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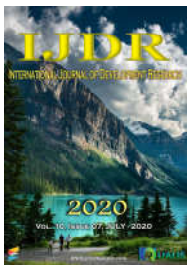

RESEARCH ARTICLE OPEN ACCESS

PREVALENCE OF INTESTINAL PARASITOSES: IN CHILDREN AGED 1 TO 5 YEARS IN A PUBLIC LABORATORY IN A CITY IN SOUTHWESTERN BAHIA

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ABSTRACT

***Objective*:** To determine the prevalence of intestinal parasite infections in children aged 1 to 5 years in a public laboratory in Southwest Bahia. ***Methods*:** A descriptive and cross-sectional research was carried out in the city of Vitória da Conquista, located in the State of Bahia, from January to June 2019. Data from the results of laboratory tests of children aged 1 to 5 years were collected. Descriptive analyzes with frequency distribution and central tendency measurements were performed using the Excel 2010 program. ***Result*:** From the analyzed data it can be concluded that the most frequent types of parasites were, among the protozoa, *Endolimax nana*, *Giardia Lamblia*, *Entamoeba Coli*; in the helminth group, *Strongyloides Stercoralis*. Among the 377 samples, 13% of the population had positive results, which claims a good prognosis for the child population of Vitória da Conquista. ***Conclusion*:** It is known that intestinal parasites are related to educational access, basic sanitation and family income. Thus, the research is of relevant interest as an epidemiological indicator of enteroparasitic diseases in children for the municipality.

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INTRODUCTION

According to the World Health Organization, parasitic diseases are the most common in the world, affect about 50% of the world's population and are responsible for several consequences on the health of individuals (Cardoso, 2019). Enteroparasitosis is a serious health problem, especially in developing countries such as Brazil. These intestinal parasites are associated with low income population indicators, educational access, poor sanitation and contaminated food. Factors related to climate, temperature and humidity are also related to the increased number of cases in endemic regions (Araujo, Silva, Nogueira, 2019; Sucasas 2018). Parasitic diseases are described as resulting from an epidemiological triad between: agent, host and environment. The agent is the essential factor for the occurrence of the disease; the host is the organism infected by the agent, and the environment is the set of factors that make the infection viable. From this imbalance should be investigated the intensity of the disease, which is linked with some aspects such as parasitic load, age, immune system and nutritional status. (Silva, 2015) infections can be caused by helminths and protozoa which colonize the intestine of vertebrates and may offer several implications for humans may be asymptomatic or may cause certain disorders such as diarrhea, fever, abdominal pain , bleeding, intestinal obstruction, rectal prolapse, among others. Besides the disturbances caused by parasitism, some of the main consequences are colitis, intestinal malabsorption, anemia and malnutrition (Araújo, 2018; Santos *et al.,* 2017; Müller, 2016; Sucasas, 2018). Preventive education for the treatment of infections is fundamental to intervene and raise awareness in order to avoid consequences on children's health, physical development and school performance (Wiebbelling, 2019). Given the above, this research aimed to provide information on the frequency of intestinal parasites in children from 1 to 5 years old who underwent fecal parasitological tests at the Central Laboratory of Vitória da Conquista.

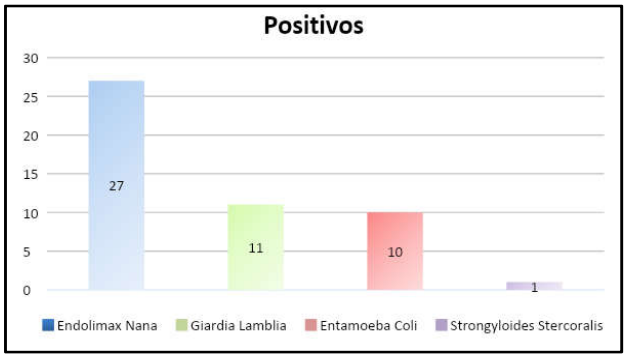
MATERIALS AND METHODS

This study is descriptive and cross-sectional, conducted from July to November 2019. It was conducted at the Central

Laboratory of Vitória da Conquista, Bahia. Approved by the Research Ethics Committee of the Vitória da Conquista Public Health Foundation, Opinion No. 3,598,684 (CEP / FSVC). The city of Vitoria da Conquista of the State of Bahia extends over 3 405.6 km² and has about 306,866 thousand people according to the last census. The demographic density is 90.1 inhabitants per km² in the municipality's territory (CIDADE BRASIL, 2019). The fecal materials are collected by those responsible and taken to the laboratory in which spontaneous sedimentation technique is performed and consequently release of the technical report. Data collection was performed from system data, including all patients from 1 to 5 years old who were treated at the Central Laboratory. During the period investigated, a total of 377 pediatric patient exams were performed. To describe the data collected, variables related to place of residence (rural or urban area), age of the patient, date of collection of the exam, test result (positive or negative) and type of intestinal parasite found in the report were used. For data analysis, descriptive analyzes were performed through frequency distribution, measures of central tendency (mean ± standard deviation or median) and dispersion of the different study variables. For data analysis, the Excel 2010 spreadsheet editor was used.

