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RESEARCH ARTICLE

Educational intervention on enteroparasitosis: a quasi-experimental study

Intervenção educacional sobre enteroparasitoses: um estudo quase experimental

Intervención educativa sobre enteroparasitosis: un estudio cuasi-experimental

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Abstract

Introduction: Enteroparasitosis has been causing serious problems of public health globally, especially in developing countries. Even with the general population reportedly having knowledge about intestinal parasites, studies indicate that they do not know how to identify the verminoses. Objective: To elaborate, implement, and evaluate an educational program on intestinal parasites in a public school in Ribeirão Preto – SP. **Materials and Methods:** Quase-experimental, non-randomized study conducted with 56 students from the first to the fourth grades of elementary education. In order to evaluate the students' knowledge before and after the educational intervention, a semi-structured questionnaire was applied (pre- and post-test). **Results:** Changes were evidenced in the students' responses to hygiene habits, especially in questions about how worms feed (p = 0.008); or what not to do to avoid contamination with worms (p = 0.05); what is the form of the worms when ingested (p = 0.001); which organs the worms enter (p = 0.001). Thus, it was evident that this type of educational activity was efficient to help in the learning by elementary school students. **Discussion:** After the educational activity, growth was noted in the correct answers for most of the questions, however, difficulties persisted in understanding about the symptoms, the cycle, and which organisms are worms. **Conclusions:** It is hoped that this work will encourage health and education professionals to include health educational practices in the school context.
Key words: Health Education; Health Promotion; School Health; Ascaris Lumbricoides.

Resumo

Introdução: As enteroparasitoses vêm ocasionando sérios problemas de saúde pública no mundo, sobretudo nos países em desenvolvimento. Mesmo com a população em geral relatando que tem conhecimento sobre as parasitoses intestinais, estudos apontam que não sabem identificar as verminoses. Objetivo: Elaborar, implementar e avaliar um programa educativo sobre parasitoses intestinais em uma escola pública de Ribeirão Preto – SP. **Materiais e Métodos:** Estudo quase experimental, não randomizado realizado com 56 alunos do 1º a 4º ano do ensino fundamental. Para avaliar o conhecimento dos alunos antes e após intervenção educativa, foi aplicado um questionário semiestruturado (Pré e Pós - teste). **Resultados:** Houve mudanças nas respostas dos alunos em relação hábitos de higiene, especialmente nas questões sobre como os vermes se alimentam (p=0,008); o que não fazer para não se contaminar com vermes (p=0,05); qual o formato dos vermes quando é ingerido (p=0,001); quais órgãos os vermes atravessam (p=0,001). Assim, ficou evidente que este tipo de atividade educativa foi eficiente para auxiliar na aprendizagem de alunos do ensino fundamental. **Discussão:** Após a atividade educativa sem notou um crescimento nos acertos para a maioria das questões, contudo ainda houve dificuldades de compreensão sobre os sintomas, o ciclo e quais organismos são vermes. **Conclusões:** Espera-se que este trabalho incentive profissionais da saúde e da educação a incluir práticas educativas sobre saúde no contexto escolar.
Palavras chave: Educação em Saúde; Promoção da Saúde; Saúde Escolar; Ascaris Lumbricoides.

