

University Extension and Education in/for Health: knowledge, prevention and control of syphilis

Extensão Universitária e Educação em/para Saúde: conhecimento, prevenção e controle da sífilis

Extensión Universitaria y Educación en / para la Salud: conocimiento, prevención y control de la sífilis

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Adriana Maria da Silva

ORCID: <https://orcid.org/0000-0001-9942-5372>
Universidade Federal de Pernambuco, Brasil
E-mail: adriana.msilva8@ufpe.br

Emily Gabriele Marques Diniz

ORCID: <https://orcid.org/0000-0001-6843-2561>
Universidade Federal de Pernambuco, Brasil
E-mail: emilygabriele1999@gmail.com

Clênio Silva da Cruz

ORCID: <https://orcid.org/0000-0002-6690-2117>
Universidade Federal de Pernambuco, Brasil
E-mail: cleniobep@gmail.com

Paulo Henrique Valença Nunes

ORCID: <https://orcid.org/0000-0003-4048-580X>
Universidade Federal de Pernambuco, Brasil
E-mail: p_henriqu@hotmai.com

Wilza Wanessa Melo Franca

ORCID: <https://orcid.org/0000-0001-9530-8371>
Universidade Federal de Pernambuco, Brasil
E-mail: wilza.franca@ufpe.br

João Victor Ritinto da Rocha

ORCID: <https://orcid.org/0000-0003-4336-4448>
Universidade Federal de Pernambuco, Brasil
E-mail: joao.ritinto@ufpe.br

Débora Verônica Sarmiento Pereira da Silva

ORCID: <https://orcid.org/0000-0001-7957-3896>
Universidade Federal de Pernambuco, Brasil
E-mail: deboravsarmiento@gmail.com

Renan Andrade Fernandes de Souza

ORCID: <https://orcid.org/0000-0003-2612-8208>
Universidade Federal de Pernambuco, Brasil
E-mail: renan.fernandes@ufpe.br

José Josenildo Batista

ORCID: <https://orcid.org/0000-0002-9871-7194>
Universidade Federal de Pernambuco, Brasil
E-mail: josenilobatista06@gmail.com

Alcilene de Lima Aires

ORCID: <https://orcid.org/0000-0002-4043-3076>
Universidade de Pernambuco, Brasil
E-mail: alcileneaires2011@hotmail.com

Anekécia Lauro da Silva

ORCID: <https://orcid.org/0000-0003-2778-1460>
Universidade Federal do Vale do São Francisco, Brasil
E-mail: anekecia.lauro@univasf.edu.br

Wheverton Ricardo Correia do Nascimento

ORCID: <https://orcid.org/0000-0003-0434-4831>
Universidade Federal de Pernambuco, Brasil
E-mail: wheverton.nascimento@ufpe.br

Hianna Arely Milca Fagundes Silva

ORCID: <https://orcid.org/0000-0001-8220-3458>
Universidade Federal de Pernambuco, Brasil
E-mail: hiannaamfs@gmail.com

Hallysson Douglas Andrade de Araújo

ORCID: <https://orcid.org/0000-0001-5150-1655>
Universidade Federal de Pernambuco, Brasil
E-mail: douglas.ufpe29@gmail.com

