع معدلات انتشارها التي لا تزال تعصف بالبشرية مع تدهور الوضع الاجتماعي والاقتصادي للسكان المتضررين. يعد التحقيق في حدوث هذه العدوى أمرًا بالغ الأهمية لأنه يساعد على رسم استراتيجيات الوقاية والسيطرة على العدوى. **طُرق الدراسة**. هذه الدراسة عبارة عن دراسة مقطعية وتحليلية وكمية أجريت في أجزاء من ولاية بلاتو بنيجيريا لدراسة وبائيات الطفيليات المعوية. تم جمع 1257 عينة براز من البشر وفحصها بتقنيات ترسيب الفورمول إيثر، وتم توزيع 1257 استبيان. **النتائج**. كان معدل انتشار الطفيليات المعوية التي تم تحديدها في الدراسة هو(6٪) E. histolytica 76 ، A. lumbricoides 74 (5.9٪)، E. vemcularis 1 (0.1٪) الدودة الشصية 3.341 ٪)، (E. coli 6 (0.5) %)، T. hominis 7 (0.6%)، H. nana 1 (0.1%)، S. mansoni 10 (0.8%)، G. lamblia 98 (7.8%)، T. trichiura 2 (0.2%)، T. سوليوم 1 (0.1%)، وتشمل العوامل الاجتماعية والديموغرافية الفئة العمرية، ومستوى التعليم، والحالة الوظيفية، والمهنة غير الماهرة، ومياه الشرب، وهي عوامل خطر محتملة. علاوة على ذلك، أظهرت

النتائج التي توصـــلت إليها الدراســـة أن العدوى الطفيلية المعوية البشـــرية ترتبط بانخفاض الوضـــع الاجتماعي والاقتصـادي وسوء ظروف الصـرف الصـحي، مما يمثل آفة، خاصـة بالنسبة لأفقر السكان. **الخاتمة**. هذه الأمراض التي تسـببها الأوليات والطفيليات الطفيلية هي إصــابات قد تؤدي إلى تغيرات في الحالة الجسـدية والنفسـية الجسـدية والاجتماعية للمرضى، مما يؤثر بشكل مباشر على نوعية حياتهم.

الكلمات الدالة. الطفيليات المعوية، علم الأوبئة، الانتشار، الأمراض، نيجيريا.