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BORDERS AND HEALTH: THE RELATIONSHIP BETWEEN INTESTINAL PARASITES, SOCIAL CONDITIONS AND MITIGATION STRATEGIES

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ABSTRACT
Intestinal parasitic infections are favored by inadequate basic sanitation practices, consumption of contaminated water, poor personal hygiene, and cultural habits, such as direct contact with the soil without protection. In addition, socioeconomic factors, such as poverty and difficult access to health services, contribute to the spread of these diseases in border regions. This paper analyzes the prevalence and impacts of enteroparasites such as *Ascaris lumbricoides*, *Giardia lamblia,* and *Entamoeba histolytica*, highlighting their forms of transmission and health consequences related to malnutrition, delayed child development, and socioeconomic losses. Population mobility, poor basic sanitation and cultural practices are identified as factors that aggravate the vulnerability of these communities. It also differentiates between zoonotic parasites, such as *Toxocara* spp. and *Fasciola hepatica*, and those exclusively human, emphasizing the need for specific control strategies. It is concluded that investments in sanitation, health education and access to health services are essential to reduce the burden of intestinal parasitosis and improve the quality of life of border populations.

Keywords: Intestinal parasites. Frontier populations. Public health. Malnutrition. Zoonoses.

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INTRODUCTION

Intestinal parasitic diseases represent one of the greatest challenges to global public health, especially in vulnerable populations. Intestinal parasites are organisms that lodge in the human gastrointestinal tract, causing a range of health problems, from mild symptoms such as diarrhea and abdominal discomfort to more serious complications such as malnutrition, anemia, and, in extreme cases, intestinal obstructions. These problems mainly affect children, the elderly, and populations with limited access to adequate basic sanitation and health services.

The relevance of the study of these parasites is highlighted by their wide distribution in areas of greater socioeconomic vulnerability, including border regions, where logistical and cultural challenges amplify the risks of infection and hinder control strategies.

Populations living in border areas face conditions that make them particularly susceptible to parasitic infections. Such regions often have characteristics that favor the spread of parasites, such as intense migratory flows, cultural diversity, low coverage of basic sanitation, and precarious health care. Borders, as places where different countries and cultures meet, also present disparities in health regulations, which can contribute to the proliferation of neglected diseases, such as intestinal parasitosis. Population mobility increases the risk of transmission between communities, making it difficult to control these infections (FERREIRA, 2021).

Another important factor is the relationship between intestinal parasites and social determinants of health. Poverty, lack of access to clean water, consumption of contaminated food, and the absence of adequate hygiene practices are critical determinants that intensify the prevalence of these infections. In border regions, the combination of social and economic vulnerability and the limitations of local health systems creates an environment conducive to outbreaks. This reinforces the need for effective public policies that consider the specificity of these populations and promote interventions based on health education, early diagnosis, and accessible treatments.

In view of this scenario, the present research aims to analyze the prevalence and impacts of intestinal parasites in border populations, highlighting the risk factors and vulnerability of these groups. Specifically, it seeks to identify the main species of parasites found in these regions, understand the socioeconomic conditions that favor their dissemination, and propose control and prevention strategies adapted to the particularities of the border areas.

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DEVELOPMENT

EPIDEMIOLOGY OF INTESTINAL PARASITES IN BORDER REGIONS

The epidemiology of intestinal parasites in border regions is an important field of study to understand the factors that favor the spread of these infections and the implications for public health. Border regions, due to their geographical, social and economic characteristics, have particular conditions that can facilitate the proliferation of intestinal parasites. The prevalence of these infections is usually associated with factors such as poor basic sanitation, high population mobility, poverty, cultural practices, and limited access to health services. These characteristics make border populations especially vulnerable to parasitosis, highlighting the need for specific interventions in these areas (CAETANO, 2024).