Mônica Camelo Pessoa de Azevedo Albuquerque

ORCID: <https://orcid.org/0000-0002-2882-6563>

Universidade Federal de Pernambuco, Brasil

E-mail: monica.aalbuquerque@ufpe.br

André de Lima Aires

ORCID: <https://orcid.org/0000-0001-9283-1466>

Universidade Federal de Pernambuco, Brasil

E-mail: andre.laires@ufpe.br

Abstract

The university extension activities are a form of interaction between the university and the community, and based on it, different health promotion activities can be developed, as the sustainable development of vulnerable communities for example. Syphilis is a sexually transmitted infection that can present asymptomatic or symptomatic forms and has affected countless people around the world. In Brazil, the number of infected people has increased over the years, even with the SUS providing treatment, which is quite worrying due to congenital syphilis. With the growth of infected people in the country, especially in the state of Pernambuco, it is essential to fight syphilis through preventive actions. Teaching and learning strategies such as health education demonstrate the transforming role of university extension for undergraduates and society, aiming to contribute to the academic training of undergraduates through the exchange of knowledge. The activities to raise awareness about syphilis were held in a conversation circle during the Science and Technology Week, CECINE-UFPE/2019, and in the Parasitology course at UFPE. At the end of each exhibition, information leaflets and condoms were also distributed. At first, the students were shy when they saw illustrated panels with syphilitic lesions and condoms on the benches. However, as the interaction progressed, they were amazed by the epidemiology, exposing their doubts and prior knowledge on the subject. With each new action, the extension workers understood more about the social commitment and demonstrated more security. Thus, the project contributes to the academic training of undergraduates, providing the development of educational practices with students, who become agents for disseminating knowledge in the fight and prevention of syphilis in their social spaces.

Keywords: University extension; Health education; Students; Syphilis.

Resumo

A extensão universitária é uma forma de interação entre a universidade e a comunidade, e, a partir dela, é possível desenvolver atividades de promoção da saúde, a exemplo do desenvolvimento sustentável de comunidades vulneráveis. A sífilis é uma infecção sexualmente transmissível que pode se apresentar de forma assintomática ou sintomática e tem afetado inúmeras pessoas no mundo. No Brasil o número de infectados tem aumentado com o decorrer dos anos, mesmo o SUS disponibilizando tratamento, sendo bastante preocupante devido a sífilis congênita. Com o crescimento de infectados no país, especialmente em Pernambuco, é essencial o combate a sífilis através de ações preventivas como educação em saúde, uma estratégia de ensino e aprendizagem, demonstrando o papel transformador da extensão universitária para os graduandos e sociedade, objetivando contribuir para formação acadêmica dos graduandos através da troca de conhecimento. As atividades de conscientização sobre sífilis foram realizadas em roda de conversa durante a Semana de Ciência e Tecnologia, CECINE-UFPE/2019 e na disciplina de Parasitologia da UFPE, ao final de cada exposição foram distribuídos folhetos informativos e preservativos. A princípio os escolares se mostravam tímidos ao observarem painéis com ilustrações das lesões sífilíticas e preservativos nas bancadas, mas com o decorrer da interação, ficaram espantados com a epidemiologia, começando a expor suas dúvidas e conhecimento prévio sobre o tema. A cada nova ação, os extensionistas compreendiam mais o compromisso social e demonstravam mais segurança. Assim, o projeto contribui para formação acadêmica dos graduandos, proporcionando o desenvolvimento de práticas educativas, juntamente os escolares que se tornam agentes disseminadoras do conhecimento no combate e prevenção da sífilis em seus espaços sociais.

Palavras-chave: Extensão universitária; Educação em saúde; Estudantes; Sífilis.

Resumen

La extensión universitaria es una forma de interacción entre la universidad y la comunidad, a partir de la cual es posible desarrollar actividades de promoción de la salud, por ejemplo, el desarrollo sostenible de comunidades vulnerables. La sífilis es una infección de transmisión sexual que puede presentarse de forma asintomática o sintomática y ha afectado a innumerables personas en todo el mundo. En Brasil, el número de infectados ha aumentado con los años, incluso con el SUS brindando tratamiento, lo cual es bastante preocupante debido a la sífilis congénita. Con el crecimiento de personas infectadas en el país, especialmente en el estado de Pernambuco, es fundamental combatir la sífilis a través de acciones preventivas. Las estrategias de enseñanza y aprendizaje como la educación para la salud demuestran el papel transformador de la extensión universitaria para los estudiantes y la sociedad, con el objetivo de contribuir a la formación académica de los estudiantes a través del intercambio de conocimientos. Las actividades de sensibilización sobre la sífilis se realizaron en un círculo de conversación durante la Semana de la Ciencia y la Tecnología, CECINE-UFPE/2019, y en el curso de Parasitología de la UFPE. Al final de cada exposición, también se distribuyeron folletos informativos y condones. Al principio, los estudiantes se mostraron tímidos al ver paneles ilustrados con lesiones

