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Ascaridiasis, preventive health for children and adolescents: experience report

EXPERIENCE REPORT

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DECLARATION OF THE EXISTENCE OR NOT OF CONFLICT OF INTEREST: THERE IS NO CONFLICT OF INTEREST.

Ascaridíase, saúde preventiva para crianças e adolescentes: um relato de experiência

ABSTRACT

Introduction: Ascariasis is a very common parasitosis among children and adolescents, and may cause complications, considering the immature immune system. Furthermore, it can result in cognitive problems in this group that can affect school development. Thus, it is relevant to address the issue with this group, aiming at prevention. **Objective:** To report the experience of medical students during an extension activity of teaching on the parasitosis ascariasis for children and adolescents, as well as analyzing the impact of the activities on the target audience. **Methodology:** This project is an experience report done after researching databases, such as Scielo and PubMed, questionnaires were applied to analyze the young people's prior knowledge on the subject. Afterwards, group dynamics and games were held in person, mainly addressing the transmission and prevention of ascariasis. **Results:** It was inferred, through games and activities with the students, that the experience resulted in a significant increase in their knowledge about the topic. At the end of the activities, they had already memorized and internalized relevant information to avoid spreading the disease. **Conclusion:** Therefore,

it is concluded that the experience was extremely useful for the prevention of the disease among the group, as well as for the personal and professional improvement of the academics involved.

Keywords: Ascariasis, Health Education, Adolescents, Children, Disease Prevention.

RESUMO

Introdução: A ascaridíase é uma parasitose frequente entre crianças e adolescentes, podendo causar complicações, considerando o sistema imune imaturo desses. Ademais, ela pode resultar em problemas cognitivos nesse grupo, podendo prejudicar o desempenho escolar. Assim, torna-se relevante abordar o tema com as crianças e com os adolescentes, visando a prevenção dessa parasitose. **Objetivo:** Relatar a experiência de acadêmicas de medicina durante atividade extensionista sobre a parasitose ascaridíase para crianças e adolescentes, bem como analisar o impacto das atividades para o público-alvo. **Metodologia:** O presente trabalho é um relato de experiência realizado após pesquisas em bases de dados, como Scielo e PubMed. Foram aplicados questionários para analisar o conhecimento prévio dos jovens sobre o tema. Depois, dinâmicas e jogos coletivos foram realizadas, de modo presencial, abordando, principalmente, a transmissão e a prevenção da ascaridíase. **Resultados:** Foi inferido, em jogos e atividades com os alunos, que a experiência resultou em um aumento significativo de conhecimento deles em relação ao tema. Ao final das atividades eles já haviam memorizado e internalizado informações relevantes para evitar o contágio da doença. **Conclusão:** Conclui-se que a experiência foi extremamente válida para a prevenção da doença entre o grupo, bem como para o aprimoramento pessoal e profissional das acadêmicas envolvidas.

Palavras-chave: Ascaridíase, Educação em Saúde, Adolescentes, Criança, Prevenção de doenças.

INTRODUCTION

Intestinal parasites cause diseases in a large part of the world's population, particularly in developing countries, mainly among children[1]. Among the parasites, helminths stand out *Ascaris lumbricoides*, which causes the helminthiasis with the highest incidence and prevalence in the world, ascariasis[2]. Ascariasis is commonly asymptomatic, however, when parasitic infestations are moderate to high, it can cause complications, such as malnutrition, especially in children, with transmission being facilitated by contaminated food or objects[3].

In addition to this greater ease of contamination by touching contaminated food and objects, there is also a greater susceptibility of children to this disease due to their developing immune system[4]. Furthermore, children who have difficulty breastfeeding usually have an even more impaired immunity, considering that breast milk contains essential components for immunity, such as the protein lactoferrin, which stimulates cell proliferation. In this way, prophylaxis actions among this group become even more relevant [5,6].

Moreover, it is possible to associate the presence of intestinal parasites with underdevelopment. This is due

to the relationship between the contagion of these parasites and poor hygiene conditions, since habits, such as correct hand washing are essential for prevention. Another aggravating factor that justifies the higher incidence of enteroparasitosis in these countries is the lack of basic sanitation, which results in greater exposure to parasites, mainly when it comes to drinking untreated water[7,8]. In Brazil, parasites caused by helminths are the most commonly found in children [9].

The parasitosis under study, ascariasis, has statistically significant associations with low cognitive performance in children in Brazil. This was observed in a study carried out in Americaninhas, backcountry of Minas Gerais, in 2008, which evolved 210 infected children and healthy children, whose tests were applied to observe cognitive development. The study showed that the presence of the disease is directly related to lower test results. Therefore, it is highlighted how worrying this information is, as it could harm these children's school learning, making actions aimed at disease prophylaxis even more relevant[1].

Regarding to children, the prevention of this parasitosis becomes even more challenging, since the level of experience is, in general, lower and educational methods for them must be more creative in order to develop consistent activities with the age group. In relation to this, development and learning in individuals, in general, including the age group involved, consist of two sources of knowledge: an endogenous – intrinsic episteme to the individual, group and society - and another exogenous - relating to acquired knowledge throughout life[10]. Taking it into consideration, the exogenous source has a direct relationship with teaching, especially in the youth phase, a time when learning is more effective and faster. Furthermore, in the age range of the target audience, children are already further ahead of the concrete operational period, where it is defined by the individual's ability to make associations logically and solve problems[11]. Thus, children solidify their knowledge and show greater development through playing.[12].