Epidemiological studies show that border populations have a high prevalence of intestinal parasites compared to other regions. Factors such as proximity to rivers, lack of adequate infrastructure for water and sewage treatment, and reliance on rudimentary agricultural practices contribute to a favorable environment for parasite transmission. Species such as *Ascaris lumbricoides*, *Giardia lamblia,* and *Entamoeba histolytica* are among the most commonly found in studies conducted in these areas. The contamination of water and food, associated with the absence of health education policies, increases the risk of infection, especially in children, who constitute the most affected group (CAETANO, 2024).

When comparing urban and rural areas in border regions, a significant difference in the epidemiology of intestinal parasitosis is observed. In rural areas, the prevalence tends to be higher due to the lack of access to basic sanitation services and drinking water. The practice of subsistence agriculture and proximity to domestic animals also increase exposure to zoonotic parasites. On the other hand, in urban areas, although there is better infrastructure, factors such as high population density and lack of adequate urban planning can lead to the spread of parasites, especially in communities living in conditions of vulnerability, such as favelas or informal settlements. Access to health services in urban border areas is not always sufficient to meet the demands of the migrant and local population (RODRIGUES, 2022).

The comparison between border populations and non-border regions further reinforces the disparities in the prevalence of intestinal parasites. In general, border regions have higher rates of infection due to the constant mobility of the population and the

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lack of uniformity in public health policies among neighboring countries. For example, migrant or refugee populations crossing borders often face barriers to accessing medical care, which results in late diagnoses and the continued spread of parasites. Socioeconomic conditions at the borders are often more unfavorable, with higher poverty and inequality rates compared to more central regions. These factors create a cycle of vulnerability in which intestinal parasite infections are both a cause and a consequence of poor living conditions (ZILLY; SILVA, 2022).

An important aspect to consider is the gap in epidemiological data in some border regions, especially those encompassing developing countries. The lack of infrastructure for monitoring and data collection makes it difficult to obtain accurate information on the prevalence and transmission patterns of the parasites. This limits the effectiveness of public health interventions, as there is often no clear understanding of the specific needs of these populations. Therefore, it is essential that epidemiological studies are conducted regularly to map the main risk factors and monitor the effectiveness of the interventions implemented (ZILLY; SILVA, 2022).

The analysis of the epidemiology of intestinal parasites in frontier populations highlights the need for integrated public health strategies that consider the specificities of these regions. Prevention and control policies should include health education campaigns, improvement of basic sanitation, and expansion of access to health services. Collaboration between countries that share borders is key to ensuring that control measures are effective and uniform, preventing the transmission of parasites from one side of the border to the other. These efforts can significantly reduce the prevalence of intestinal parasitosis and improve the quality of life of frontier populations (DOS SANTOS; BRAGA, 2021).

Chart 1 - Epidemiology of Intestinal Parasites in Border Regions.

Aspect	Description
Prevalence in border regions	High infection rates due to factors such as poor sanitation, population mobility, and limited access to health services.
Main parasites	Ascaris lumbricoides, Giardia lamblia, Entamoeba histolytica are the most frequent in frontier populations.
Rural areas	High prevalence due to lack of sanitation, use of contaminated water and proximity to animals.
Urban areas	Problems associated with population density, lack of urban planning and precarious conditions in informal settlements.
Comparison with non-border regions	Borders have higher rates of infection due to population mobility and socioeconomic inequalities.
Epidemiological challenges	Lack of consistent data in border areas and barriers to access to health services for migrant populations.
Proposed solutions	Health education campaigns, improvements in basic sanitation, expansion of access to health and collaboration between bordering countries.

Source: DOS SANTOS; BRAGA (2021)

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SOCIOECONOMIC AND CULTURAL FACTORS ASSOCIATED WITH PARASITIC INFECTIONS

Socioeconomic and cultural factors play an essential role in the spread of intestinal parasitic infections, especially in vulnerable populations. These infections are often associated with poor sanitation conditions, high population mobility, and cultural practices that favor exposure to parasites. These factors do not act in isolation, but are interrelated, creating a cycle of vulnerability that affects low-income communities and geographically isolated areas, such as border regions. Poor basic sanitation is one of the main determinants in the spread of intestinal parasites. The lack of access to adequate water and sewage treatment systems allows parasites to be widely disseminated in the environment, contaminating water and food sources (RODRIGUES, 2022).

