

Health at school: Intestinal parasitosis in adolescents and biosafety measures

RESUMO | Objetivo: Avaliar o impacto de ações educativas como medida de prevenção das enteroparasitoses em adolescentes escolares. Método: Trata-se de um estudo retrospectivo de análise qualitativa e caráter descritivo, realizada com informações pregressas coletadas em uma escola da rede estadual no município de Camaragibe. A avaliação do conhecimento pré e pós da ação educativa, foi realizada através das Técnicas de análise de conteúdo e do Sujeito Coletivo. Resultados: Os resultados obtidos demonstram que a temática é de grande relevância. No transcurso da pesquisa houve uma mudança significativa no modo de pensar e agir dos educandos envolvidos, mudança de hábitos e interesse com relação a higienização pessoal, dos alimentos, transmissão, prevenção e biossegurança dentro da comunidade onde estão inseridos. Conclusão: Ações educativas como essas, são imprescindíveis na comunidade escolar e adjacentes. Contudo o uso de metodologias educativas para ações profiláticas, voltadas para esta temática não é efetiva nas políticas de saúde pública.

Descritores: Adolescentes; Doenças parasitárias; Educação em saúde.

ABSTRACT | Objective: To evaluate the impact of educational activities as a measure to prevent intestinal parasites in school adolescents. Method: This is a retrospective study of qualitative analysis and descriptive character, carried out with previous information collected in a state school in the municipality of Camaragibe. The evaluation of pre and post knowledge of the educational action was carried out through the techniques of content analysis and the Collective Subject. Results: The results obtained demonstrate that the theme is of great relevance. In the course of the research there was a significant change in the way of thinking and acting of the students involved, change of habits and interest in relation to personal hygiene, food, transmission, prevention and biosecurity within the community where they are inserted. Conclusion: Educational actions such as these are essential in the school community and adjacent. However, the use of educational methodologies for prophylactic actions focused on this theme is not effective in public health policies.

Keywords: Adolescents; Parasitic diseases; Health education

RESUMEN | Objetivo: Evaluar el impacto de las actividades educativas como medida de prevención de parásitos intestinales en adolescentes escolares. Método: Se trata de un estudio retrospectivo de análisis cualitativo y carácter descriptivo, realizado con información previa recolectada en una escuela pública del municipio de Camaragibe. La evaluación de los conocimientos previos y posteriores a la acción educativa se realizó a través de las técnicas de análisis de contenido y el Sujeto Colectivo. Resultados: Los resultados obtenidos demuestran que el tema es de gran relevancia. En el transcurso de la investigación hubo un cambio significativo en la forma de pensar y actuar de los estudiantes involucrados, cambio de hábitos e interés en relación con la higiene personal, alimentación, transmisión, prevención y bioseguridad dentro de la comunidad donde se insertan. Conclusión: Acciones educativas como estas son imprescindibles en la comunidad escolar y aledaña. Sin embargo, el uso de metodologías educativas para acciones profilácticas enfocadas en esa temática no es efectivo en las políticas públicas de salud.

Palabras claves: Adolescentes; enfermedades parasitarias; Educación para la salud

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INTRODUCTION

Public health policies instituted in Brazil ineffectively cover the needs and heterogeneities of youth, pointing out challenges in the construction of actions that can contemplate them in their multiple dimensions, as well as the need for discussion about intersectoriality. This finding points to the indispensable and necessary search for the effective participation of young people in the conception, formulation, monitoring and evaluation of practices, in an integral and interdisciplinary approach, so that they can listen to young people and involve their different identities.⁽¹⁻²⁾

According to the United Nations Children's Fund - UNICEF (2011), adolescents correspond to a total of 21 million of the Brazilian population and 38% of them live in poverty. Adolescence is a phase of the life cycle characterized by bodily, hormonal and sexual changes accompanied by the body's maturation process, as well as psychosocial.⁽³⁾

It is estimated that the percentage of intestinal infections caused by helminths and protozoa occurs in about 3.5 billion people, causing illness in an estimated 450 million individuals around the world. Due to the culture, education and precarious conditions in which a large part of the population finds itself.⁽⁴⁾

The adolescent public has a greater susceptibility to contamination by intestinal parasites, such prevalence and high incidence, have as main predisposing factors the habits of food hygiene and infrequent hand washing, combined with the lack of adequate infrastructure for the supply of drinking water and basic sanitation. These environmental factors favor the spread of fecal-oral enteral parasitoses that are endemic in several regions of Brazil.⁽⁵⁾

In this context, this study aimed to evaluate the impact of educational health actions as a way of preventing intestinal parasites in school adolescents in the metropolitan region of Camaragibe - PE. Together with the School Health Program (PSE - Programa Saúde na Escola), which

aims at the permanent integration and articulation of education and health, improving the quality of life of the school population.

