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Assessment of knowledge and updating of community health workers on the rational use of medications in asthma

Evaluación del conocimiento y actualización de agentes comunitarios de salud sobre el uso racional de medicamentos en asma

Avaliação do conhecimento e atualização de agentes comunitários de saúde sobre o uso racional de medicamentos na asma

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Abstract

The aim was to train CHWs in the knowledge necessary to guide Primary Care users on the rational use of medications in asthma treatment. This experimental, longitudinal, and qualitative study was conducted with six CHWs from the Habiteto Family Health Unit, Sorocaba, São Paulo, in September 2023. The study used the Problematization Methodology based on the Maguerez Arch. This methodology included observing the situation, identifying key points, administering diagnostic questionnaires, providing educational interventions through a booklet and educational games, and reassessing knowledge. The study was approved by the Ethics Committee of the University of Sorocaba (report no. 6,246,081). Responses to the questionnaire administered before and after the intervention were assessed using a Likert scale, revealing a significant improvement in the CHWs' performance, with an increase in total scores for all participants, demonstrating the effectiveness of the training. The study achieved its objective of training CHWs on asthma and the rational use of medications, strengthening their role as mediators between the Family Health Strategy and the community. The educational intervention, which employed active methodologies, expanded the knowledge and confidence of professionals, thereby improving guidance for users in Primary Care.

Descriptors: Community Health Agents; Continuing Education; Training; Rational Use of Medications; Asthma.

Resumén

El objetivo fue capacitar a los trabajadores de la salud comunitarios (TSC) en los conocimientos necesarios para orientar a los usuarios de Atención Primaria sobre el uso racional de medicamentos en el tratamiento del asma. Este estudio experimental, longitudinal y cualitativo se realizó con seis TSC de la Unidad de Salud Familiar Habiteto, Sorocaba, São Paulo, en septiembre de 2023. El estudio utilizó la Metodología de Problematización basada en el Arco de Maguerez. Esta metodología incluyó la observación de la situación, la identificación de puntos clave, la aplicación de cuestionarios diagnósticos, una intervención educativa con un folleto y juegos educativos, y la reevaluación de conocimientos. El estudio fue aprobado por el Comité de Ética de la Universidad de Sorocaba (informe n.º 6.246.081). Las respuestas al cuestionario administrado antes y después de la intervención se evaluaron mediante una escala Likert, lo que reveló una mejora significativa en el desempeño de los TSC, con un aumento en las puntuaciones totales de todos los participantes, lo que demuestra la eficacia de la capacitación. El estudio logró su objetivo de capacitar a los TSC sobre asma y el uso racional de medicamentos, fortaleciendo su papel como mediadores entre la Estrategia de Salud Familiar y la comunidad. La intervención educativa con metodologías activas amplió el conocimiento y la confianza de los profesionales, mejorando la orientación a los usuarios en Atención Primaria.

Descriptores: Agentes Comunitarios de Salud; Educación Continuada; Capacitación; Uso Racional de Medicamentos; Asma.

Resumo

Objetivou-se capacitar os ACS quanto ao conhecimento necessário para orientar usuários da Atenção Primária sobre o uso racional de medicamentos no tratamento da asma. Estudo experimental, longitudinal e qualitativo realizado com seis ACS da Unidade de Saúde da Família Habiteto, Sorocaba-SP, em setembro de 2023, utilizando a Metodologia de Problematização baseada no Arco de Maguerez, que incluiu observação da realidade, identificação de pontos-chave, aplicação de questionários para diagnóstico, intervenção educativa com cartilha e jogos educativos, e reavaliação do conhecimento. O estudo obteve a aprovação do Comitê de Ética da Universidade de Sorocaba (parecer n.º 6.246.081). As respostas ao questionário aplicado antes e após a intervenção foram avaliadas por escala Likert, revelando melhora significativa no desempenho dos ACS, com aumento das pontuações totais em todos os participantes, evidenciando a eficácia da capacitação. O estudo alcançou o objetivo de capacitar os ACS sobre asma e uso racional de medicamentos, fortalecendo seu papel na mediação entre a Estratégia Saúde da Família e a comunidade. A intervenção educativa com metodologias ativas ampliou o conhecimento e a segurança dos profissionais, melhorando a orientação aos usuários na Atenção Primária.

