Chapter 154

Situational Strategic Planning and Environmental Education, for Elementary School students, intertwined in the teaching and learning of medical professionals: Experience report

https://doi.org/ 10.56238/devopinterscie-154

Bárbara Emeli Silva da Silva

Gabriel Lima Lôla

Gabriel Sebastião Pereira Baia de Almeida

Gabriela Yasmim Palha Guerra

Geovana dos Santos Costa

Emerson André Negrão do Nascimento

Waltair Maria Martins Pereira

ABSTRACT

The knowledge and use of medicinal plants included in Primary Health Care provide countless benefits for individuals, by facilitating access to effective cultural therapy. The curricular content of medical schools presents weaknesses in terms of a holistic view, which determines the training of professionals who are far from regional realities, centered on technicalities and medicalization for all types of illness. This experience report aimed to promote Environmental Education in a Municipal Elementary School, located in a community composed of 100% subnormal population, located in the capital of the state of Pará, through the implementation of a garden of medicinal plants called " Living Pharmacy". It was carried out during the teaching-learning process of Situational Strategic Planning, with the elaboration of an Intervention Project. Operations and programmed actions were carried out that ensured the initiation of discussions on environmental education and the exchange of seedlings between students' families and the school community.

The verification of the absorption of knowledge was carried out with the application of a test before and after the dialogued exposition, revealing that there was a growth of 28.8% in knowledge about the use of medicinal plants and a growth of 10.6% on the use of medicinal plants by the students' families. The learning of medical students about planning and carrying out health promotion actions was fully attended to, providing for the integration of the Federal University of Pará with the Elementary School and with the Community itself.

Keywords: Medicinal plants, Environmental health education, Medical education, Strategic planning.

1 INTRODUCTION

Environmental Education, supported by the creation of sustainable, permanent practices, allows society to acquire sensitivity in relation to the environment, directing it to use new practices, skills, knowledge, values and experiences, as it enables people to solve current and future environmental problems. future (Marinho et al., 2014). The training of medical professionals not linked to multidisciplinary issues, including Environmental Education, bases the process of the doctor-patient relationship on the biomedical and technical model, reducing the chances of developing skills and knowledge related to the phytotherapeutic potential of natural resources , therefore, it makes it difficult to guarantee access to basic therapeutic processes by following the opposite path to valuing the use of

phytotherapy and medicinal plants, in the treatment and monitoring of individuals in the Community (Mattos et al., 2018).

In Brazil, the use of phytotherapy and the cultivation of medicinal plants is not only a strategy to democratize access to health, but also a process of resistance to local identity and the construction of greater regional representation, in a country that is marked by socioeconomic and cultural differences between regions. This representativeness advocates, above all, against interregional inequalities and values the traditional and ancestral knowledge present in the different Communities of the country's regions (Rosinke et al., 2019).

Also, the use of medicinal plants helps to build a good doctor-patient relationship, since the patient feels culturally represented when using a medicinal plant with which he is familiar. Thus, in order to promote a more intimate dialogue between the medical community and society, a more proactive adoption of herbal medicines in Primary Health Care (PHC) becomes essential, thus constituting a dialogue in line with the culture and the demand of the assisted population, taking care to interact with the user about what he knows about medicinal plants and how he uses them, thus expanding the completeness of knowledge (Brasil, 2012).

The use of medicinal plants as therapy is widespread among traditional populations, guided mainly by popular knowledge about the medicinal properties of native species (Hasenclever et al., 2017). The rich plant diversity of the Amazon Region makes it possible for the different ethnic groups residing there to use medicinal plants from native species. The intimate relationship with these plants differs, above all, due to a network that intertwines knowledge and traditions of indigenous, caboclo and black origin, thus making the therapeutic use of countless species as part of the healing and ancestry process. (Pinto et al., 2014; Pires et al., 2020).

In the North region of Brazil, the use of medicinal plants in healing processes involves the preparation of homemade products whose forms of absorption consist of teas, syrups, ointments, salves and various liquid mixtures, as well as being supported by a preparation process that involves traditional knowledge. popularly disseminated (Oliveira et al., 2020).

It has been observed in comparative studies carried out in the northeastern region of Pará a tendency of reduction in the use of medicinal plants. In the municipality of Igarapé-Miri, in 2000, 85% of the resident population declared using medicines produced from medicinal plants, but in 2008, this percentage dropped by 25%, largely due to the transfer of the option for industrialized medicines (Pinto et al. ., 2014).

Among the widely used plant species with medicinal properties in the Amazon region, the following deserve mention: aloe vera, which contains vitamins A, C, D, E, calcium and amino acids as active substances, present both in the casing of the leaves, and in the gel inside the leaves, it is used as an anti-inflammatory and anti-bacterial agent (Joseph, 2010). Lemon balm (melissa officinalis) presents pharmacological principles that act, mainly, in the reduction of stress, functioning as a calming and

sedative, contributing to the improvement in the quality of sleep and in the control of anxiety, due to the increase in the levels of the inhibitory neurotransmitter GABA in the central nervous system, as well as for the pharmacological action recorded as an antioxidant, reducing cholesterol levels and acting in the control of dementia caused by Alzheimer's (Silva et al., 2021). Green mint (mentha spicata), which is widely used in popular medicine, in the pharmaceutical industry and in cosmetics, has a therapeutic action, pointed out in many studies due to the importance of antioxidants, antifungals and antispasmodics present in the plant's oils (Figueiredo et al., 2016). Pariri (Arrebidaea chica Verlot) has a rich and diverse chemical composition containing anisic acid, carajurin, tannins, assimilable iron and cyanocobalamin, with application in the treatment of uterine and ovarian inflammation, anemia, syphilis, leukemia, conjunctivitis, diarrhea, intestinal colic, psoriasis , tinea corporis, wounds and ulcers; it usually helps cancer patients in the treatment of anemia resulting from chemotherapy and also works as an excellent insect repellent, when used in the form of a paste and poultice (Barros, 2018).