In many poor communities, the absence of infrastructure for the collection and treatment of human waste creates conditions conducive to the transmission of parasites such as *Ascaris lumbricoides* and *Trichuris trichiura*, whose eggs can remain viable in the soil for long periods. Direct contact with contaminated soil, especially in children who play in areas without adequate sanitation, is one of the most common forms of transmission. The use of contaminated water for drinking, cooking, and washing food contributes significantly to the spread of protozoan parasites such as *Giardia lamblia* and *Entamoeba histolytica*. This reality is aggravated in rural areas and border communities, where sanitary conditions are often neglected by public policies (LARSEN, 2024).

Migration and population mobility also influence the spread of intestinal parasites. In border contexts, where migratory flows are intense, populations on the move face additional challenges, such as lack of access to health services, absence of adequate medical screening, and temporary living conditions that exacerbate the risks of infection. Refugees and migrants, often living in makeshift camps or overcrowded areas, share limited resources such as water and sanitation facilities, which facilitates the transmission of parasites. These populations can carry parasites from their areas of origin to their target sites, introducing new cycles of infection. This phenomenon is particularly relevant in regions where public health systems are not prepared to deal with outbreaks, resulting in a higher prevalence of parasitic infections (PORTELA; CORREIA, 2021).

Another relevant aspect is the role of cultural and dietary practices in the spread of intestinal parasites. In some cultures, practices such as consuming raw or undercooked foods, such as meats and vegetables, may increase the risk of infection with parasites,

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including *Taenia solium* and *Fasciola hepatica*. The use of human or animal manure as fertilizer without proper treatment, common in traditional agricultural practices, can contaminate food grown. The habit of walking barefoot, present in many rural communities, also exposes people to the risk of infection by parasites such as *Ancylostoma duodenale* and *Necator americanus*, whose larvae penetrate directly through the skin (PORTELA; CORREIA, 2021).

While these practices are often rooted in traditions and economic needs, they pose significant challenges to parasitic infection control. The interaction between these socioeconomic and cultural factors is aggravated by the lack of education and awareness about hygiene and health. In many communities, limited knowledge about basic hygiene practices, such as washing hands regularly, preparing food in a safe manner, and avoiding the consumption of untreated water, perpetuates the spread of parasites. The absence of health education programs adapted to local realities prevents populations from developing effective strategies to prevent infections. The stigma associated with precarious living conditions can hinder the implementation of public policies, as the needs of these populations are often ignored by the competent authorities (TEIXEIRA, 2020).

Given this scenario, it is evident that the control of intestinal parasitic infections requires an integrated approach, which takes into account not only biological factors, but also socioeconomic and cultural determinants. Improving access to basic sanitation, promoting health policies aimed at migrant populations, and investing in culturally appropriate health education programs are fundamental steps to reduce the prevalence of intestinal parasites (MALDOTTI; DALZOCHIO, 2021).

Chart 2 - Socioeconomic and Cultural Factors Associated with Parasitic Infections.

Aspect	Description
Precarious basic sanitation	Lack of water and sewage treatment facilitates the spread of parasites (Ascaris lumbricoides, Giardia lamblia, Entamoeba histolytica).
Environmental contamination	Use of contaminated water and contact with contaminated soil are common sources of transmission, especially in children and rural areas.
Migration and population mobility	Migratory flows increase the risks due to poor living conditions, overcrowding and lack of adequate medical screening.
Introduction of new parasites	Migrants can bring parasites from their areas of origin, increasing the diversity of infections in the places of destination.
Cultural and food practices	Consumption of raw or undercooked food, use of manure as fertilizer and the habit of walking barefoot favor infections by various parasites.
Lack of health education	Limited knowledge about personal hygiene and safe practices perpetuates the transmission of parasites in vulnerable communities.

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Proposed solutions	Improve basic sanitation, create health education programs adapted to local cultures, and health policies aimed at migrant populations.