sifilíticas y condones en los bancos. Sin embargo, a medida que avanzaba la interacción, quedaron asombrados por la epidemiología, exponiendo sus dudas y conocimientos previos sobre el tema. Con cada nueva acción, los extensionistas entendieron más sobre el compromiso social y demostraron más seguridad. Así, el proyecto contribuye a la formación académica de los estudiantes de pregrado, facilitando el desarrollo de prácticas educativas con los estudiantes, quienes se convierten en agentes de difusión de conocimientos en la lucha y prevención de la sífilis en sus espacios sociales.

Palabras clave: Extensión universitaria; Educación para la salud; Estudiantes; Sífilis.

1. Introduction

The advent of penicillin and the greater attention given to measures that prevent sexually transmissible infections (STIs) resulted in a decrease in the number of syphilis cases. However, several countries have shown a great increase in the disease's prevalence over the past few years (Cardoso et al., 2018). Syphilis is a reemerging disease in Brazil and has currently reappeared as a national health issue after a period of apparent control and decline in its incidence (Brazil, 2019. Brazil, 2020). In 2016, syphilis was declared a serious public health problem in Brazil, even with the availability of an effective and low-cost treatment provided by the Unified Health System (SUS). The SUS, in 2017, used around 2.8 million dollars of its budget with medium and high complexity procedures related to sexually transmitted infections (STIs), including hospitalizations related to acquired syphilis and congenital syphilis (Brazil, 2018. Brazil, 2019).

According to data from the Notifiable Diseases Information System (Sinan) in 2019, 152,915 cases of acquired syphilis, 61,127 cases of syphilis in pregnant women, and 24,130 cases with 173 deaths from congenital syphilis were reported. Since 2010, acquired syphilis is a matter of mandatory notification and its detection rate was 34.1 cases per 100,000 population in 2015 to 76.2 cases per 100,000 population in 2018. Only in 2019, there was a slight reduction to 72.8 cases per 100,000 inhabitants (Brazil, 2019. Brazil, 2020).

Among the Brazilian states, Pernambuco stands out in terms of epidemiological data related to syphilis. In 2010 and 2018, the detection rate per 100,000 inhabitants of acquired syphilis was 0.3 to 79.6, respectively (Avelleira & Bottino, 2016). In 2019, Pernambuco registered 8,374 cases of acquired syphilis, corresponding to an increase of 7.3% compared to 2018, in which 7,804 were registered. The number of congenital syphilis cases in the state in 2019 showed an increase of 3.5% compared to 2018. In the period from 2015 to 2019 34.8% of cases of acquired syphilis were registered between the age group of 20-29 years and constant increasing between 13-19 years, highlighting that the highest prevalence of infection is concentrated in the population of young people and young adults (Brazil, 2020). In the 2018 Carnival, 1,466 people were investigated by rapid test for syphilis and of this total, 156 were positive about one case every ten people.

Syphilis is a systemic bacterial infection, primarily sexually transmitted and chronically occurring, caused by *Treponema pallidum*, a highly pathogenic gram-negative bacterium. Syphilis is characterized by painless sores on the tongue, penis, anus, vulva, and/or vagina, which, if left untreated, disappear. The lesions become more severe, affecting the skin, cardiac and nervous systems and possibly resulting in death as the infection progresses. In addition to sexual transmission, syphilis can be transmitted through blood transfusion, sharing syringes and needles, occupational accidents, or vertically (mother to fetus), resulting in congenital syphilis. Congenital syphilis can cause abortion, premature birth, fetal death, deafness, mental retardation, in addition to malformations (Avelleira & Bottino, 2016). However, some infected are asymptomatic, an important epidemiological clinical course, since these carriers inadvertently transmit the infection and are partly responsible for maintaining the cases.