From this perspective, even though species of flora with medicinal properties have a potential that ranges from stimulant, diuretic, laxative, expectorant, healing, anti-inflammatory, antiulcerogenic and even the ability to help fight anemia caused by chemotherapy treatments (Junior et al. , 2020; El Menyiy et al., 2022; Veiga et al., 2005; Zuber et al., 2016). The decrease in the presence of medicinal plants in the Community, whether in residential areas or in free fairs and popular markets, among other factors, signals the growth of the devaluation of traditional knowledge that may be being suffocated by the Pharmaceutical Industry (Maciel et al., 2002) .

In this context, with the aim of strengthening PHC care, valuing the culture of using medicinal plants and expanding the population's access to products and services of Integrative and Complementary Practices (PICS) in an effective, safe and multidisciplinary way, in 2017, the use of medicinal plants by the Health Assistance Network (RAS) was included in the National Policy on Integrative and Complementary Practices (PNPIC) with the publication of the National Policy on Medicinal and Herbal Plants (PNPMF) (Brasil, 2018) .

The PNPMF aims to guarantee the Brazilian population safe access and the rational use of medicinal and herbal plants, promoting the sustainable use of biodiversity and the development of the production chain. Farmácia Viva emerges, in this context, as the model of democratization of access to medicinal plants, aiming to provide assistance to Regional Communities interested in using them as a therapeutic resource, on a non-profit basis, as well as to scientifically develop the study of native medicinal species since the cultivation to the distribution of seedlings, manipulation of ointments, syrups and ointments (Bianchi et al., 2016).

The capacity to stimulate local production and the production of medicinal plant seedlings with quality control, composing light technologies, emerges as an advantage over other models, presenting itself, in this way, with the promotion of environmental and socioeconomic sustainability, valuing popular knowledge about the use of medicinal plants, contributing to the preservation of plant species. In addition,

it becomes a foundation for the democratization of Public Health by making medicinal plants available to the population and promoting training for the safe and rational use of phytotherapy (Depetris et al., 2020).

Obstacles to the consolidation of actions aimed at promoting medicinal plants in health services are permeated by the lack of contact with phytotherapy in the training of various health professionals, due to the absence of strategies for registering and monitoring clinical use species, and the low investment in studies on Brazilian medicinal plants. These obstacles determined that, until 2010, 85.3% of health professionals had no contact with any policy or program related to medicinal plants (Fontenele et al., 2013).

In this context, phytotherapy services and the cultivation of medicinal plants need the continuous support of managers in the health area, the correct training of the population for the planting of the species that will constitute the "Living Pharmacy", the increase of subsidies to maintain the development of projects focused on this theme and the emphasis on medicinal plants, during the medical graduation course, will provide sustainability for the promotion of the use of this light technology in an effective way (Antonio et al., 2013; Antonio et al., 2014).

This study, presented through an experience report lived by medical students at the Federal University of Pará (UFPA), was built through an Intervention Project (IP), based on Situational Strategic Planning (PES) (Artmann, 2000) , with the objective of promoting Environmental Education (EA) at the Municipal Elementary School Edson Luís (EMEF Edson Luís) through the implementation of a medicinal plant garden called "Farmácia Viva", which will enable the expansion of access for students from EMEF Edson Luís to medicinal plants and the promotion of the therapeutic use of the species from their families in the Riacho Doce Community, located in Bairro do Guamá, municipality of Belém, state of Pará.

2 METHODOLOGY

This is an experience report-type study, which took place during the teaching/learning process of the PES for medical students, with the planning and execution of health promotion actions, in the territory assigned to the ESF, located in a territory composed of 100% subnormal population.

Manuscripts organized in the form of experience reports bring a description of a certain fact of the individual experience or of a certain group/professionals about a certain situation. It is not an original research, however the exploratory characteristics are essential. Because it is a descriptive text, it is necessary to bring the details of the experience in detail, so that other people can also replicate it in their practices, or serve as inspiration for other professionals in the same area (Dos Santos et al., 2018; Cassarin & Porto, 2021). This method brings contributions to teaching, aiming at solving or minimizing the problems evidenced in practice (Cortes et al., 2018). The experience took place in the Riacho Doce Community, located in the neighborhood of Guamá, in the municipality of Belém, state of Pará. This Community makes up the area assigned to the ESF Riacho Doce, which has 2 teams composed of a

Doctor, 2 Nurses, 2 Nursing Technicians and 15 Community Health Agents (ACS). It is the practice scenario of the Longitudinal Axis of Comprehensive Health Care for the Individual, Family and Community (AIS) of the UFPA medical course.

The recognition of the territory, of the activities carried out by the ESF teams, the survey of health promotion actions on environmental education and on "Living Pharmacy", in each micro area, were carried out with the supervision of the teacher, during the practical classes of AIS, during the academic semester 2022.4. It was observed that the ESF team did not promote health promotion activities for the registered population and did not develop integrated work with EMEF Edson Luís.

The Nurse's narrative made it clear that it is the team's desire to implement a "Living Pharmacy" in the physical area of the ESF to work with the families of the Community on ways to distribute seedlings and encourage the use of medicinal plants, specifically through tea and of ointments.

The narratives of the School Director and Pedagogical Advisors made it clear that there is an intention to involve students in the construction of beds of legumes and medicinal plants, with the aim of stimulating, in children, proactive attitudes of environmental education and that these are taken for the family, providing, in a way, the greatest care and responsibility for the environment where they live.

The students of the third semester of the medical course at UFPA, in the curricular content of learning about the use of the PES, carried out the elaboration of an IP, starting with the bibliographical review on Environmental Education and on “Farmácia Viva”, expanding the knowledge about the characteristics, protocols and strategies for the use of medicinal plants in the context of PHC activities developed in the municipality of Belém, state of Pará. Subsequently, they carried out the execution of the planning of operations and health promotion actions following the PES approach, proposed by Matus and facilitated for execution at the local level, for the health area, by Artmann (2000) who offers the formulation of ideas divided into moments, bringing a dynamic vision of the planning process, which is characterized by the permanent interaction of phases or moments and by their constant resumption. Thus, with this context, the PES was developed obeying the four phases or moments for the technical-political processing of the problems, as specified: explanatory moment, normative moment, strategic moment and tactical-operational moment (Artmann, 2000).