METHODS

This is a retrospective research of qualitative analysis, and descriptive character, in which it evaluated through previous information related to the social aspects and living conditions of adolescents enrolled



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in a public school in the municipality of Camaragibe-PE, which were studied during the months of August to November 2016, through a structured questionnaire, culture circles and collective subject discourse. The 16 subjects included in the sample were selected based on the mutual interest of each one present in the classroom.

The data collection procedure took

place through filming, photos, voice notes of everything that was produced by the group of students.

The phase of preparation of the empirical data that were collected, through the different procedures described, was represented by summary steps, which aimed at organizing the narratives. In the second moment, with the analysis itself, which implied the need to reflect on this particular reality and the learning process after the application of prevention and health promotion measures, had as a procedure for data analysis, the discourse of the collective subject.

The educational action was based on Paulo Freire's Culture Circles⁽⁶⁾, in which it was worked from the following guiding questions: What are intestinal parasites; How to identify a parasite; What biosecurity measures can be adopted in relation to hygiene habits for prevention and What actions and measures would you implement in your neighborhood. In each circle, recreational activities were worked on, such as: role-playing, where the actors were divided into two groups mixed in sex and age and each group received a fictitious name, it was decided by the groups to use the letters A and B and each received a numbering from 1 to 8.

After the educational actions, the same structured questionnaire described for the initial evaluation was reapplied, in order to verify the effectiveness of the health education actions. The Collective Subject Discourse technique and Bardin's content analysis were used to analyze the collected data, the latter, which comprises a set of systematic and objective procedures for the description of content in messages, seeking to critically understand the meaning of their manifest or latent content.⁽⁷⁾

The Collective Subject Discourse technique - CSD⁽⁸⁾, a modality of presentation of qualitative research results, where the tabulated data are of a verbal nature, obtained from testimonies. Through the selection of Key Expressions or central ideas, which are the most significant parts of an individual answer to a question. Building

synthesis speeches, in the first person singular, where the thought of a group or collectivity appears as if it were an individual speech.

The research followed all the ethical procedures in force, being approved by the ethics committee in research with human beings of the Integrated Health Center Amaury de Medeiros – CISAM/UPE under the opinion nº 1.627.168. The research received the Letter of Consent from the Department of Health and Education of Camaragibe-PE. All those responsible for the actors signed the Free and Informed Consent Term (ICF) agreeing with the minor's participation in the study, and the Free and Clarified Assent Term (TALE) where the minor agrees to participate.

The research complied with the precepts of Resolution nº 466/2012, of the National Health Council, which employs the regulatory norms of research involving human beings, therefore, the right to anonymity and confidentiality was ensured. (9)

RESULTS

From the structured questionnaires on the socioeconomic profile and the specific knowledge about parasites, accompanied by oral interviews with the participants before and after the evaluation of the educational action with the culture circles from the discourse of the collective subject, it was possible to observe the contribution generated to the development of skills and abilities of this public.

SOCIOECONOMIC

In Table 1, we can observe the socioeconomic data of the sample components according to a structured questionnaire, from the quantitative gender to the sanitation network.

Theme 1. What are intestinal parasites

In this circle, we worked on the knowledge already acquired about what would be parasitic diseases and what are the most

prevalent types in the state of Pernambuco, building a new one through clarification between the students and the animators. It was observed that they referred their knowledge of intestinal parasites to a childhood disease caused by a single worm, the roundworm. Three students reported the parasitosis as related to water belly. In the course of this, the vision was modified and the sense of awareness was taken by the group. In search of knowing more about worms, as described in Table 2.