Descritores: Agentes Comunitários de Saúde; Educação Continuada; Capacitação; Uso Racional de Medicamentos; Asma.

Introduction

Community Health Workers (CHWs) are part of a large professional group that is widely distributed throughout Brazil. CHWs are extremely important professionals in ensuring strong ties between the population and the healthcare team. Among their main responsibilities, CHAs are responsible for maintaining ongoing contact with the families served throughout the region, developing educational initiatives aimed at promoting health and preventing disease[1,2].

In 1991, the National Community Health Agents Program (PNACS) was created, with the central objective of contributing to the reduction of infant and maternal mortality, primarily in the North and Northeast regions of the country. This program was first implemented in Ceará and, in 1992, was recognized by the Ministry of Health, which named it the Community Health Agents Program (PACS). The PACS was integrated with the Family Health Program (PSF) in 1994; however, the Community Health Worker (CHW) activity was only regulated in 1999, through Decree No. 3.189/99. In 2002, Law No. 10.507 created the CHW profession, determining that professional practice would be exclusively within the Unified Health System (SUS) under the supervision of a local manager[3,4].

Currently, the CHW is part of the Family Health Strategy and, as a professional responsibility, must develop health promotion and disease prevention actions, focusing on health education activities, both collectively and in the home. These actions promote increased access to health services, as well as the actions carried out, always with a view to social promotion and citizenship protection[5].

In 1920, the modern concept of Primary Health Care (PHC) emerged in the United Kingdom. It advocated organizing the health care system into several levels: home services, primary and secondary health centers, supplementary services, and teaching hospitals. From the 1920s to the 1970s, several movements led to the implementation of PHC in the United Kingdom, the most important being the creation of the National Health Service (known as the NHS) in 1948, with the adoption of the general practitioner as a key element in the implementation of family and community medicine[6].

Following several movements that directly and indirectly contributed to the beginning of the institutionalization of PHC on a global scale, the 1978 International Conference on Primary Health Care was held in Alma-Ata, with the support of the World Health Organization and the United Nations Children's Fund (UNICEF). The Conference fostered the development of the essential elements of PHC: health education; basic sanitation; maternal and child programs; immunization and family planning; prevention of endemic diseases; treatment of the most common diseases and injuries; provision of essential medicines; promotion of healthy eating; and appreciation of complementary practices. All these elements consistently emphasized health as an expression of a human right[6].

In Brazil, Primary Health Care (PHC) was established gradually, through development cycles. Initially, with the creation of Health Centers at the University of São Paulo (USP) in 1924, likely influenced by the movement that originated in the United Kingdom. Following this, the Special Public Health Service (SESP) was created in the 1940s, now known as the National Health Foundation. Beginning in the 1960s, State Health Departments were developed, marking the third cycle. The fourth cycle occurred in the 1970s and was endorsed by the Alma-Ata Conference in 1978. In the 1980s, concurrently with a severe social security crisis, the fifth cycle began, which incorporated the INAMPS medical care model into PHC units. The sixth cycle was marked by the municipalization of PHC units, leading to an expansion of primary care. The seventh and eighth cycles were characterized by the implementation of the Family Health Program and the Family Health Strategy[6].

Home visits (HV) are among the activities carried out by CHWs. This type of home care, characterized by and based on the interaction of health professionals with residents, their families, and caregivers, when present, consists of a set of activities carried out in the home, scheduled and ongoing, meeting the needs of the individuals being cared for and their families. HVs may include health promotion and prevention, rehabilitation, and curative activities. Home care encompasses any home-based care provided by various professional categories. Home surveillance aims to disseminate health promotion, prevention, and education activities, as well as actively seeking out the population served by the Family Health Unit (FHU) in the region[7].