Because it is an IP in the routine of the medical professional's teaching-learning process, and because it deals with the execution of health promotion activities for Elementary School students, there was no need for submission to the Ethics and Research Committee (ZIP CODE).

3 RESULTS

In the first moment called explanatory, in a storm of ideas, 15 problems that are present in the Community were selected: low promotion of planting medicinal plants; absence of EE training policies aimed at EMEF students Edson Luis; low rate of afforestation in the Community; lack of regular collection of household solid waste; lack of health education about the water body of the Igarapé do

Tucunduba; the high prevalence of stray animals throughout the Community; the marginalization of environmental practices in the school context; the low integration of the Community with UFPA; the lack of knowledge, by the ESF team and the Community itself, about the potential use of medicinal plants in the context of PHC; the lack of adequate urban planning in the territory assigned to the ESF; the rudimentary presence of traditional and rigid forms of teaching about EE; the silting up of the Igarapé do Tucunduba; the deforestation of riparian forest; the non-existent macro-drainage in some areas of the Igarapé do Tucunduba and the weak inspection of the sanitary surveillance on the trade of natural food.

Subsequently, the problems described were grouped according to the points of convergence, aligning them into four themes with great relevance for the Community, with the aim of reducing and organizing the result of the "Storm of Ideas". After reducing the ideas and defining the themes in "Pollution of rivers", "Accumulation of household solid waste", "Insufficient sanitary inspection" and "Low importance of Living Pharmacy", a comparison was made between these axes, with the quantification of values for the main actor, for the Community and for the ESF team, and also added, the comparison of the cost for the execution of the IP on these problems and the political cost, as well as the value of the effectiveness of the intervention and the impact on the quality of people's lives. This movement was carried out to analyze and carefully decide which of the themes could be adopted for the approach, by the social actors, in an appropriate way. In this way, the problem to be worked on was defined as "Low promotion of AE in the Riacho Doce Community, Bairro do Guamá, Belém, State of Pará".

Then, the conceptual descriptors were selected, based on the influencing factors frequently seen in the Community and in the bibliographic review, specified as follows: lack of an effective project aimed at promoting EE in Riacho Doce; 31% of the school population of Riacho Doce have access to plants with medicinal properties in the Community; 46% of the school population of Riacho Doce claim to have knowledge about the herbal potential of medicinal species classified as aloe, lemon balm, mint and pariri and 52% of the school population residing in the Community claimed to have confidence in the therapeutic efficacy of medicinal plants, making it clear the sources of verification of these indicators.

The descriptors were related to a causality network, involving immediate, intermediate and background causes, divided into different degrees of context, enabling the creation of a situational flowchart that fully addressed the highlighted problem and situated the governance of the social actors involved.

After organizing the causes and descriptors, the "critical node" was selected within the discussed problem, specified as follows: "Low promotion of EE in the Riacho Doce Community, due to the lack of an institutional educational project involving the areas of health, of education and the community". From this, the operations and actions to solve this problem were elaborated.

In the normative moment, second stage of the PES, the vectors for the resolution of the selected critical node were described. Continuing with the elaboration of the IP, the operations and actions that

aimed at positive results for the resolution of the selected "critical node" were defined. Thus, 3 operations were programmed, identified as follows: development of the teaching-learning process on the importance of medicinal plants and their applicability, to EMEF Edson Luis students; planting of 4 medicinal species, selected, in the garden of EMEF Edson Luís, and evaluation, through a quali-quantitative questionnaire, of the degree of learning of the students with the actions developed.

Later, at the strategic moment, the points needed to be fulfilled during the execution of the three proposed operations were defined and the motivation matrix of the actors involved in the execution of the actions was analyzed, with the objective of understanding the relationships of interest around the selected problem and define a strategy that would make the plan viable based on cooperation between the different actors. Next, the resources needed to carry out the operations were classified and listed using the organizational matrix, which allowed the authors to clearly list the resources required for each operation.

From the selection of the necessary resources, it was possible to carry out the simple budget analysis of the IP, with the survey of the values of all the resources used. Simultaneously, the source of funds was detailed, which mostly came from self-financing by the authors of this manuscript. The tactical-operational moment, the last stage of the PES, was defined as the set of ideas about planning and management that aimed at greater efficiency in the execution of actions, so that the results produced more impact on the selected problem. Control of the execution of operations and actions was carried out by the Director's Agenda, where each medical student was responsible for a set of actions, reporting temporal and financial control to the professor who monitored and evaluated the group's work.

Considering the low level of health promotion activity regarding EA, it was selected to work with the EMEF Edson Luís student community, on basic information on EA and on the cultivation of medicinal plants, called "Farmácia Viva".

Still in the IP elaboration phase, the students arranged for the collection of 5-liter plastic containers of bleach, which were sanitized and suitable for planting medicinal plant seedlings, in a movement to provide opportunities for reuse and encourage the reuse of material that would be disposed of as household solid waste, thus printing the first part of the movement of information, communication and health education on AE.

Later, the seedlings of the 4 species of medicinal plants were provided, having been carefully selected plants that are used by the population of Pará, composing the culture mainly of the peoples of the forests and waters and of the quilombola peoples.

The activities were carried out for 99 children aged between 8 and 12 years old, 56 male students and 44 female students. Students from a 3rd year class, two 4th year classes and a 5th grade class of Elementary School at the school where the project was developed participated.