Topic 2. How to identify a parasitosis

In this theme, ways of identifying the infection by parasites were worked out, through signs and symptoms and laboratory tests. In addition to the importance of seeking care in health units. The actors reported knowing only the “stool tests” and few of them had performed them as a child.

Table 3 shows reports of not experiencing any symptoms associated with parasitosis, and of the use of anthelmintics as a child. In addition to the report of the

Table 1 – Socioeconomic data, 2022.

Gender	Male	12
	Female	04
Age group	15	06
	16	06
	17	05
Masonry residence		16
Inhabitants per household from 3 to 6 people		16
Water supply system		16
Use of wells and cisterns		05
Basic sanitation network		12
Sewage network disconnected from the public power		04
Residence in a flooded area		03

Source: survey data, 2022.

Table 2. Comparative pre and post discourse of the collective subject, theme 1, 2022.

Theme 1. What are intestinal parasites?	
PRE	POST
<p>“I think I've had worms, I don't really remember. Parasites are roundworms and worms that enter children's bodies and make them sick. We can get it through dirty food, if we go barefoot and step on the feces of a sick person.”</p> <p>“Worms are diseases caused by worms. Also by germs, microbes and bacteria, it causes water belly. But I don't think it kills, no.”</p>	<p>“Parasitosis are intestinal diseases caused by protozoa and/or helminths, which live in the intestine and feed on the food we eat. They are transmitted via fecal-oral and person-to-person contact, also by contaminated water and food. Anyone can get infected.”</p> <p>“Therefore, we must be aware that they should wash their food well and wash their hands always before and after eating and also when going to the bathroom and when leaving the house. Now I know that these worms are very aggressive and over time, if you don't take care of them, it can even lead to death.”</p>

Source: Survey data, 2022.



search for a basic health unit when sick or only as a child.

Topic 3. What biosecurity measures can be adopted in relation to hygiene and prevention habits

According to the students, in Table 04, they previously did not have the constant habit of performing hygiene and that, with the awareness of the implemented actions, they adopted measures that strengthened these attitudes. There is a good conditioning of the actions which reflects in the final result positive attitudes towards health education.

Theme 4. What actions and measures would you implement in your neighborhood?

In this circle, according to Table 5, they highlight the implementation of basic sanitation and cleaning of ditches and streets, which is a major problem in rainy seasons, emphasizing the importance of the partnership between government and population in order to succeed.

In this circle, it was evident the encouragement of the students' critical sense in terms of contributing to minimize public health problems related to the prevalence of parasitic diseases in the local community. By awakening their interest to be multipliers to other social agents to develop projects that are related to these issues and demand from public authorities, so that they develop more efficient health policies in the fight against such diseases that affect the community.

DISCUSSION

Among adolescents, intestinal parasites are widely disseminated, due to the socioeconomic and cultural conditions in which most of them are inserted. Situations for this aggravation are the precariousness of sanitation conditions in a low-income community, degree of sedentary lifestyle, cultural, dietary and personal hygiene habits, which are the main factors responsible for the high rate of intestinal parasites

Table 3. Comparative pre and post discourse of the collective subject, theme 2, 2022.

Theme 2. How to identify a parasite?	
PRE	POST
<p>"I know that sometimes the person doesn't even know they have parasites, and they can have a lot of things like the urge to vomit, weakness, the belly gets big, diarrhea, the person does the stool test to find out and then the doctor prescribes medicine."</p> <p>"It's very shameful to have to poop and take it to the exam. But you have to do it, right? My little brother had it, my mother just took him to the Health Center and the doctor gave him a stool test and then a medicine. I only took medicine for worms when I was a child. My mother occasionally gives me mastruz with milk, which the neighbor taught her."</p> <p>"I don't feel anything now. I only go to the doctor if I'm really sick."</p>	<p>"Parasitoses have symptoms that are: fever, tiredness, diarrhea and vomiting. They can often be confused with other diseases such as viruses, so when you feel something different, go to the doctor."</p> <p>"We shouldn't be ashamed to do the stool test, it's very important for the diagnosis of worms and there's the blood test and others too, which gives the doctor the certainty of which worm the person has. When the doctor prescribes the medicine, it should be taken at the right time. Even if we get better from the symptoms, we should do the treatment and then go back to the doctor and do the exams again."</p> <p>"At all ages we have to go to the doctor, from children to the elderly, to see if we are sick even if we don't feel anything. We shouldn't take medicine that the neighbor indicates, we have to go to the doctor if we feel anything. But we should always look for the Post to go to the doctor, sometimes people are sick and when they start to feel something, it's too late. It's always good to go to the doctor."</p>

Source: Survey data, 2022.