Chronic Noncommunicable Diseases (NCDs) are the leading causes of mortality worldwide and, according to the World Health Organization (WHO), killed at least 43 million people in 2021, with cardiovascular diseases accounting for most deaths. In Brazil, according to data from the document "Strategic Action Plan to Combat Chronic Diseases and Noncommunicable Injuries in Brazil 2021-2030," in 2019, 738,371 deaths from NCDs were recorded in the country, mostly affecting the most vulnerable population. The diseases that most affect the population are those of the circulatory system, malignant neoplasms, diabetes mellitus, and chronic respiratory diseases. These diseases are characterized by multiple etiologies and several risk factors (such as, primarily, tobacco use, alcohol abuse, unhealthy diet, and lack of physical activity). Long latency periods, prolonged course, non-infectious origin, and association with functional deficiencies and disabilities are some of the characteristics of NCDs[3,8,9].

Asthma is a disease characterized by diffuse inflammation of the airways and can be triggered by various stimuli, leading to partial or completely reversible bronchoconstriction. Signs and symptoms include dyspnea or difficulty breathing, chest tightness, wheezing, and coughing. Symptoms can vary throughout the day and are commonly worse at night or early morning and during physical activity. Over the years, symptoms can also vary, becoming milder or worse. Diagnosis is based on the patient's medical history, physical examination, and pulmonary function tests. Treatment is based on controlling the environmental factors that trigger the attack and drug therapy, which generally includes inhaled beta-2 agonists

and corticosteroids. The medications used can be classified as rescue (for managing attacks) and maintenance (administered for prophylactic treatment)[10-12].

The prevalence of asthma symptoms among adolescents is known to be among the highest in the world. However, a small portion of this population has a clinical diagnosis of the disease. It is believed that in Brazil, there is a discrepancy between the frequency of symptoms and the diagnosis of asthma, thus indicating the underdiagnosis of asthma. From 2008 to 2013, the number of deaths decreased by 10% and the number of hospitalizations decreased by 36%; however, the hospital mortality rate increased by 25%. Overall, regardless of the country evaluated, the level of asthma control is low, and morbidity is high. In Brazil, greater access to treatment has resulted in a decrease in hospitalizations and mortality from the disease. Considering the global context, the healthcare team plays a fundamental role in sharing the importance of therapy and the goals that should be achieved by the patient during their treatment[9].

According to the Federal Council of Pharmacy (CFF), the term Pharmaceutical Care is defined as:

> *"Practice model that guides the provision of different pharmaceutical services directly aimed at the patient, family and community, aiming at the prevention and resolution of pharmacotherapy problems, the rational and optimal use of medicines, the promotion, protection and recovery of health, as well as the prevention of diseases and other health problems"*[14].

Pharmaceutical care is based on the definition that it is the pharmacist's responsibility to meet the patient's health needs, within their professional limitations, ensuring that all drug therapy is appropriate for the treatment of their health problems, and that pharmacotherapy ensures its effectiveness and safety. This allows the patient to use their medications appropriately[13].

One of the services provided within pharmaceutical care is the promotion of the Rational Use of Medication (RUM). According to the WHO, RUM is characterized by making medication available to patients in appropriate forms according to their clinical conditions, in doses appropriate to their individual needs, for an adequate period, and at the lowest cost to themselves and the community. It is known that the irrational or inappropriate use of medications is a global problem. The WHO estimates that more than half of all medications are prescribed, dispensed, or sold inappropriately, and that half of patients do not use them correctly and safely. Irrational use of medications can have serious health consequences, through the emergence of Drug Interactions (DI), Drug-Related Problems (DRPs), and even bacterial resistance in the case of indiscriminate use of antimicrobials[14,15].