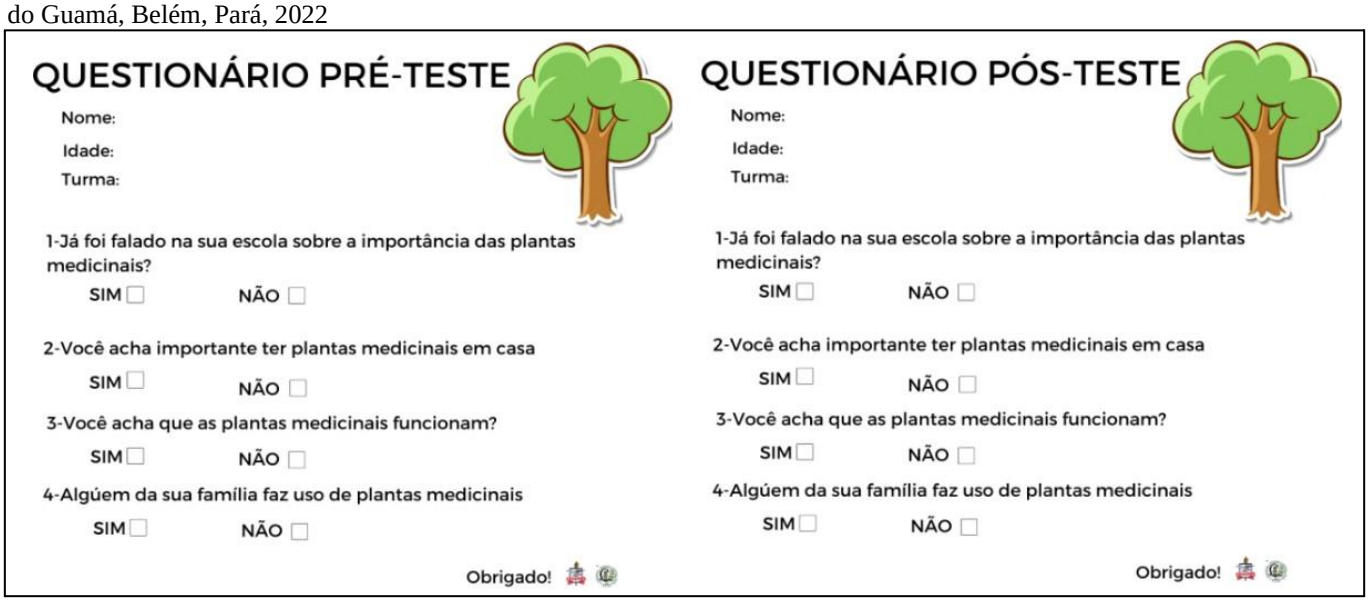
The first stage had two activities, starting with the application of the pre-test form, described in the methodology (Figure 1). Then, as a second activity, a dialogued exposition on EE was carried out,

using, as a methodological instrument to facilitate the dialogue, the banner created by medical students under the supervision of the professor (Figure 2).

The second moment was the tasting of mint tea and lemon balm tea for the children, encouraging them to identify the flavors, and explaining that in Pará culture, these teas are used to reduce abdominal pain, produced by the accumulation of of gases, and to improve the quality of sleep, respectively (Figure 3).

Subsequently, the four species of medicinal plants selected were subdivided among the groups worked on and the students were directed to the School's garden, where, with the help of the medical students, they divided up to place the black soil in the vessel that served as a vase. , position the seedling on the terra preta deposited in the container, cover the roots of the plant and complete the amount of soil. Afterwards, they watered the planted seedlings and arranged the containers in a shaded area. During the execution of this activity, the students were reminded of the therapeutic use of the species that were being planted and the children not only remembered, but also interacted, complementing the information considering that their families cultivate some of these species and use them to solve some health problems. health in their daily lives (Figure 4).

Figure 1 – Pre-test and post-test questionnaire on EE, applied to EMEF Edson Luís students, Riacho Doce Community, Bairro do Guamá, Belém, Pará, 2022



Source: Prepared by the authors (2022).

PRE-TEST QUESTIONNAIRE
Name:
Age:
Class:
1- Has your school already discussed the importance of medicinal plants?
YES/ NO
2 - Do you think it is important to have medicinal plants at home?
YES / NO
3 - Do you think medicinal plants work?
YES / NO
4 - Does anyone in your family use medicinal plants?
YES / NO

POST-TEST QUESTIONNAIRE
Name:
Age:
Class:
1- Has your school already discussed the importance of medicinal plants?
YES / NO
2 - Do you think it is important to have medicinal plants at home?
YES / NO
3 - Do you think medicinal plants work?
YES / NO
4 - Does anyone in your family use medicinal plants?

In Figure 1, the authors call attention to the objectivity of the questions represented by the synthetic and closed form, with the answer alternatives presented in a dichotomous way to mark the answers to each question asked.

Figure 2 – Banner about EA and "Farmácia Viva", used as a facilitator of dialogue with EMEF Edson Luís students. Riacho Doce Community, Guamá District, Belém, Pará, 2022.

Source: Prepared by the authors (2022).

In Figure 2, you can see the species selected for planting, a fact that facilitated the attention of the students and led them to record the image of the species at the same time that it brought them closer to the next step, which was planting the seedlings. It can also be observed that the division, in the banner, of the subjects “Environmental Education” and “Living Pharmacy”, also facilitated the visibility and interest of the students.

Figure 3 – Students tasting mint tea and lemon balm tea at EMEF Edson Luís. Riacho Doce Community, Guamá District, Belém, Pará, 2022.

Source: Photographic collection of the authors (2022).

In Figure 3, students from one of the groups worked can be seen tasting the tea. This action was designed to encourage students to adhere to all the processes involved in the development of the project. It was also clear that with the presence of "Farmácia Viva" at the School, the teas can be produced by the School's own kitchen and appear on the menu of the students' meals, on the occasion of the meal carried out in the daily life of the School.

Figure 4 – Sequence of records in which students prepare the pot with terra preta in the EMEF garden (1), place the plant in the pots (2), cover the roots of the species with terra preta and fertilizer (3) and water the planted seedlings (4). EMEF Edson Luis. Riacho Doce Community, Guamá District, Belém, Pará, 2022

Source: Photographic collection of the authors (2022).