Resumen

Introducción: Las enteroparasitosis ocasionan serios problemas de salud pública en el mundo, sobre todo en los países en desarrollo. Incluso con la población en general relatando que tienen conocimiento sobre las parasitosis intestinales, estudios apuntan que no saben identificar las helmintiasis. Objetivo: Elaborar, implementar y evaluar un programa educativo sobre parasitosis intestinales en una escuela pública de Ribeirão Preto - SP. **Materiales y Métodos:** Estudio cuasi-experimental, no aleatorizado realizado con 56 alumnos de 1º al 4º año de enseñanza primaria. Para evaluar el conocimiento de los alumnos antes y después de la intervención educativa, se aplicó un cuestionario semiestructurado (Pre y Post - prueba). **Resultados:** Hubo cambios en las respuestas de los alumnos en relación a hábitos de higiene, especialmente en las preguntas sobre cómo los helmintos se alimentan (p = 0,008); que no hacer para no contaminarse con helmintos (p = 0.05); cual es la forma de los helmintos cuando son ingeridos (p = 0.001); cuales órganos los helmintos atraviesan (p = 0.001). Así, quedó evidente que este tipo de actividad educativa fue eficiente para auxiliar en el aprendizaje de alumnos de la enseñanza primaria. **Discusión:** Después de la actividad educativa se notó un crecimiento en los aciertos para la mayoría de las preguntas, sin embargo todavía hubo dificultades de comprensión sobre los síntomas, el ciclo y cuáles organismos son helmintos. **Conclusiones:** Se espera que este trabajo incentive a profesionales de la salud y la educación a incluir prácticas educativas sobre salud en el contexto escolar.
Palabras clave: Educación en Salud; Promoción de la Salud; Salud Escolar; Ascaris Lumbricoides.

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INTRODUCTION

Parasitic infections *(entero-parasitosis)* have caused serious public health problems in the world, especially in developing countries with poor sanitation conditions, inadequate housing; and they are closely related to the low socioeconomic status of individuals, mainly those who live below the poverty line. This fact brings about an increased incidence of such morbidities[1].

Although the general population consider they have knowledge about intestinal parasites, studies show that they cannot identify worms' infestations and reflect misperceptions about the form of transmission, stating, for example, that infestation occurs through sneezing or dirty clothes. Lack of knowledge about preventive measures can significantly contribute to spreading the disease[2-4].

This disease affects different ages, however, child population is seen as the protagonist, since this is a more vulnerable group due to lack of knowledge regarding the basic principles of hygiene, as the habit of washing hands, being in contact with the soil, and have an immune system that is less able to recognize and combat parasitic diseases. Among the main clinical manifestations, it is possible to identity malnutrition, anemia, diarrhea, impairment in learning, and physical development; affecting the quality of life of these children[2].

In this sense, studies have shown that a large percentage of the world's population has already suffered from some type of entero-parasitosis. Latin America has had an average infection rate between 30% and 53%, of which approximately 46 million are children and adolescents aged from 1 to 14 who are at risk for helminth infection[5].

In Argentina, the prevalence of intestinal parasites varies among regions in the country. In the north and south, there are records of more than 80% of cases, while the central part is identified from 40 to 70%[2]. As for Chile, this same problem is observed due to being considered one of the countries with greater social inequality. In this country, a prevalence of 70 to 80% of parasitic diseases has been reported in individuals from rural and urban settlements[4]. With regards to Colombia, a similar situation is observed, despite efforts to stop the spread of worms, the number of cases of contaminated individuals remains high[6].

With respect to the northern and northeastern regions of Brazil, the prevalence of these diseases is high, reaching around 70 %, and even higher in school population[7]. Faced with this series of facts, a study in Jequié / Bahia identified a high number of people affected by enteroparasitosis, despite households having basic sanitation and piped water[7]; when the State of São Paulo was analyzed, surveys showed a decrease in the prevalence of parasitic diseases in the general population. However, a significant rate of these infections in children is still evidenced[8,9].

The large number of cases is derived from the agglomeration of population, rural exodus, improper housing, as well as lack of knowledge by the population. Research shows that the most frequent intestinal parasites in children are those caused by *Ascaris lumbricoides, Entamoeba histolytica, Enterobius vermicularis, Trichuris trichiura, and Giardia lamblia*[3,7].

The primary means of transmission of parasitic infections is the fecal-oral route, given the fact they are linked to the intake of water or contaminated food. In schools, the bad habit of putting the hands in and on their mouths is widely seen, this behavior is easily perpetuated among children through contact in collective environments[10,11].