Table 4. Comparative pre and post discourse of the collective subject, theme 3, 2022.

Theme 3. What biosecurity measures can be adopted in relation to hygiene and prevention habits?	
PRE	POST
<p>"I can say that I was kind of unhygienic, I didn't always wash my hands, before eating or after using the bathroom. But I try to wash the food well before eating. I cut my nails almost all the time, mostly when my mom and grandma tell me to. I really like going barefoot and taking a bath in the pond and fishing for fish. Sometimes I throw the trash anywhere on the street, there is not always a trash can. People throw their garbage in the street anyway. I don't worry too much about hygiene. For me, worms were a small child's thing."</p> <p>"The teacher taught us about it but I didn't care much, I was just going to study close to the test, I thought it wasn't very important. I never cared about others, teenagers only care about themselves."</p>	<p>"Now I am aware that hygiene is important, that I must always keep myself clean, with cut nails, wash food well and wash my hands always before and after eating and also when going to the bathroom and when going out too, always walk with shoes on, and I shouldn't do this thing about taking a bath in the pond that's contaminated either. I should throw the trash in the trash and, if I don't find it soon, save it until I find a trash can to throw. Now I know anyone can get worms."</p> <p>"It helped in my knowledge for me to practice prevention even at home, to have more hygiene and such, it helped me a lot in that I could see that the teacher talked about hygiene in the prevention of diseases both at home and in the neighborhood. The importance of basic sanitation and such. I will try to tell everyone about the importance of hygiene. Make people around me aware that it's better to be safe than to get sick and spend more on medicine."</p>

Source: Survey data, 2022.

in this age group, a striking feature in poor populations. ⁽¹⁰⁾

The data obtained in the socioeconomic character were important, as they

created subsidies for the understanding and application of the methodology and educational techniques within the school community with this target audience. Such prophylactic actions used for the theme allowed the action to be successful.

To Albuquerque et al, ⁽¹¹⁾ educational practices can be a first step towards generating new prevention attitudes, as their actions are associated with socioeconomic and environmental policies that favor these changes. Being as effective as basic sanitation and being superior to mass treatment in the long term.

As can be seen in Table 2, there is a deficit in relation to knowledge about intestinal parasites, in the pre-action phase. Since, many thought it was just a single worm, not knowing the range of parasites that exist around the world, they described it as worms or correlated it with the water belly (schistosomiasis).

After the lectures and culture cycles, they showed great interest and curiosity in understanding the diseases caused by intestinal parasites. They sought to study and combine the knowledge acquired with those that were being transmitted during the work.

The absence of young people in Basic Health Units contributes to the inefficiency of promoting the health of adolescents by the family health strategy. Because they only seek the unit only for physical injuries, demonstrating neglect and rejection of educational and preventive activities, often due to the lack of adequate space for care and the interest of the unit's professionals in approaching this public. This intervention being carried out, a challenge in improving the quality of life of the school population.

Established by Presidential Decree No. 6,286, of December 5, 2007, the School Health Program (PSE) results from the integrated work between the Ministry of Health and the Ministry of Education, with the objective of contributing to the integral formation of students through actions of promotion, prevention and health care, with a view to facing the vulnerabilities

Table 5. Comparative pre and post discourse of the collective subject, theme 4, 2022.