In the sequence of photos shown in Figure 4, attention is drawn to the involvement of students and the step-by-step process of planting seedlings.

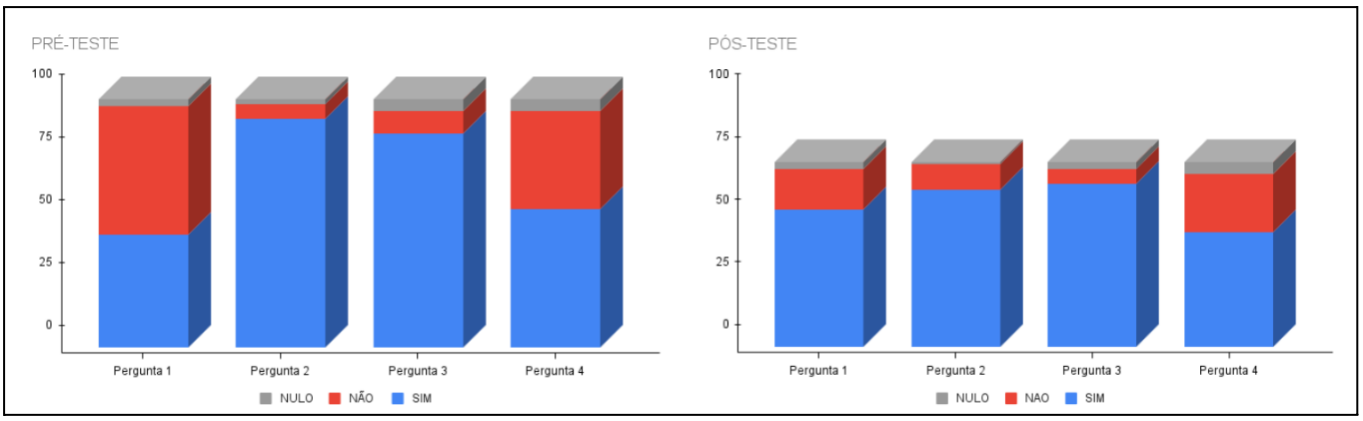
Figure 5 – Containers with medicinal plant seedlings, identified, organized and arranged in a shaded environment in the garden. EMEF Edson Luis. Riacho Doce Community, Guamá District, Belém, Pará, 2022.

Source: Photographic collection of the authors (2022).

In this figure number 5, the authors draw attention to the visibility of the reused containers, and the identification of the containers where the seedlings were planted, as well as the shaded space, indicated by the EMEF Edson Luís students themselves, to accommodate the seedlings.

The result of the pre and post tests, pointed out that the knowledge about medicinal plants acquired by the students of the School, presented a growth of 28.8%, going from 45.5% before the dialogue to 74.3% of students knowing about the subject. On the question that dealt with the knowledge of the importance of medicinal plants at home, there was a decrease of 6.8%, since the affirmative went from 91.9% to 85.1%. Regarding the knowledge that medicinal plants work to treat some symptoms, it was observed that the growth of affirmative answers was 1.9%, going from 85.9% to 87.8%. And, finally, regarding the knowledge that families use medicinal plants, there was a percentage increase in positive responses, from 55.6% to 66.2%, and a reduction in negative responses from 39.3% to 31.1% (Figure 6).

Figure 6 – Proporcionalidade das respostas às perguntas realizadas durante o pré-teste e o pós-teste, aplicados aos alunos da EMEF Edson Luís. Comunidade Riacho Doce, Bairro do Guamá, Belém, Pará, 2022.



Caption: Question 1: Has your school already discussed the importance of medicinal plants? Question 2: Do you think it is important to have medicinal plants at home? Question 3: Do you think medicinal plants work? Question 4: Does anyone in your family use medicinal plants?

Source: Prepared by the authors (2022).

The authors draw attention to the observation that should be given to Figure 6, regarding the identification of the potential growth of responses after the dialogued exposition, as the percentage of "yes" as an answer to question 1 goes up and as the percentage of "yes" in response to question 1 goes down. percentage of "no" in question 4.

4 DISCUSSION

The intervention carried out at EMEF Edson Luís was an experience of integrating the knowledge acquired by UFPA medical students and the Community, represented by the students of the School, which belongs to the region surrounding UFPA. The importance of interdisciplinary and inter-institutional activity was highlighted for the good training of medical professionals, in particular, within the scope of the health team, since it allowed for a better understanding of the territory in which they work and the Social Determinants of Health (DSS), parameters of great importance for understanding the population being assisted (Buss & Filho, 2007).

With the practice that took place at EMEF Edson Luís, it was possible to analyze the DSS in the most external layers, which involve socioeconomic, cultural, general environmental, life and work conditions, in addition to social and community networks that are intertwined in this Community. The analysis focused on the DSS, which encompasses the environment, provided information on the precariousness of basic sanitation made visible by the accumulation of household solid waste in all corners of the passages, hanging from the fences of the land, on the public lighting pole and even on the bed of Igarapé Tucunduba, both due to the lack of adequate spaces for the temporary disposal of this waste, and the fragility of teaching environmental education in the area, increasing the population's exposure to diseases disseminated through contact with contaminating agents naturally present in household biological waste (Mucelin & Bellini, 2008).

Also, the low level of afforestation was detected in the physical territory of the Community, with few species of flora in the area due to the constant growth of construction of houses without urban planning, linked to this, the low amount of medicinal plants in gardens and backyards, whose presence was only perceptible by the presence of two popular species, pariri and lemon balm, planted in front of 2 residences. The existence of small plantations of medicinal species in these houses, despite the urban breakdown and the low promotion of environmental education, demonstrated the resistance of traditional knowledge and the population's interest in preserving the knowledge acquired about medicinal plants (Rosinke et al., 2019) .