Prevention is still best way to avoid the disease, in this respect, practices in health education can be inserted in the communities in order to improve knowledge regarding the risk factors that lead an individual to be infected by enteroparasitosis. The early diagnosis followed by treatment is the best way out[12].

Thus, the primary role of the nurse within the basic health units (BHU) can be seen, these professionals act directly in the control of intestinal parasitosis through guidelines of good hygiene practices. It is really necessary to know the community, to plan health education actions in order to reduce the high morbidity and mortality rates[13,14].

Because of the above, when theory and practice come together, that is, with the student's prior knowledge and experience, the teaching-learning process will be more efficient[14]. However, to make the work more effective, it is necessary to involve parents, educators, and students in the educational development, in order to make them active members of health education strategies[15]. When entering information at home and the schools through health education programs, it is important to assess whether such actions have provided the attainment of the set objective, that is, if individuals understand the importance of avoiding factors that trigger morbidities[16].

Based on this scenario, the Ministry of Health, in partnership with the Ministry of Education (MEC), expanded the specific health programs to public schools in the country, through Presidential Decree No. 6.286, issued on December 5, 2007, which deals with the Health at School Program (PSE). This program aims to articulate itself with the Unified Health System - SUS, in order to promote the population's health, provide subsidies to improve communication between schools and health facilities, educate through integral training, reducing vulnerability, and expanding user participation in public health education policies[17].

Given the above, this study proposes to evaluate the effectiveness of one educational intervention on intestinal parasitosis in a school belonging to the public network in Ribeirão Preto, São Paulo (SP) , with children from grades 1st to 4th .

MATERIALS AND METHODS

Study Design

Quasi-experimental, nonrandomized study based on pre and post intervention. Changes in the same subjects before and after the implementation of educational activities were analyzed, following an intra-subject design[18].

Study site

The study was conducted in a public elementary school located in a peripheral, urbanized neighborhood near a health unit.

Study population and sample

The study population consisted of 134 students (intentional non-probabilistic), who attended the 1st to 4th grade of elementary school, aged 6 to 11 divided into 6 morning classes.

Inclusion Criteria: All students attending grades 1 to 4 of elementary school were included in the study.

Exclusion Criteria: Subjects who did not deliver the informed consent were excluded, but they participated in the activities, but without making part of the study population.

Study protocol and instrument

The study was divided into four stages: (1) application of a questionnaire (pretest) to the students to identify previously the knowledge about enteroparasitosis; (2) elaboration of educational actions; (3) implementation of actions and (4) application of the same questionnaire (post-test) to evaluate the educational action and knowledge of the students.

To assess students' knowledge before and after educational intervention, a semi-structured questionnaire was applied, validated with basis in the literature[19 - 23], by experts in the area (nursing teachers and educators of the studied school). This questionnaire was applied through individual interviews, whose data collected in the pre- intervention stage helped the planning of activities.

The elaboration of the educational intervention was based on the theoretical framework of meaningful learning. Thus, when elaborating the activities, daily situations of the study population were employed, so that the student had the opportunity to relate the subject to knowledge he already had, being possible for them to perform the articulation of knowledge with the scientific and technical knowledge assimilated during the activity, making the understanding of intestinal parasitosis more concrete and dynamic for students[24].

Activities were carried out through two workshops involving games, puppet theater, illustrations and panel building. All activity was planned and built by the researchers, from the script to the making of materials. These workshops were

held in two meetings with each class and during the development, they were assisted by six school teachers, who contributed to the organization and planning of educational activities.

In the first workshop, a puppet theater "Chatting with Worms" was initially presented. For the interaction of students with the subject, researchers were the ones who represented the puppet characters. Then, the class was divided into groups to participate in the game titled "Surprise Box". In this game the contents related with morphology, cycle, transmission, and prophylaxis of worms were dealt with. Each box covered one of the contents and contained playful activities and questions for the group to do together. At the end of this workshop, each student was asked to draw and / or write a message against the worms.