Congenital syphilis represents a major public health problem due to the high incidence of harm to the fetus and/or newborn, such as miscarriages, premature birth, fetal death, and malformations in the newborn. In this scenario, quality prenatal care is extremely important as it enables early diagnosis and treatment, avoiding possible harm to the baby. In data on women who underwent prenatal care between 2009-2017, it is possible to observe a reduction in maternal and fetal mortality rates

(Oliveira et al., 2021). After diagnosis, should follow the treatment is carried out by means of antibiotics, Penicillin Benzathine being the drug of choice for all stages. Penicillin began to be used in 1942 and only in 2016 was recognized by the World Health Assembly as an effective drug to control vertical transmission (Lazarini & Barbosa, 2017; Silva, 2016; Araújo et al., 2021).

Studies highlight that the high prevalence of syphilis is directly connected with social and economic issues. Cases of congenital syphilis are an example, as it demonstrates that they are mostly associated with lower maternal education. Thus, combating syphilis through the implementation of preventive and health promotion actions is essential. Health awareness and education, in addition to early diagnosis and treatment, are extremely fundamental for the control and prevention of syphilis (Figueiredo et al., 2020; Solino et al., 2019). Health education is a teaching-learning strategy whose objective is health promotion, prevention, recovery, and maintenance. Also contributing to autonomy in care and reducing expenses with treatment, hospitalization, and absence from school and work (Sortica & Albuquerque, 2018; Veiga et al., 2018). The university extension activities are a form of interaction that must happen between the university and the community in which it is inserted, acting as a permanent bridge between the higher education institute and the society (Nunes & Silva, 2016; Diniz et al., 2020). It's understood by university extension, an opportunity to create new perspectives towards social change where an exchange mutual between the knowledge acquired at the university and the knowledge of the reality of the working community (Cruz et al., 2021).

Given the problems in the number of cases and the impact on the population, especially in pregnant women and newborns, syphilis is a topic that deserves attention in extension actions. Furthermore, the exchange of knowledge is precious when we talk about training health professionals, as it provides undergraduates with direct contact with society and problems that will be faced in professional life (Bernardes, 2016). Thus, we aim to contribute to academic training and report an extension action experienced by undergraduate students at the Federal University of Pernambuco (UFPE) through the construction of knowledge about syphilis with elementary and high school students, since this group is a population in stage critique of growth, development and communication bridge.

2. Methodological Path

This study, with a cross-sectional descriptive profile, was part of an extension project approved by the Pro-Dean for Extension and Culture at the Universidade Federal of Pernambuco (UFPE) with an educational proposal and an experience report for Health Education articulated with Teaching and Research. The activities were carried out in semesters 2019.1 and 2019.2 in the discipline of Parasitology at the UFPE and in the Coordinator of Science Teaching in the Northeast (CECINE – UFPE). The actions were targeted at elementary and high school students.

This type of study allows a description of experienced hypotheses in order to contribute to the construction and remodeling of scientific and popular knowledge. According to Minayo (2013), the experience report requires participant observation and exploration of the field, considered a strategy in the whole of the investigation, in which the researcher needs to relativize his social space, the techniques, the investigated object and the interpersonal relationships. The researcher must understand and interpret social events in the scenario, whose raw material consists of experiences, experience, common sense and action, which are integrated and understanding is fundamental, taking into account the subjectivity of the subject in the historical and social context, corroborating with statements by Lopes (2012).

Initially, the extension workers were instructed to carry out a literature review, seminar presentations, and discussions on syphilis and teaching-learning strategies. Strategies and didactic-pedagogical resources were planned, developed and applied by extensionists, graduate students from the Centers for Biosciences, Health Sciences and Medical Sciences at UFPE.