Ways to follow were proposed to face these problems, with the creation of a “Living Pharmacy”, with the possible community use by students and teachers of medicinal plants, to help in the treatment of illnesses. The reuse of containers for planting seedlings demonstrated the possibility of reducing the production of household solid waste and installing a sustainability memory with the potential to modify, from a social point of view, the problem situation found in the territory (Custódio et al., 2020).

The children who participated in the actions at the School, with the dialogued exposition and the planting of seedlings, were aged between 8 and 12 years old, and were attending the third, fourth and fifth years of Elementary School I, an age group that is fundamental not only for the curriculum formation, but also for the construction of citizenship. The School as a place that guarantees the rights, guaranteed by the Federal Constitution of 1988, is something that transcends the pedagogical function of this space and enters the sphere of citizenship. This is due to the fact that the School provides a learning environment, making the student aware of their rights and duties in society, as well as the opportunity to coexist in different groups. The citizen's role in respecting and preserving the environment are important guidelines to be addressed in schools, where the formation of environmental awareness in children, who are attending Elementary School I, becomes essential for the implementation of the institution of paper social status of each individual (Santos et al., 2020).

Medical students learned that to work with students of different age groups, it is important to use methodologies whose results bring greater security, so that the teaching-learning process is complete and adequate. With this experience, there was a perception of the need to use strategies other than dialogued exposition, which created a fragile bond between medical students and students at the School, allowing the reflection that methodologies that bring playfulness, such as theatricalization and storytelling, bring more bonding and provide the fixation of students' attention and learning takes place in a light and objective way (Oliveira, 2022).

It was noticed that with the planting of seedlings, of the selected species, the interest of the students was much greater, including a better use of learning during the creation of “Farmácia Viva”. The report of some students on the use of medicinal plants in the family demonstrated the cultural importance that these selected species bring to the memory of these students. It was also observed that the term “medicinal plant” was unknown by the students, however, with the dialogued exposition, the connection of the

concept with the experiences previously lived, enabling the understanding of the term from the experience of each child, having been reinforced by the reports that in their homes there are other medicinal plants in addition to the 4 species presented in this educational experience. This fact contributed to the idea that an effective pedagogy is based on different types of knowledge, whether acquired in an academic environment or not, making the experience, customs and experience of children, with regard to medicinal plants, function as pillars for sustaining knowledge and a way of life that takes care of the environment in which they live (Santos & Leal, 2018).

The application of pre and post test questionnaires proved to be an effective metric instrument for the objective analysis of students' perceptions about the presence of medicinal plants and the importance of environmental education in the environment in which they are inserted. Among the classes with which the study was carried out, it was observed in the more advanced school grades (fourth and fifth years of Elementary School I) greater autonomy of the students to answer the questionnaires individually, in the classes whose students were of younger school age (third year of Elementary School I), on the other hand, guided application became necessary in which, due to the young age of the students and the incomplete literacy process, in these classes, individual monitoring was required by medical students from reading and guiding the questions so that the questionnaire could be answered clearly. The application of questionnaires consisted of a viable and relevant technique to be used to deal with problems whose research objects correspond to questions of an empirical nature, involving opinion, perception, positioning and preferences of students (Chaer et al., 2012).

With regard to the data collected by the question “Has the importance of medicinal plants been discussed at your school?” It was noticed that a considerable number of students got their first contact with the concept of EE through action, even though EE is assured in the teaching of Brazilian public schools. Based on this experience, it is possible to affirm that the dialogued exposition carried out, in which active teaching and sharing of experiences were valued, and the practical demonstration of the use of medicinal plants with the tasting of teas, were essential for this contact. When observing the positive and enthusiastic reactions of the School's professors, who participated in the project, helping medical students in interactions with students, it was noticeable the need for integration between UFPA and EMEF Edson Luís, creating a partnership and expanding the interdisciplinary team , where the teaching-learning process can go both ways and the contents of health promotion and disease prevention constitute daily activities at the School. In this way, it was perceived that academic extension activities are fundamental to make the University's articulation with society in general, this being the opportunity to concretely provide, for the population, the scientific knowledge produced in the academic environment, with the objective of to highlight the relationship between EE and Health, as well as to consolidate the social function of the University in the municipality of Belém (Andrade et al., 2019).

The 6% reduction in positive responses collected in the pre-test (91.9%) and post-test (85.1%) for the question "Do you think it's important to have medicinal plants at home?" “Farmácia Viva” at EMEF,

followed by the emphasis given during planting and the permission given to students to use medicinal plants when necessary, may have provoked the perception that once the plants would be available at "Farmácia Viva" at EMEF , it was not essential to plant them in their private gardens and backyards. Although the School's "Living Pharmacy" was built successfully, it is essential to understand that the definitive implantation of species of medicinal plants and the wide propagation of the present benefits in these, it permeates the democratic and universal access to them, therefore the existence of medicinal plants in the students' family context is a foundation of the successful teaching of environmental education (Giassi et al., 2016).

The data obtained with the application of the question "Do you think that medicinal plants work?" allowed us to see that the increase in the percentage of positive responses was a consequence of the dialogue on aspects of EE, with a focus on the application of "Farmácia Viva" and the use of medicinal plants by children. It was possible to highlight that the use of the banner and the planting of species of medicinal plants, allowed a closer contact with the children, making this knowledge shared in a practical way during the activities. This experience of active learning methodology enabled the development of new skills, such as initiative, essential for students to carry out similar plantations at home. Creativity, necessary for the reuse of materials that would be discarded as solid waste, reflective criticality to observe the relationship between health and environment in the territory and, above all, cooperation to work as a team and strengthen the community bias were expressed and tended to to be strengthened. In this context, medical students acted as advisors, supervisors and facilitators of the process (Lovato et al., 2018).