Source: MALDOTTI; DALZOCHIO (2021)

MAIN SPECIES OF INTESTINAL PARASITES IN FRONTIER POPULATIONS

The border regions have socioeconomic, environmental and sanitary characteristics that favor the prevalence of several species of intestinal parasites. Among the most common parasites found in these populations, *Ascaris lumbricoides*, *Giardia lamblia* and *Entamoeba histolytica* stand out. These organisms pose a significant threat to public health due to their high transmissibility and the impacts they cause, especially in vulnerable populations (ALMEIDA; LEITE, 2020).

The life cycles and forms of transmission of these parasites reinforce the importance of understanding their biological and epidemiological characteristics in order to implement effective control strategies. On the other hand, it is essential to differentiate parasites of zoonotic origin from those exclusively human, since the transmission dynamics vary considerably between these groups (MILITÃO; FILE; DE PAIVA, 2022).

Ascaris lumbricoides, one of the most prevalent intestinal parasites in the world, is a species of helminth that infects millions of people, especially in regions with inadequate basic sanitation. Their life cycle is simple but efficient: the eggs are eliminated by human feces and contaminate the soil, where they can remain viable for months or even years. Transmission occurs mainly by ingesting food or water contaminated with infective eggs. After ingestion, the eggs hatch in the small intestine, and the larvae migrate to the lungs before returning to the gastrointestinal tract, where they reach maturity. *Ascaris lumbricoides infections* are associated with symptoms such as abdominal pain, intestinal obstructions, and malnutrition, especially in children (DOS SANTOS; BRAGA, 2021).

Giardia lamblia, in turn, is a flagellated protozoan that causes giardiasis, one of the most common intestinal parasitosis in vulnerable populations. Its life cycle involves two main forms: cysts and trophozoites. The cysts, which are highly resistant in the environment, are ingested through contaminated water or food. In the small intestine, cysts release trophozoites, which adhere to the intestinal mucosa, causing inflammation and interfering with nutrient absorption. Giardiasis is characterized by symptoms such as chronic diarrhea, abdominal pain, flatulence, and weight loss. In border regions, where access to drinking water is limited, giardiasis is widespread, particularly affecting children and immunosuppressed individuals (DA CUNHA; JUNIOR, 2021).

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Another prominent parasite is *Entamoeba histolytica*, a protozoan responsible for amoebiasis. This infection occurs mainly by ingesting cysts present in contaminated water or food. In the intestine, cysts release trophozoites, which can invade the intestinal mucosa and cause ulcerations. In severe cases, trophozoites can spread to other organs, such as the liver, causing abscesses. Amebiasis is often asymptomatic, but it can manifest with symptoms such as bloody diarrhea, abdominal pain, and fever. In border areas, where sanitary conditions are often inadequate, *Entamoeba histolytica* poses a significant threat to public health. In addition to these species, other intestinal parasites, such as *Ancylostoma duodenale* and *Necator americanus* (responsible for hookworm) and *Strongyloides stercoralis* (which causes strongyloidiasis), are also found in border regions (TEIXEIRA, 2020).

These helminths have life cycles that include a larval stage in the soil, with transmission occurring mainly through direct skin contact with contaminated soil. The infection can cause symptoms such as anemia, abdominal pain and, in the case of *Strongyloides stercoralis*, hyperinfection in immunocompromised individuals (ALMEIDA; LEITE, 2020).

An important aspect to consider is the difference between zoonotic parasites and those of exclusively human origin. Zoonotic parasites, such as *Toxocara spp.* and *Fasciola hepatica*, have life cycles that involve animal hosts. Transmission to humans occurs incidentally, usually through contact with feces from infected animals or consumption of contaminated food. On the other hand, exclusively human parasites, such as *Ascaris lumbricoides* and *Entamoeba histolytica*, depend directly on humans to complete their life cycles. This distinction is fundamental for infection control, as zoonotic parasites require additional strategies, such as the management of host animals and awareness of safe agricultural practices (PORTELA; CORREIA, 2021).