The actions were carried out in a conversation circle based on meaningful learning, where the construction of knowledge takes place in a space where the target audience plays the role of the subject in their teaching-learning process, developing discussions even if contradictory, but that instigate each one of them. In the actions, we address *Treponema pallidum* (taxonomy,

morphology, reproduction), clinical aspects, pathophysiology, diagnoses, prophylaxis, treatment and the epidemiology of syphilis. Stands with panels, posters and folders were set up. On the occasion, there was also the distribution of penile and vaginal condoms, lubricating gel, handouts and leaflets on HIV/AIDS, viral hepatitis and on the correct use of condoms. There was also the distribution of leaflets kindly provided by the Pernambuco State and Recife Municipal Health Departments.

3. Results and Discussion

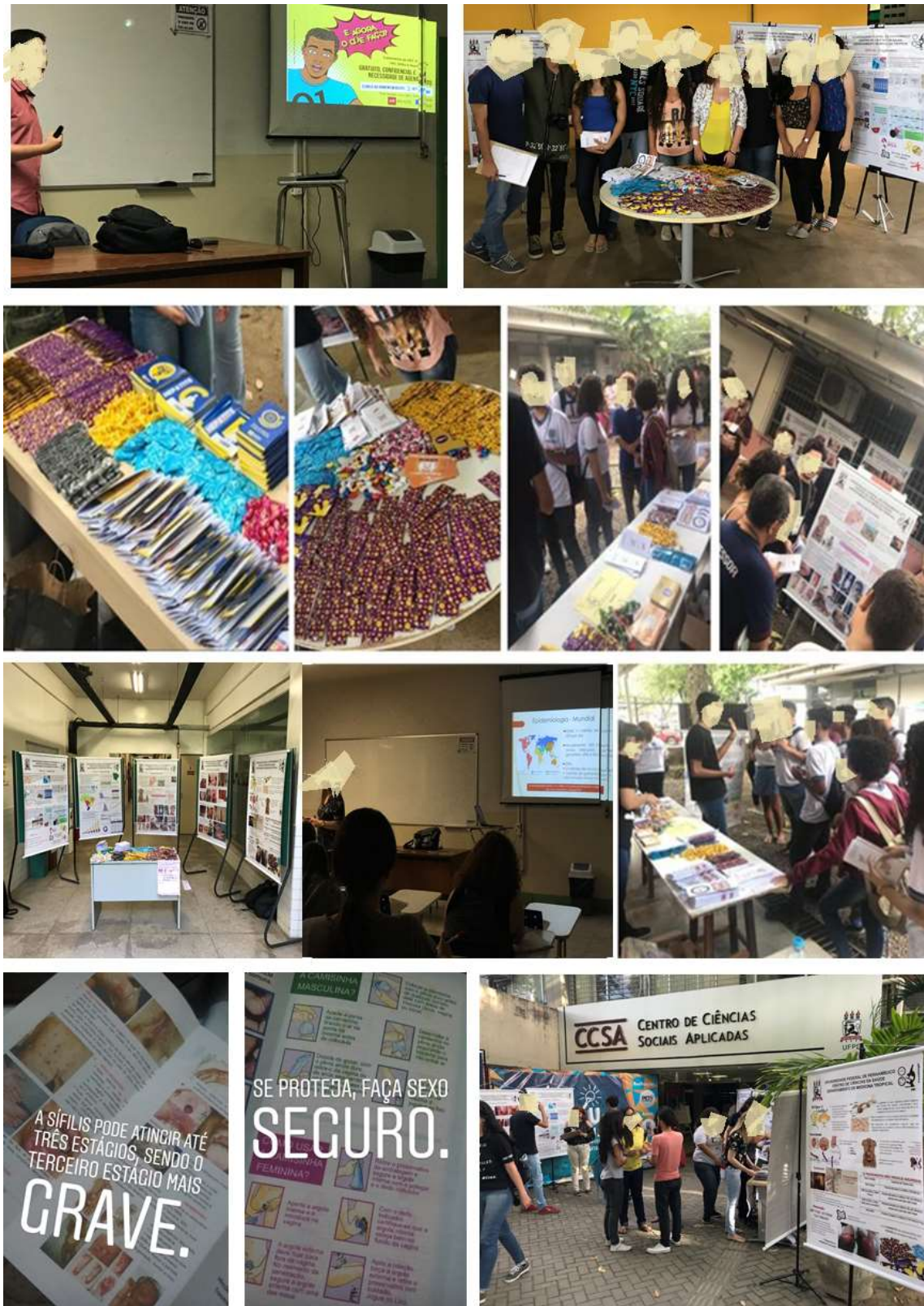
Here we report the results of an extension project implemented since 2017 and which, due to its positive reach, was still in progress. In the 2019 semesters, the project received nine public schools, totaling 325 students. Furthermore, this project was applied during the National Science and Technology Week, CECINE-UFPE/2019, where we received approximately 500 high school and elementary school students.