From the quantification of data collected with the question "Does anyone in your family use medicinal plants?", an increase in positive responses was observed when comparing the pre and post-test. In this sense, such an increase may be related to the possibility that students have promoted knowledge about EE and the use of medicinal plants for their families. In this way, the information transmitted about the indication of ways to use and the reliability of "Farmácia Viva" proved to be effective in increasing adherence to the use of medicinal plants by the students' families. It was perceived that there is, established, a dialogical relationship between family and school, in which the knowledge acquired by students permeates to the family environment, thus facilitating more and more, the educational performance of children with regard to EE, as well as cooperating for the full development of social, psychological and intellectual skills (Alves et al., 2019).

5 CONCLUSION

The teaching-learning process about SEP for medical students was fully implemented, providing experience with management and teamwork, making it clear that health promotion needs to be carried out permanently by the FHS teams in communion with the School in the assigned area and the Community itself.

This teaching-learning experience contributed to the Community of that territory, by implementing the "Farmácia Viva" at EMEF Edson Luís, facilitating access to alternative and safe therapeutic options, in addition to being successful in the proposal to increase the participation of the Community in the promotion of AE, to strengthen health promotion and disease prevention programs and to contribute to the choice of safe treatments for individuals in this Community. It became evident to UFPA medical students that this type of experience should be stimulated and continued, including expanding it to the entire Administrative District of Guamá (D'AGUA), the territorial area of the municipality of Belém assigned to UFPA, for the implementation of practices by students of courses in the health area.

The perception that teaching-learning practices can be integrated into the activities of the Health at School Program (PSE), rekindles the importance of training medical professionals, centered on teamwork with interdisciplinary and inter-institutional integration, aiming to increase the resolution of the problems identified in the Communities, reducing the demand for the levels of greater complexity in the RAS, given that the activities of health promotion and disease prevention, the PHC will be much more effective in the SUS.

Experience reports of the teaching-learning process of the medical professional centered on active methodologies, as well as the experience of students in carrying out health promotion activities, in Communities where they exercise practical learning, need to be written and published since they help in expanding the forms of knowledge of pedagogical paths, articulations, inter-institutional integration and multidisciplinarity that are necessary in the practical exercise of professionals in the health area, especially the medical professional. Other experiences need to be written and published, covering the formulation of products such as ointments, syrups and even soaps, as long as the teaching-learning experience integrates the areas of teaching pharmacy and medicine.

REFERENCES

Alves da Costa, M. A., Carneiro da Silva, F. M., & Da Silva Souza, D. (2019). Parceria entre escola e família na formação integral da criança. Práticas Educativas, Memórias E Oralidades - Rev. Pemo, 1(1).

Antonio, G. D., Tesser, C. D., & Moretti-Pires, R. O. (2013). Contributions of medicinal plants to care and health promotion in primary healthcare. Interface-Comunicação, Saúde, Educação, 17, 615-633.

Antonio, G. D., Tesser, C. D., & Moretti-Pires, R. O. (2014). Fitoterapia na atenção primária à saúde. Revista de Saúde Pública, 48, 541-553.

Artmann, E. (2000). O planejamento estratégico situacional no nível local: um instrumento a favor da visão multissetorial. Cadernos da Oficina Social, 3(98), 119.

Barros, A. S. M. (2018). Investigação científica da atividade medicinal da espécie Arrabidaea chica (Pariri). Monografias.ufma.br.

Bianchi, R. V., Behrens, M., & Soares, A. M. (2016). Farmácia da natureza: um modelo eficiente de farmácia viva. Revista Fitos, 10(1), 73-76.

Brasil, & Ministério da Saúde. (2012). Práticas Integrativas e Complementares. Plantas Medicinais e Fitoterapia na Atenção Básica. Normas e Manuais Técnicos – Caderno de Atenção Básica, 31.

Brasil, & Ministério da Saúde. (2018). Política Nacional de Práticas Integrativas e Complementares no SUS. Fitoterapia. Buss, P. M., & Pellegrini Filho, A. (2007). A saúde e seus determinantes sociais. Physis: revista de saúde coletiva, 17, 77-93.

Chaer, G., Diniz, R. R. P., & Ribeiro, E. A. (2012). A técnica do questionário na pesquisa educacional. Revista Evidência, 7(7).

Casarin, S.T., & Porto, A.R. (2021). Relato de Experiência e Estudo de Caso: algumas considerações. Journal of Nursing and Health, 11(2):e2111221998. https://periodicos.ufpel.edu.br/ojs2/index.php/enfermagem/article/view/21998

Cortes, L.F., Padoin, S.M.M., & Berbel, N.A.N. (2018). Problematization Methodology as Convergent Healthcare Research: práxis proposal in research. Rev Bras Enferm, 71(2):440-5. http://dx.doi.org/10.1590/0034-7167-2016-0362

Custódio, L. A. F., Vieira, C. M., & Francischetti, I. (2020). A dimensão social na formação médica: o contexto de vida na aprendizagem baseada em problemas. Trabalho, Educação E Saúde, 18(3).

Depetris, N. J., Machado, V., Chechetto, F., Moraes, F., & Galvão, P. (2020). Perfil da prescrição de fitoterápicos na farmácia ensino-farmácia viva (fait/sms) de itapeva/sp no sus. Revista científica eletrônica de ciências aplicadas da fait.

Dos Santos, B. P., Feijó, A. M., Viegas, A. da C., Lise, F., & Schwartz, E. (2018). Classificação das pesquisas. In F. Lise, B. M. Souza, E. Schwartz, & F. R. M. Garcia (Orgs.). Etapas da construção científica: da curiosidade acadêmica à publicação dos resultados. Pelotas: Ed. UFPel. p. 61-73. http://guaiaca.ufpel.edu.br/handle/prefix/4171El Menyiy, N., Mrabti, H. N., El Omari, N., Bakili, A. E., Bakrim, S., Mekkaoui, M., ... & Bouyahya, A. (2022). Medicinal Uses, Phytochemistry, Pharmacology, and Toxicology of Mentha spicata. Evidence-Based Complementary and Alternative Medicine.