Therefore, frontier populations face a high burden of intestinal parasites due to poor sanitary conditions and exposure to environmental and cultural risk factors. Species such as *Ascaris lumbricoides*, *Giardia lamblia* and *Entamoeba histolytica* stand out for their high prevalence and impact on public health. Understanding their life cycles, forms of transmission, and differences between zoonotic and exclusively human parasites is essential for the development of effective control strategies, which must be adapted to local realities. Investments in basic sanitation, health education and access to health care are essential to reduce the burden of these infections in border regions (GONÇALVES

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COSTA; DA SILVA LEMES; GAMA MELO, 2022).

Table 3 - Main Species of Intestinal Parasites in Border Populations.

Parasite	Kind	Life Cycle	Forms of Transmission	Health Impacts	Origin
Ascaris lumbricoides	Helminth	Eggs eliminated in the feces contaminate the soil; Ingested eggs, larvae migrate from the lungs to the intestine.	Ingestion of food or water contaminated with eggs.	Abdominal pain, intestinal obstructions, malnutrition.	Uniquely human
Giardia lamblia	Protozoan	Resistant cysts ingested in the intestine turn into trophozoites that adhere to the intestinal mucosa.	Consumption of water or food contaminated with cysts.	Chronic diarrhea, abdominal pain, flatulence, weight loss.	Uniquely human
Entamoeba histolytica	Protozoan	Cysts ingested in the intestine release trophozoites that can invade tissues or other organs.	Consumption of contaminated water or food.	Bloody diarrhea, abdominal pain, liver abscesses.	Uniquely human
Ancylostoma duodenale	Helminth	Larvae in the soil penetrate the skin; they migrate to the lungs and then to the intestine, where they reach maturity.	Direct skin contact with contaminated soil.	Anemia, abdominal pain, weakness.	Uniquely human
Strongyloides stercoralis	Helminth	Maggots penetrate the skin; complete cycle in the human body, and can cause hyperinfection in immunocompromised people.	Direct skin contact with contaminated soil.	Anemia, abdominal pain, hyperinfection (in severe cases).	Uniquely human
Toxocara spp.	Zoonotic	Eggs shed by infected animals; humans become infected incidentally.	Ingestion of food or soil contaminated with animal feces.	Organ lesions, allergic manifestations, visceral toxocariasis.	Zoonotics
Fasciola hepatica	Zoonotic	It involves intermediate hosts (mollusks); humans become infected by consuming contaminated vegetables.	Consumption of contaminated raw foods, such as watercress.	Liver injury, jaundice, abdominal pain.	Zoonotics

Source: GONÇALVES COSTA; DA SILVA LEMES; MELO RANGE (2022)

IMPACTS ON HEALTH AND QUALITY OF LIFE

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Intestinal parasitic infections have profound impacts on health and quality of life, especially in vulnerable populations. These impacts go beyond physical symptoms, also influencing child development, economic productivity, and the social well-being of entire communities. In border regions, where basic sanitation, access to health and food security are often precarious, the effects of these parasitic diseases are amplified, creating a cycle of poverty and disease that affects generations (MILITÃO, LIMA; DE PAIVA, 2022).

The relationship between parasitic infections and malnutrition is one of the most critical aspects. Intestinal parasites, such as *Ascaris lumbricoides* and *Giardia lamblia*, compete directly with the host for available nutrients by interfering with the absorption of essential vitamins and minerals. This leads to malnutrition, even in individuals who consume adequate amounts of food. Many parasites cause damage to the intestinal mucosa, reducing the body's ability to absorb nutrients. This interaction is particularly harmful in children, who have higher nutritional demands due to growth and development. Malnutrition caused by intestinal parasites contributes to a range of health problems, including general weakness, stunted growth, and increased susceptibility to other infectious diseases (RODRIGUES, 2022).

The effects of intestinal parasitosis on child development are alarming. Infected children often have delays in physical growth and cognitive development. Studies show that parasite infections, especially at early ages, are associated with learning disabilities, lower school performance, and impairment in motor development. This is due to the combination of malnutrition, chronic inflammation, and anemia, which are common consequences of these infections. In border regions, where educational resources are already limited, these effects further aggravate social disparities, creating significant barriers to children's future development (CAETANO, 2024).