Initially, the students were shy when looking at information leaflets, condoms and panels showing lesions caused by syphilis (figure 1). The first step, to understand the level of knowledge of the students and start the conversation circle, was to ask "What is syphilis?" In general, they answered: "disease transmitted by sex without a condom". Soon, we started to demystify and conceptualize the difference between Sexually Transmitted Disease (STD) and Sexually Transmitted Infection (STI), highlighting the importance of changing this nomenclature, as a person can be infected and transmit this infection, but not necessarily show signs or symptoms (Oliveira et al., 2021).

Extension workers were instructed to work at least in pairs and students were distributed into groups of 4-7, where students were asked about the current epidemiological situation of syphilis, and in general, they stated that they did not know the current epidemiological scenario of syphilis and demonstrated surprise with the high number of cases and deaths, in addition to the severe damage to health and injuries to the penis, anus, vagina and oral cavity. Although ulcers look painful, they are usually painless, and are likely to go if they are in areas that they cannot directly observe such as in their mouth or anus. Patients may be reluctant to mention them if they are not comfortable talking to their clinician (Peterman & Furness, 2019). This reality unrecognized by patients reported by the students highlights the need for the implementation and practice of public health policies in order to build knowledge about sexually transmitted infections and health empowerment.

According to Pacheco et al. (2020), adolescence is one of the most critical and complex stages of development, as it is at this stage that sexual initiation usually occurs, making them vulnerable to STIs and/or unplanned pregnancies that can lead to possible miscarriages and consequently damage to health. Thus, it generates the need for sex education and preventive and contraceptive methods. In adolescence, a peculiar phase of development, young people face all sorts of misfortunes in a society in constant transformation. It is a phase marked by profound physical, psychological and social changes, which make adolescents more vulnerable to risk situations such as violence, alcohol abuse, drug use and exposure to STIs, including risk behavior to contract and transmit syphilis. Studies by Bernardes (2016) reported that this group is an important communication bridge with other niches in society, so we seek to work with high school and elementary school students who can later become agents of change and transmission of knowledge in their communities.

Figure 1. Moment of conversation wheel and Stand assembled with folders, condoms, lubricants and booklets (Universidade Federal de Pernambuco, 2019).



Source: Authors' personal archive.

In this context, this action was constructed in the form of a conversation and was extremely relevant to sensitize students about the risk factors for contracting the infection and possible forms of prevention, as Veiga et al. (2018) demonstrated in their

studies. The dialogue was consolidated, curiosities and doubts were clarified and discussions about the importance of syphilis were built together. Therefore, it was demonstrated that the conversation wheel is a possible instrument to obtain data in narrative research, taking into account the approach and questioning, seeking to understand the connection of the social group with the topic addressed, as reported in the study by Pacheco et al. (2020). This study states that promoting a more informal environment, with a discourse based on the daily vocabulary of adolescents and through dynamics, makes this exchange of knowledge more directed towards the target audience of the action, being pleasurable and enriching for both students and extension workers. It was also highlighted by Moura and Lima (2014) that dialogue is a very important moment of sharing, as it presupposes an exercise in listening and speaking, being a space for training, exchanging experiences, venting and building opinions, with each participant's speech constructed based on interaction, whether to agree, disagree or complement.