During the second workshop, students were separated into small groups in order to make posters and panels related with transmission, prevention, and cycle of the worm; these productions would later be exhibited at the health fair.

After the educational intervention, the students answered the questionnaire again through an individual interview, aiming to detect the children's knowledge regarding intestinal parasites. In addition to these questions, the questionnaire also contained a section for sociodemographic characterization of the population, in which there were questions such as age, gender, and parents' occupations.

Two weeks after the end of the workshops and to finalize the educational program, the School Health Fair was held, which involved students, family members, and the entire school community.

The first step was to make an invitation for each student involved in the research, in order to invite their respective relatives. Due to the fact that the parents had paid occupations during the week, it was not possible for them to participate in the educational interventions developed at the school, so it was decided to develop the fair on the weekend with plenty of hours available (from 08hs to 18hs), in order to involve the largest number of participants possible, however, few parents and guardians could attend.

The Fair consisted of three stations: Worm Cycle, The Worm (morphology) and Transmission and Prevention. A variety of materials were used to address the issues: full-size resin in human body, alcohol-fixed *Ascaris lumbricoid* worms placed on a tray, microscope with worm egg slides, picture posters identifying worm transmission media, information leaflet on prevention, handed out to all participants, and posters produced by students in the second workshop.

It is noteworthy that participation of educators was of fundamental importance in the planning, elaboration, and construction of activities to support the educational process in all stages. Finally, the education program implemented in the

school was evaluated by applying the questionnaire (post-test) to the students again through an interview.

Statistical analysis

To evaluate the significance between the proportions of responses before and after the health educational process. The chi-square test was used to assess the significance level of $p < 0.05$ using Sigma Plot 11.0 software.

Ethical aspects

The research was conducted according to the recommendations of Resolution 466/2012 of the Ministry of Health / National Health Council (CNS) that refers to the conduct of research involving human beings. The research protocol was submitted to the Research Ethics Committee of the University of São Paulo at Ribeirão Preto College of Nursing and approved by the CAAE protocol: under protocol: nº 1147/2010[25].

The students' guardians were informed about the objectives, data collection procedures (through a questionnaire) and signed an informed consent form for their inclusion in the research. This presentation took place in class on the day in which the parent meeting was held; the leaders who were not present that day, received the consent form and the invitation letter by the student where such documents were attached to the notebook. The subjects' participation occurred voluntarily, and they were not subjected to any risk to their health or physical and mental integrity. Those responsible were informed that consent could be withdrawn at any time during project implementation without prejudice, and were assured that they would not be identified in the results publication.

RESULTS

78 students participated in the study, 41 (52 %) were male , aged 6 to 11. The variable "father occupation" most described by the students was those of service and transportation workers: truck driver, porter, bricklayer, painter, etc. regarding the "mother's occupation," the large portion, 56 (7 1.8 %) were classified as workers in domestic services in general and cross-cutting functions (nanny, day laborer, machine operator, etc.) (Table 1).

Table 1. Distribution of school children from 1st to 4th year of a school in the Public Elementary Schools Network by gender, age, and occupation of parents (N=78). Ribeirão Preto - SP, Brazil, 2014

Variables	Frequency	
	n	%
Gender		
Male	41	52,6
Female	37	47,4
Age		
06	2	2,6
07	18	23,1
08	31	39,7
09	21	26,9
10	4	5,1
11	2	2,6
Occupation (father)		6,4
Inactive	5	
Basic	54	69,2
Technician	14	17,9
Higher	1	1,3
Others	4	5,1
Occupation (mother)		
Inactive	6	7,7
Basic	56	71,8
Technician	9	11,5
Higher	4	5,1
Others	3	3,8

Source: Research data.