In addition to the direct health impacts, they also have significant economic and social consequences. Infected individuals often experience fatigue and reduced work capacity, which decreases their productivity and, consequently, family income. In communities where subsistence farming is the main economic activity, such as in many border regions, the inability to work can compromise the food security of the entire family. The cost of medical treatment, often inaccessible in remote areas, places an additional financial burden on these populations (ALMEIDA; LEITE, 2020).

These factors contribute to perpetuating the cycle of poverty, where the conditions that favor parasitic infections remain unchanged. From a social point of view, parasitic

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infections also affect community cohesion and well-being. Children who miss school due to health problems related to parasitosis have fewer opportunities for socialization and learning, impairing their social development. The stigma associated with parasitic diseases can lead to social isolation, especially in cases of visible symptoms, such as bloating in malnourished children. This stigma makes it difficult to seek treatment, further aggravating the situation (SILVA, 2022).

In border regions, the challenges are amplified by the lack of infrastructure and effective public policies. Population mobility and poor sanitary conditions make these areas especially susceptible to outbreaks of intestinal parasitosis. Strategies to mitigate the impacts of these infections should include multifaceted interventions, such as improved sanitation, mass deworming campaigns, and health education programs. In addition, it is essential that governments invest in robust health systems capable of meeting the specific needs of these populations (ZILLY; SILVA, 2022).

It is important to recognize that intestinal parasitosis does not only affect individual health, but also the collective health and socioeconomic development of communities. In frontier populations, where inequalities are accentuated, the impact of these infections is even more devastating. Therefore, combating intestinal parasitosis is not only a public health issue, but also a priority to promote human development and reduce social inequalities (DA CUNHA; JUNIOR, 2021).

Table 4 - Impacts on Health and Quality of Life

Aspect	Description
Relationship between parasites and malnutrition	Parasites compete for nutrients and impair absorption in the gut, leading to malnutrition, especially in children.
Impacts on child development	Delays in physical and cognitive growth, learning difficulties, lower school performance and impairment in motor development.
Economic consequences	Reduced work capacity, lower productivity, impact on family income and high costs with medical treatment.
Social effects	Impairment in the socialization of children due to absence from school, stigmatization of visible symptoms and social isolation.
Cycle of poverty	Parasitic infections perpetuate conditions of vulnerability, making it difficult to improve the sanitary and economic conditions of communities.
Challenges in border regions	Lack of infrastructure, population mobility, precarious sanitary conditions and difficulty in accessing health services increase the risks.
Proposed solutions	Improvements in basic sanitation, deworming programs, health education, and strengthening of health systems in vulnerable areas.

Source: SILVA (2022)

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CONCLUSION

Intestinal parasitic infections in frontier populations represent a significant public health challenge due to poor socioeconomic conditions, lack of basic sanitation, and high population mobility. These factors create an environment conducive to the spread of parasites such as *Ascaris lumbricoides*, *Giardia lamblia,* and *Entamoeba histolytica*, which directly impact the health, child development, and quality of life of affected communities. In addition to the damage to individual health, these infections have social and economic consequences that perpetuate the cycle of poverty in these regions.

The analysis showed that effective interventions require integrated approaches adapted to the specificities of these populations. Measures such as expanding basic sanitation, strengthening health systems, promoting deworming programs, and culturally sensitive health education are key to reducing the prevalence of intestinal parasites and their impacts. Collaboration between bordering countries and investment in ongoing epidemiological research are essential to develop more effective and sustainable control strategies.

In view of this, it is important that public policies prioritize border populations, recognizing their vulnerabilities and implementing actions that promote access to health, social inclusion, and the improvement of living conditions. Combating intestinal parasitosis is not only a public health issue, but also a necessary step to reduce inequalities, promote human development and ensure a more dignified future for these communities.