In this context, recreational activities constitute a useful and relevant tool in education and promotion of knowledge. From them, children tend to learn and make associations more effectively when they are exposed to play. In this perspective, associating playfulness with learning, there is a potentially successful strategy, since games require concentration and attention. Therefore, the adoption of such techniques becomes essential to achieve good learning results[13,14].

Moreover, it is clear that age-appropriate activities promote learning and intellectual stimulation, in addition to stimulating social interaction and a sense of community, since when subjected to playfulness, young people learn to work as a team, as well as to solve problems. In this way, the objective of this project was to promote knowledge about the prevention of Ascariasis through playful and dynamic methodologies among the project's target audience, children and adolescents, as playful activities enable better results in the child's learning process, as it facilitates the construction of reflection, autonomy and creativity, thus establishing a close relationship between playing and learning [15,16,17,18].

EXPERIENCE REPORT

The methodology of this work consisted of several actions carried out in the first half of 2022, with fortnightly 50-minute meetings in a Non-Governmental Organization (NGO) located in the city of Belo Horizonte, on the neighborhood São Gabriel. This institution advocates combating social inequality through education. The project's target audience was 30 children and adolescents aged 10 to 14 who attend the NGO after school.

Initially, the Google Forms platform was used to perform a questionnaire with general questions about health education, food hygiene, personal hygiene and some specific questions about the pathology in question. Based on the obtained answers, explanations and playful dynamics were performed on the subject. Such explanations were made using colorful and interactive slides to attract children's attention with the aim of achieving better results.

Then, 4 children were chosen to perform the following dynamic: a blindfold was used and gouache paint was placed on their hands, while the rest of the group watched and then they were asked to simulate hand washing. At the end of the session, participants were able to observe parts that were no longer washed and that could be a source of contamination for various diseases. Thus, this dynamic contributed to improving the effectiveness of the hand washing process and helping to remember the steps.

At another time, actions involving dynamics were carried out to fix content about ascariasis, in which videos and slides were used to explain the disease theoretically. Furthermore, Fini bullets were taken to represent the morphology of the *Ascaris lumbricoides* and attract children's attention. A piece of string was also used to demonstrate the size of the roundworm. At last, competitive games were held on the topics covered, using true or false questions. The dynamics were carried out in groups to discuss the subject among students and the winning group received a prize basket containing several books, colored pencils, games, stickers and sweets.

From this, on the last day another questionnaire was performed with some questions similar to the first with the aim of observing whether there was a significant improvement in the participants' knowledge regarding the main points of basic sanitation and also roundworm *Ascaris lumbricoides*.

RESULTS / DISCUSSION

In view of the activities carried out with children and adolescents, it was observed, based on the results of the initial games, a relationship between the lack of information regarding the prevention of parasitic infections and the greater susceptibility to developing them, especially in children and young people. In this context, the explanations and dynamics, applied in a playful way, proved to be effective in transmitting knowledge about ascariasis, its mechanisms of action and prophylaxis to the community. This is because, at first, the children did not know what parasites were, how they became infected with them or had even heard the name ascariasis. They only popularly knew the nickname "worm".

The children, prior to the project, did not have the necessary knowledge about parasitic diseases. Despite their contact with the Science discipline, many of the students had no knowledge of the subject, without knowing how to differentiate parasites from other organisms, such as bacteria or viruses.

Moreover, despite the age range variation, it is noteworthy that there was no significant difference in the learning process and all children were interested during the dynamics. After the experience, an evolution of knowledge about what was taught was observed: at the end of the project, the questions marked and the answers given were mostly correct. It is noteworthy that some children were able to name, without consultation, the etiological agent of ascariasis, as well as characteristics and symptoms of the disease. These facts show that the methods of teaching applied by the students proved to be effective in absorbing information, confirming that understanding through a recreational method promotes a significant effect on children's health education.

In this way, by presenting knowledge about the forms of contamination, children will consequently be able to include more hygienic actions in their routine, as they are aware of the correct way to wash their hands and food, what drinking water should be like and other methods of preventing parasitosis. Thus, the initial intention of promoting knowledge and introducing hygiene habits into children's daily lives, through this awareness, was achieved.

Furthermore, it is worth highlighting as another effect of the project to the humanization of medical students involved in the project. This is due to direct contact with the community, with its socioeconomic limitations and needs, which provides the discovery of other experiences and creative alternatives to solve their demands, helping to train honest and empathetic professionals. It is also worth highlighting the relevance of this humanization arising from direct contact with the community, since the topic is little covered during graduation in the theoretical scope, despite being essential to enable more humanized medical care. Such contact will certainly benefit the training of more empathetic professionals[19,20].

In this perspective, the validity of the experience lived between the children and adolescents of the Institute and the students of the medical course is proven, since there was realization and promotion of knowledge, in addition to exchange between the university students and the students, enabling the understanding of different realities. Thus, the importance of actions like this in promoting the health of the population, in the personal and academic improvement of medical students is concluded.

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