Theme 4. What actions and measures would you implement in your neighborhood?o	
PRE	POST
<p>"The community has to demand from the city hall, which should invest in good sanitation, garbage collection and street cleaning. If the people see the city clean, they will want to keep it clean."</p> <p>"We can make people aware by saying how serious it is when a person gets worms and that the most important thing is to prevent catching it than to treat it, which is more expensive. Because often there is no medication at the clinic and we have to buy it."</p>	<p>"We have equal rights. The population must demand from the city hall: Garbage collection; Cacimbas to put the garbage; Cleaning of channels and streams: Investment in quality basic sanitation with piped water and sewage in all houses. Everyone must do their part, only then can we change this reality in our community in a better way."</p> <p>"Working to raise the awareness of the population that prevention is the best way to avoid any disease. With the participation of the Health Post in this work within the schools and in the community, together with the government and the city hall, which should invest in the posts to send medication, put the health agents to work and do their services, which is to make the population aware."</p>

Source: Survey data, 2022.

that compromise the full development of children and young people in the public education network. ⁽¹²⁾

The students were able to perceive the importance of looking for the PSF every six months for routine medical consultation, carrying out tests when requested, observing symptoms and improving hygiene. In addition to the rational use of medication, you should never take medication indicated by third parties, only indicated by trained professionals.

It is estimated that the percentage of intestinal infections caused by helminths and protozoa reaches billions of people around the planet. Where in many countries, millions of people find themselves in unfavorable sanitary conditions, living habits, hygiene and education. ⁽³⁾

To Albuquerque et al. ⁽¹¹⁾, the habit of washing and disinfecting hands with soap and water or 70% alcohol is an essential biosafety tool, with minimal cost, with the ability to promote the control of infections with great potential for contamination. Being the most effective way to prevent infections transmitted by contact and by the fecal-oral route, such as flu, parasitic diseases and infectious diarrhea.

Diseases of fecal-oral transmission, ac-

ording to Belo et al. ⁽³⁾, require an important care to be taken into account, related to the correct handling of food and beverages and good sanitary conditions. These habits have to be encouraged from childhood, in home and school environments, but they must also be demanded in companies and organizational environments.

Thus, it is essential to encourage practices such as drinking only filtered and/or boiled water, thoroughly cleaning food before consumption and paying attention to the packaging and temperature conditions to which they are subjected. The prioritization of these basic health and safety principles, in any environment with potential risk for infection, reduces the risk of contamination, since basic health measures can act as the main means of prevention.

The students reflected in this circle on biosecurity measures and came to the conclusion that the very simple way to prevent intestinal parasites is to keep hygiene up to date. Both body and domestic hygiene, washing hands well after going to the bathroom, as well as fruits and vegetables before consuming, cooking food well. Because associating good hygiene habits with your routine will avoid many health problems. Health education is a weapon

of great relevance in public health, bringing great benefits to the entire community, especially the most needy.⁽¹³⁾

According to Faria⁽¹⁴⁾, based on knowledge of the territory, health problems and the organization of services, Primary Health Care (PHC), it must act through a set of actions, of an individual or collective nature, located at the first level of care of the health systems, aimed at health promotion, disease prevention, treatment and rehabilitation.

In the case of intestinal parasites, the sanitary and hygienic conditions of the communities must be considered, since the main transmission vehicles are found in water and food contaminated with eggs or larvae. And the cases that are often asymptomatic make it difficult to determine their prevalence and control their transmission.⁽¹⁴⁾

It is necessary to associate measures involving environmental sanitation, health education and treatment of infected individuals. For a community that does not

have public garbage collection, basic sanitation, joint action between government spheres and society itself, contributes to the increase of intestinal parasites in the local community.⁽¹⁵⁾

The results obtained demonstrate that the topic addressed has important relevance. A significant change in the way of thinking and acting of the students involved can be observed in the course of the research, a change in habits and interest in relation to personal and food hygiene, and knowledge about transmission, prevention and biosecurity within the community where they are located.

CONCLUSION

According to the present study, it can be observed that health education in the control of parasites proved to be a viable, low-cost and highly effective tool in its applicability, being able to achieve significant and lasting results over time, being indicated for populations with high or low

endemism of diseases.

Being for the present, it is possible to affirm that through an action plan with the community, raising fragile points as already mentioned above are essential, as well as the continuity of educational actions and health promotion. For, such practices constitute an important step in the generation of new attitudes, in the prevention and promotion of the health of these adolescents within the school community and society where they are inserted. Emphasizing that these are articulated and associated with socioeconomic and environmental policies that favor these changes.

In this light, the nurse becomes an important tool as a facilitator in the health education process through the use of educational methodologies, such as the Culture Circle. These educational health actions aim to improve the individual's capacity, in the autonomy of their own health as well as in relation to the environment where they live.

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