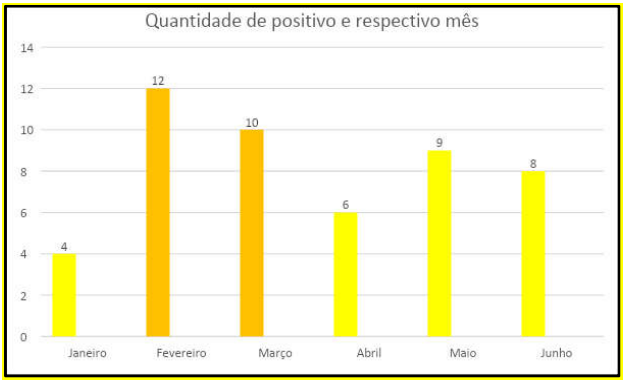
RESULTS AND DISCUSSION

Among the 377 parasitological exams evaluated, 49 samples tested positive, 13% of this population, 25 (51.0%) female and 24 (49.0%) male.Intestinal parasites are present all over the world, but are prominent in developing countries, especially in places with no basic sanitation, sewage system, treated water distribution network, health education and access to information (Araujo, Silva, Nogueira, 2018). Considered one of the main public health problems, in which it is endemic in Brazil, parasitic diseases are directly related to poor socioeconomic conditions, contaminated water consumption, nutritional status, personal hygiene and climate variability. Unfortunately, it is not a notifiable disease, which makes the epidemiological investigation of the disease difficult (Sousa, Costa, Vieira , 2018). The main types of intestinal parasites are classified into two divisions, namely, protozoa and helminths, among the most prevalent protozoa: *Giardia lambia, Entamoeba histolytica and Entamoeba coli*; Among the helminths: *Ascaris lumbricoides, Trichuris trichiura, Vermicular Enterobius*, *American Necator, Ancylostoma duodenale and Strongyloidesstercoralis.* (Araujo, Silva, Nogueira, 2019). Figure 1 represents the parasite species found, among the protozoa, it is possible to verify *Endolimax nana* 55.0% (n = 27) the most frequent of this group, *Giardia Lamblia* 22.4% (n = 11), *Entamoeba Coli* 20.4% (n = 10). In the helminth group, was observed *Strongyloides Stercoralis* 2.0% (n = 1). Brazil is a developing country with tropical and subtropical climate, which offers good conditions for parasite survival in view of the higher temperatures and wet weather, which also favors the spread of these parasites (Sousa, Costa, Vieira, 2018). Among the intestinal parasites investigated, *Entamoeba coli and Endolimax nana* are frequently found in coproparasitological examinations of adults and children. However, despite the high prevalence in the group investigated by this article, this finding is not related to major health problems considering that these parasites are commensal and usually have no pathogenic action (Manfroi, Stein, Castro Filho 2009). Figure 2 shows an increase of positive results in February and March. With this result, it can be concluded that in summer the incidence of parasitic diseases is higher, in contrast to winter. in which the incidence declines. According tocharts*Weather Spark* (Figure 3), *it* is possible to confirm an increase in the maximum temperature of the city in question in the highest incidence months, February and March 2019,



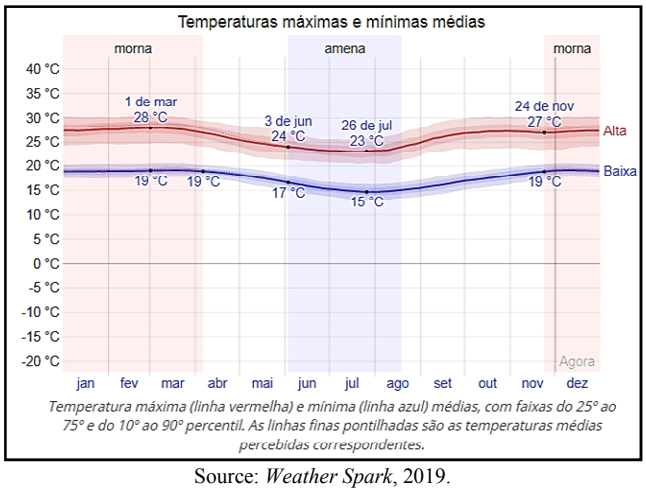
Source: Prepared by the author, 2019.

Figure 1. Classification of the types of parasites found.



Source: Prepared by the author, 2019.

Figure 2. Quantitative classification of exams and months of highest prevalence



Source: *Weather Spark*, 2019.

Figure 3. Range of maximum and minimum temperatures in 2019 in the city of Vitória da Conquista, Bahia

which range from 28 ° (maximum) to 19 ° (minimum), being characterized as a climate environment. hot and humid, which can facilitate the spread of parasites. Intestinal parasitoses occur in less developed regions, in places with humid and hot climate, and where hygiene conditions are poor. In addition, the lack of access to basic sanitation, especially regarding sanitary sewage, driving the increase in cases of infection and reinfection among children (Manfroi, Stein, Castro Filho 2009).

Conclusion

The objective of this study was to determine the incidence of intestinal parasite infections in children aged 1 to 5 years in a public laboratory in Southwest Bahia from July to November 2019, allowing to identify the level of involvement. of this population. From the analyzed data it was possible to conclude about the most frequent types of parasites, among protozoa, *Endolimax nana, Giardia Lamblia, Entamoeba Coli;* in the helminth group, *StrongyloidesStercoralis*. About 13% of the studied population had positive results, which claims a good prognosis for the child population of Vitória da Conquista. The State Government has recently invested in several health programs that address preventive measures for the population and the awareness of the children. disease risks, the degree of infection and the complications that may arise. It is believed that the research data was relatively important as an epidemiological indicator of childhood enteroparasitoses for the municipality and for health monitoring.

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