Responses from students regarding handwashing showed that before educational interventions, most of them were used to washing hands after using the toilet, but only 47 (60.3%) of the school had the habit of doing so before eating. Handwashing after using the toilet was already performed by most students before educational activities (n= 67, 85.9%), and after the educational program, 53 (94.6%) of students reported washing their hands after using the toilet. As for the type of water they described using for drinking (tap water) there was no statistically significant improvement (Table 2).

Table 2. Appropriate responses of children related to the hygiene habits of students from 1st to 4th year before and after educational activities in a public school in Ribeirão Preto, São Paulo, SP, 2014

Hygiene habits	Before n= 78 (%)	After n=56(%)	p-value
Handwashing before eating	47 (60,3)	47 (84)	0, 275
Handwashing after using the toilet	67 (85,9)	53 (94,6)	0, 799
Drinking Water Type	25 (32,1)	22 (39,3)	0, 670
Washing Raw Food Before Eating	78(100)	56 (100)	0, 901
Waste Destination	78 (100)	56 (100)	0, 901

Source: Research data.

Regarding the knowledge shown in Table 3, there was an increase in the number of correct answers for most questions after the educational activities , however, the question "What are the symptoms you experience when you have worms?", Only six (10.7%) children got it right. Among the questions analyzed, this was the only one in which p-value was not significant.

The answers that had statistical significance point to an assimilation of information by the students. " What do worms eat?" (P = 0.008) and "What is the shape of the worm when ingested ?" (P = 0.001). Regarding the worm cycle, after the health education work, there was a 14.3% increase in the number of students who responded that worms go through more than one organ during their life cycle, totaling 55 (98.2 %) of correct answers by students. However, most students before (n = 76, 97.4%) and after the educational activities (n = 39, 69.6%) were unable to specify which organs the worms go to, but they do know that worms inhabit the intestine as adults. Although most answers were incorrect, the result obtained was significant (p = 0.001) (Table 3).

Table 3. Appropriate answers of students from 1st to 4th grades related to specific questions about intestinal worms before and after educational activities in a public school in Ribeirão Preto, São Paulo, SP, 2014

Worm Questions	Before n= 78(%)	After n=56 (%)	p-value
What organisms are worms?	14 (17,9)	20 (35,7)	0,112
Do worms cause disease?	74 (94,9)	56 (100.0)	0,931
How do you get worms?	50 (64,1)	49 (87,5)	0,301
What do worms feed on?	33(42,3)	52 (92,8)	0,008
What are the symptoms you experience when you have worms?	12 (15,4)	6 (10,7)	0,667
What to do in order to not catch worms?	21 (26,9)	31 (55,4)	0,043
What is the shape of the worm when ingested?	13 (16,7)	38 (67,8)	0,001
Does the worm live in only one organ or more?	65 (83,3)	55 (98,2)	0,602
Which organs do worms pass through?	2 (2,6)	17 (30,4)	0,001

Source: Research Data

DISCUSSION

Based on the results, there is a greater number of correct answers in most questions after the educational activity, but there are still difficulties to understand the symptoms, the cycle and which organisms are worms. However, those who reported having been infected with worms already showed that they knew these issues, relating the symptoms, the ways of transmission and prevention with their experiences. Thus, it is clear that children who had some previous experience with infections caused by worm showed a higher level of learning, since they were able to assign meaning to preventive actions relating scientific knowledge to practice[26]. It is noteworthy that the age of the students (6 to 11) was not a challenge for research, since the questionnaire was applied by means of an interview and the educational activities were playful, which favored student participation during the workshops.

> *The literature shows that health education is a very important tool in face of this problem and a very precise strategy to work on the subject of intestinal parasites, as it facilitates learning and promotes an improvement in the health of individuals, since knowledge built through it may help prevent it* [27].

Regarding the socioeconomic status of students, it can be seen through the variables "Father's Occupation" and "Mother`s Occupation" that the study population has a low socioeconomic level, since most of the students answered that their parents had jobs in domestic service, transportation or machine operators. In other studies, the same situation can be observed in which education and work with low pay are intrinsically related to the lack of knowledge regarding hygiene-related issues[28,29].