In prevention and diagnosis, we discussed the importance of using condoms, diagnosing and seeking medical care. These topics were addressed because adolescents and young people are considered a vulnerable group for the contamination of STIs due to the early initiation of their sexual life, as well as due to the lack of efficient information on the use of condoms, low level of education and a deficiency in the formation of knowledge about STIs, thus confirming what was reported by Wanzeler et al. (2021). Thus, we saw the need to disseminate knowledge about STIs among students in order to reduce the rates of contamination, as well as to build knowledge about condoms and how to use them, because according to Souza et al. (2017) adolescents who have confidence in their own ability to use condoms, they can use them consciously and routinely, contributing to both their health and that of their partners.

Syphilis control efforts have identified many successful interventions, but some barriers remain unresolved. In this context, Sortica and Albuquerque (2018) demonstrated the importance of deconstructing the discrimination and marginalization that still exists in the request and realization of the diagnosis for STIs. Added to that, there are no reliable tests for diagnosing latent infection with *Treponema pallidum*. We argue that early diagnosis and prevention are important, as some infected may be asymptomatic and inadvertently spread the infection. We distributed approximately 1,500 folders on primary, secondary, tertiary, congenital and neonatal syphilis and another 2,000 handouts and leaflets on HIV/AIDS, viral hepatitis and the importance and correct use of condoms. In addition, approximately 7,000 penile condoms, 200 vaginal condoms and 10,000 lubricating gel sachets were distributed (figure 1).

As Veiga et al. (2018) demonstrated, both extension workers and students acquired individual knowledge, especially regarding ways to prevent, transmit syphilis, identify its signs and symptoms, forms of diagnosis and how to treat it, among other topics, after the conversation wheel. Each participant is left with a commitment to multiply information and disseminate what they learned, whether in their homes or other social spaces they attend. With each action, the extensionists were motivated, with social commitment and gained security in the discussions, resulting in the maximization of information, as was also shown in studies by Moura and Lima (2014).

According to Diniz and collaborators (2020), the university extension provides a bridge between the academic society and the general community, making it possible to have knowledge of the social reality of communities and their needs. Through this contact, it is possible to develop new programs that seek to meet these needs, contributing to possible changes in the short or long term. Thus, the extension workers were enabled in terms of scientific and pedagogical knowledge, in addition to action strategies in Health Education in a multidisciplinary and interdisciplinary way, as well as group work. Therefore, the project contributed to humanized academic-professional training, in line with the National Policy on Popular Education in Health and National Curriculum Guidelines.

4. Final Considerations

Without a doubt, health education actions are important for the construction of knowledge, promotion of individual and

collective health and benefits on the epidemiology of syphilis. More information needs to be given about individuals' roles in the research and how the research will benefit them and society in general.

Innovative twists on old approaches will be needed as populations change and the factors that contribute to syphilis continue to evolve. Syphilis can be often controlled by a combination of case finding, treatment, and education. The action contributed to the humanized academic and professional training of extension workers, providing the development of educational and care practices. As well as the development of scientific and pedagogical knowledge and strategies of extension activities in health education, through the relationship of exchanging experiences and sharing knowledge. Thus, Health Education actions together with high school/elementary school students are extremely important strategies for the prevention of syphilis and other STIs, knowledge construction and its dissemination, as each student who integrates the conversation circle takes knowledge with them, being able to transmit to your family and friends. Both extension workers and visiting schools become participants in the fight against syphilis.

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