In addition to the practical contributions, this research also highlights points that can be explored in future studies. Investigations that delve deeper into the economic impact of parasitosis on border populations, as well as analyses on the effectiveness of public policies implemented in different border contexts, can provide essential data for the development of even more specific and effective strategies. Similarly, studies that integrate the communities' own perspectives on sanitary conditions and disease perceptions can enrich control approaches, making them more participatory and sustainable.

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REFERENCES

1. Almeida, A. A., & Leite, T. S. A. (2020). *Entamoeba histolytica* as a cause of amebiasis. *Health and Environment Journal, 10*(1), 133–139.

2. Caetano, B. R. F. (2024). *Prevalence of child parasitosis in schoolchildren in the municipality of Cajazeiras-PB: A study in the municipal public school network* (Master's dissertation, Catholic University of Santos). https://tede.unisantos.br/handle/tede/8015

3. Cunha, I. P. da, & Junior, O. M. R. (2021). Evaluation of the sensitivity of the direct-to-fresco and Hoffman methods for *Ascaris lumbricoides*. *Research, Society and Development, 10*(15), Article e496101523460. https://doi.org/10.33448/rsd-v10i15.23460

4. dos Santos, M. D., & Braga, D. V. V. (2021). Synanthropic animals x transmission of zoonoses according to the perception of residents of the Central Pernambuco Hinterland. In *Biology: Teaching, research and extension—An approach to scientific knowledge in the different spheres of knowledge* (Vol. 2, pp. 68–82). [Publisher not specified].

5. Ferreira, A. L. de C., & Others. (2021). Prevalence of intestinal parasites in public preschool children in the Triple Border Brazil, Argentina and Paraguay. *ABCS Health Sciences, 46*, Article e021205. https://doi.org/10.7322/abcshs.2020089.1817

6. Gonçalves Costa, L. C., da Silva Lemes, I., & Gama Melo, J. D. (2022). *Entamoeba histolytica* and its rapid dissemination: A case study in the Municipality of Redenção/PA. *Scire Salutis, 12*(3). [No page range provided].

7. Larsen, I. S., & Others. (2024). Food education as a strategy in the prevention of worms in childhood. *Annals of the 22nd Interinstitutional Cultural Scientific Meeting*. [No page range provided]. ISSN 1980-7406.

8. Maldotti, J., & Dalzochio, T. (2021). Intestinal parasites in children in Brazil: Systematic review. *Cereus Magazine, 13*(1). [No page range provided].

9. Militão, B. M., Lima, W. G., & Paiva, M. C. de. (2022). Prevalence of enteroparasitosis in the early years of elementary school: A study among children from a municipal school in Caetanópolis-MG (Brazil). *Brazilian Journal of Health and Pharmacy, 4*(3), 1–9.

10. Portela, E. H. R., & Correia, J. P. C. (2021). *Complicated biliary ascariasis: Clinical manifestations and surgical interventions* (Undergraduate thesis, Centro Universitário do Planalto Central Apparecido dos Santos). [No URL provided].

11. Rodrigues, A. P. F., & Others. (2022). Perception of some riverside dwellers from the islands of the municipality of Abaetetuba-PA about intestinal parasitosis. *Research, Society and Development, 11*(11), Article e295111133540. https://doi.org/10.33448/rsd-v11i11.33540

Revista ARACÊ
ISSN: 2358-2472

12. Silva, C. F. D. (2022). *Factors associated with helminthiasis in the municipalities of Ouro Preto and Mariana, Minas Gerais (MG): Descriptive analysis* (Undergraduate thesis, Federal University of Ouro Preto). [No URL provided].

13. Teixeira, P. A., & Others. (2020). Intestinal parasitosis and basic sanitation in Brazil: An integrative review study. *Brazilian Journal of Development, 6*(5), 22867–22890. https://doi.org/10.34117/bjdv6n5-075

14. Zilly, A., & Silva, R. M. (2022). *Public health in the Brazil-Paraguay-Argentina border region*. Pedro & João Editores. https://pedroejoaoeditores.com.br/produto/saude-publica-na-regiao-da-fronteira-brasil-paraguai-argentina/