It is known that intestinal parasitosis more frequent in children, are the associated with the habit of taking the hand to the mouth, hand washing after using the toilet is essential to break the chain of disease transmission. Study conducted[30], with preschool children identified that a significant portion washed their hands sometimes and a minority did not wash them which leads us to believe that these latter need to be guided and educated as to the importance of this practice .

Similarly, a study conducted with students in the first cycle of education, showed that after performing the educational activity through culture of microorganism before and after hand washing, helped the students' self-perception of its importance. It should be noted that these results have shown to be relevant because, they reaffirmed that lectures and recreational activities can contribute in changing behavior. Defending this hypothesis, a study states that preventive measures with playful actions favor the increase of perception of students at the beginning of elementary school[31].

These data show the need to emphasize within the educational activities the importance of hand washing after using the toilet and mainly before meals. The lack of knowledge about the principles of basic personal hygiene and care in the handling of food makes infections easier to acquire and precipitates reinfection in areas considered as endemic[32].

There are cases where parents blame the school for this education, and the absence of family structure causes social destabilization and harmful consequences. In this way, the function of the educator is to provide culture, knowledge, and foster parents as well as students to acquire healthy habits, these actions are essential in the prevention of intestinal parasitosis[33].

In this regard, it was observed that the type of water used for drinking remains inappropriate. This fact can be explained by the socioeconomic conditions of families, because many do not have financial conditions to treat the water before ingesting it, providing this way the disease transmission.

Corroborating these data, studies in Latin America, held in Argentina, Colombia, Cuba, Ecuador, Peru and Venezuela, portray that the high number of students in cases infected by intestinal parasites are closely linked to impoverishment, lack of sanitation, deficit in access to comprehensive health care, low education level of mothers and poor hygiene habits[2,34].

Moreover, in a survey carried out in order to identify the home care drinking water and its effects on health in Vitoria (ES)[32], addressed to low income population, considered clean water as that coming out of the faucet, with no color, odor nor taste; such are not associated with contamination, however, they reported to have knowledge about the importance of consuming filtered or boiled water. Strengthening these data, the result suggests that people with this believes do not know about the toxicity of microorganisms present in untreated water[35, 36].

Another significant finding can be seen after the educational intervention, when there was greater number of hits on the organs through which the worms pass. Despite not reporting the organs correctly, most reported going through the intestines in adulthood. This data is quite significant thanks to the interpretation of schoolchildren stating that feces can be a means of transmission.

These findings indicate that by learning that adult worms live in the gut, students were able to understand and significantly associate what the parasites feed on, that is to say, the places they pass through during their life cycle. It is important that the students learn on what parasites feed on like lettuce leaves, vegetables, beef or pork[37, 38], this knowledge facilitates prevention of parasitosis.

After the educational activities , when looking at Table 3, it is clear that the question on symptoms caused by worms was incorrect in general, this suggests that ages between 7-12 years of age, children may not yet understand the relation of symptoms with the disease; or another presumption is that during the second application of questionnaire to students, a dengue outbreak was occurring in the community region, which possibly induced students to confuse the symptoms of both diseases. Studies show that diarrhea, anorexia, abdominal pain, nausea and vomiting are common symptoms between ascariasis and dengue[38, 39].

In this context, it should be noted that educational activities are important, but children need closer monitoring, which can be more effectively developed within the school and home environment. Health Education is inserted in this scenario as a prevention tool for intestinal parasites, but it should be made clear that it alone will not be able to change realities. Thus, individuals need to be motivated to apply what they have learned within their homes[27].

In analyzing these facts, it should be noted that Health Education strategies serve to improve knowledge by the population, however, the practice of these activities needs to be constant and must work with a whole multifactorial context, including the participation of main actors, such as parents, educators and health professionals, only then, there will be a change of reality. In this perspective, one cannot forget about the modifying factors that do not depend only on the conduct and actions of these protagonists, the public power also has its share of contribution, bring-

ing improvements to the population, especially with regard to needy communities, which do not have water and sanitary resources, therefore, it is known that such conditions are characterized as markers of socio-cultural delay[40].