Figueiredo, C. H. A. de, Alencar, M. C. B. de, Souza, K. A. de, Pedroza, A. P., Silva, C. F. da, Ribeiro, S. R. S., Sousa Neto, O. L. de, & Roberto, S. B. de A. (2016). A Utilização Medicinal da Mentha spp. Informativo Técnico Do Semiárido, 10(2), 16 - 20.

Fontenele, R. P., Sousa, D. M. P. D., Carvalho, A. L. M., & Oliveira, F. D. A. (2013). Fitoterapia na Atenção Básica: olhares dos gestores e profissionais da Estratégia Saúde da Família de Teresina (PI), Brasil. Ciência & Saúde Coletiva, 18, 2385-2394.

Giassi, M. G., Dajori, J. F., Machado, A. C., & Martins, M. C. (2016). AMBIENTE E CIDADANIA: EDUCAÇÃO AMBIENTAL NAS ESCOLAS. Revista de Extensão, 1(1), 24–32. https://doi.org/10.18616/re.v1i1.2461

Hasenclever, L., Paranhos, J., Costa, C. R., Cunha, G., & Vieira, D. (2017). A indústria de fitoterápicos brasileira: desafios e oportunidades. Ciência & Saúde Coletiva, 22(8), 2559-2569.

Joseph, B., & Justin, S. (2010). PHARMACOGNOSTIC AND PHYTOCHEMICAL PROPERTIES OF ALOE VERA LINN -AN OVERVIEW. International Journal of Pharmaceutical Sciences Review and Research, 4(2).

Júnior, F. P., Aciole, I. H. M., de Oliveira Souza, A. K., Alves, T. W. B., & de Souza, J. B. P. (2020). Uso de babosa (aloe vera l.) como pró–cicatrizante em diferentes formas farmacêuticas: uma revisão integrativa. Revista de Ciências Médicas e Biológicas, 19(2), 347-352.

Lopes, D. O., De Andrade, R. M. M., & Morosini, M. C. (2019). A extensão universitária na perspectiva da universidade do encontro. Repositorio.pucrs.br. Lovato, F. L., Michelotti, A., & da Silva Loreto, E. L. (2018). Metodologias ativas de aprendizagem: uma breve revisão. Acta Scientiae, 20(2).

Maciel, M. A. M., Pinto, A. C., Veiga Jr, V. F., Grynberg, N. F., & Echevarria, A. (2002). Plantas medicinais: a necessidade de estudos multidisciplinares. Química nova, 25, 429-438.

Marinho, A. A., Marques, M. L. A. P., Silva, A. F. da, Araújo, J. E. Q., Queiroz, T. H. da S., & Almeida, I. D. A. de. (2014). A educação ambiental na formação da consciência ecológica. Caderno de Graduação - Ciências Exatas E Tecnológicas - UNIT - ALAGOAS, 1(1), 11–18.

Mattos, G., Camargo, A., Sousa, C. A. D., & Zeni, A. L. B. (2018). Plantas medicinais e fitoterápicos na Atenção Primária em Saúde: percepção dos profissionais. Ciência & Saúde Coletiva, 23, 3735-3744.

Mucelin, C. A., & Bellini, M. (2008). Lixo e impactos ambientais perceptíveis no ecossistema urbano. Sociedade & Natureza, 20(1), 111–124.

Oliveira, S. H. D. S., Soares, M. J. G. O., & Rocha, P. D. S. (2010). Uso de cobertura com colágeno e aloe vera no tratamento de ferida isquêmica: estudo de caso. Revista da Escola de Enfermagem da USP, 44, 346-351.

Oliveira, S. R. L. (2022). Aspectos do lúdico no processo de ensino-aprendizagem no ensino fundamental: uma revisão de literatura. Brazilian Journal of Development, 8(5), 38933-38953.

Pinto, L. N., de Oliveira Flor, A. S. S., & Barbosa, W. L. R. (2014). Fitoterapia popular na Amazônia Paraense: uma abordagem no município de Igarapé-Miri, estado do Pará nos anos de 2000 e 2008. Revista de Ciências Farmacêuticas Básica e Aplicada, 35(2).

Pires, J. O., Léda, P. H. D. O., Oliveira, D. R. D., Coelho-Ferreira, M. R., Scher, I. S., & Talgatti, D. M. (2020). Etnobotânica aplicada à seleção de espécies nativas amazônicas como subsídio à regionalização da fitoterapia no SUS: município de Oriximiná–PA, Brasil.

Rosinke, P., Troian, ML, Hardoin, EL, & Neto, GG (2019). Preservação dos saberes tradicionais no exemplo do projeto erva medicinal – farmácia viva: escola Florestan Fernandes, em Cláudia (MT). REAMEC - Rede Amazônica de Educação em Ciências e Matemática, 7 (1), 268–287.

Santos, D. M., & Leal, N. M. (2018). A pedagogia de projetos e sua relevância como práxis pedagógica e instrumento de avaliação inovadora no processo de ensino aprendizagem. Revista Científica da FASETE, 2, 81-96.

Santos, L. L. dos, Vieira, M. A. B., Marques, M. M. M., Sousa, H. H. de L., & Duque, A. N. F. (2020). O direito à educação na Constituição Cidadã (1988): a luz dos artigos 6o, 205, 206 e 208. Research, Society and Development, 9(10).

Silva, M. J. da, Gomes, M. L. B., & Siqueira, L. da P. (2021). Tratamento alternativo para ansiedade à base da planta medicinal Melissa Officinalis (erva-cidreira) – uma revisão de literatura. Research, Society and Development, 10(14), e532101422349.

Veiga Junior, V. F., Pinto, A. C., & Maciel, M. A. M. (2005). Plantas medicinais: cura segura? Química Nova, 28(3), 519–528.

Zuber, J., Alexandre, J., & Carneiro, J. (2016). Considerações sobre o tema da Farmácia Viva, os fitoterápicos mais utilizados. 14o Seminário de Pesquisa/Seminário de iniciação científica.