Although reducing intestinal parasites is not only the responsibility of educators and health professionals, these latter can contribute significantly to important transformations in communities. It can be said that educational activities fill, at least partially, gaps left by the formal school teaching-learning process, proving to be an excellent tool[41].

As discussed above, it will not only be in an educational practice that habits will change, it is necessary that actions such as this be continuous to actually change behavior, and in the participation of parents the learning process becomes difficult, since for hygiene practices to be really effective, they need their insertion and collaboration.

Research shows that the family's partnership with the school is relevant to minimize the difficulties found in the school environment, adding knowledge to their undertaken realities[35,37]. Given that both family and school are responsible for their children's education, and they also handle all the food to be consumed by the family, means by which diseases can also be transmitted by intestinal parasites.

The application of questionnaires is essential to outline a reality, since giving elements to implement actions in the community, however, for changes in the educational process, it requires other instruments that include the active participation of parents, visualizing the practices in their homes and the interaction of teachers, who are inserted in the daily lives of these children[35,42]. Similarly, research conducted with students from a public school in the state of Espírito Santo, identified a significant correlation when parents accompany their children in school tasks[43].

On this premise, it is clear that health education activities in school life become essential for the development of activities for healthy habits and spread of ideas and information. The family health unit is an interesting initiative that can minimize the difficulties faced by education and health professionals. Thus, actions that are performed in school, as well as in health facilities may constitute a new perspective with a joint effort[44]. Participation of municipal managers in the organization of health promotion in health units together with the school becomes relevant [45, 46].

Thus, it is necessary that health education practices be continuous to really have an effect in the community. Ideally, schools should promote health, and teachers develop health education activities putting in place cross-cutting issues, as recommended in National Curricular Parameters[13]. It is important to highlight that the nurse

has a primary function through Health at School Program and among the strategies planned and offered in Primary Health Care, whether participating in these actions with playful and expository activities , being consistent with social reality, cultural and economic reality of the community[17].

The study used health promotion and prevention to enable the community to act with education and hygiene actions within their homes, in order to promote improvement in the quality of life of the interviewed children and adolescents, as well as their families[37]. Based on this, the subjects that the students did not understand very well, such as: symptoms, cycle and which organisms are worms, should be addressed in the coming years at school, taking into account the maturation of children's comprehension.

Thus, it is relevant to evaluate the prior knowledge of the interviewed students, expecting to appreciate their previous knowledge, making them feel an integral member of the teaching-learning process. Thus, it was possible to associate the empirical knowledge with a technical-scientific approach, built during the activities, explaining the students' discernment about intestinal parasites.

The limitations of this study include the reduction in population size, which started with 78 students and ended with 56 students. This reduction of participants demonstrates the lack of interest of the population in relation to the subject activities. Another fact, was the impossibility to analyze the impact of the educational intervention in the school hygiene practices in the long term. However, the study was relevant because it brings an important subject in the public health area, and can confirm in practice what has been revealed in the scientific environment, that is, that enteroparasitosis affects communities with low socioeconomic level and to ascertain how important it is to have the insertion of health education activities in schools.

CONCLUSIONS

Together, the results allow us to conclude that the promotion of strategies for health for intestinal parasites implemented in s school will facilitate knowledge of students about worms and how to prevent contagion. However, it is imperative to clarify that one activity is not enough to change habits in a particular group, it is necessary to develop activities ongoing to settle the learning process.

It is expected that this work will contribute to other health and education professionals in order to encourage the inclusion of educational practice on health in schools, because in this way, you can transform reality incorporating practices and habits that promote a less favorable environment for contamination of communicable diseases such as intestinal parasites, and generating a space that offers students and family members a better quality of life.

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