Health education is characterized as a systematic, continuous, and ongoing process aimed at developing and shaping citizens' critical awareness. Therefore, it is important to foster individual motivation to seek individual and collective solutions to the problems they experience and to participate in exercising social control. Health education actions can be persuasive, based on the biomedical model, and seek to organize behaviors considered significant for preventing or minimizing health problems. Alternatively, they can be participatory and focused on building critical thinking and empowering individuals to maintain their health and quality of life. Therefore, it is important to train healthcare professionals to develop critical and empowering health education activities, promoting a horizontal exchange of information among individuals, respecting the unique characteristics of each individual, their contexts, and cultures[5,16,17].

In this context, it's important to reflect on the training and ongoing education of healthcare professionals. The learning process for different professionals can be challenging, as it requires considering the different mindsets and values associated with their backgrounds. All these factors must be considered when implementing changes in the service, especially if they involve knowledge, attitudes, and skills[18].

When discussing the training or qualification process for professionals, it is important to consider certain aspects, such as the profile of the professional being trained, their training and qualification needs, and the competencies that must be acquired or developed during the educational process. Teaching methods should focus on innovation in the learning process, skill development, reflective thinking, and critical thinking. In recent years, the pharmaceutical profession has gained notable prominence in society. Therefore, it is noteworthy that greater responsibilities are being assigned to pharmacists, who also have a direct role in maintaining patients' quality of life and restoring their health[15,19].

In the current context of pharmaceutical practice, concern for patient well-being becomes the guiding principle for health promotion actions. Pharmacists assume a key role, joining forces with other health and community professionals to promote health. Four categories of initiatives undertaken by pharmacists have been identified to improve community health: patient monitoring and education; assessment of risk factors; health prevention, health promotion, and disease surveillance. Within health promotion, the promotion of the Rational Use of Medications can be included[20].

Multidisciplinary work often presents a challenge, so it is important that pharmacists are clear about their specific responsibilities as part of a healthcare team so they can share common knowledge and responsibilities[21].

Pharmacists who are part of the Expanded Family Health Center (NASF) can work in an integrated manner with family health teams (eSF) and primary care teams (eAB), carrying out educational practices that can foster reflection and health transformation, culminating in improved clinical outcomes and the promotion of a better quality of life for SUS users. The WHO recognizes pharmacists as educators, playing a key role in collaboration with other members of the multidisciplinary team. Educational practices carried out by pharmacists have proven highly effective in promoting URM and health education for the local community, exerting a significant influence on public health. Therefore, it is clear that the pharmacist's participation in the NASF, as an

educator, can foster critical thinking and reflection, incorporating scientific knowledge into daily healthcare practices[22].

Sorocaba is a municipality in the interior of São Paulo state, with approximately 700,000 inhabitants (estimated for 2021), and is part of the Macro Metropolitana Paulista macro-region. In accordance with Decree DOE No. 51,433 of December 28, 2006, the state of São Paulo was divided into 17 Health Departments. These Departments are responsible for coordinating the activities of the State Health Department at the regional level and promoting intersectoral coordination with municipalities and civil society organizations. The municipality of Sorocaba is part of the Regional Health Department (DRS) XVI and is composed of a network of 32 Basic Health Units, divided between traditional units and Family Health Units (USF), representing the local PHC[23,24].

Given the need to update CHWs' knowledge about asthma, it was necessary to develop an intervention project that encompassed both the knowledge these professionals had already acquired and that which could be added to their training as healthcare professionals. It is known that a patient who is well-informed about their medication treatment has better treatment adherence, resulting in better therapy outcomes; therefore, providing continuing health education can yield highly effective results. Furthermore, collaborative work with the entire healthcare team involved in the patient's care is extremely important to ensure adequate treatment adherence. CHWs are an important social agent and therefore fundamental in care, as they serve as a link between the healthcare team and the community, thus providing all necessary information about the healthcare service more effectively[25,26].

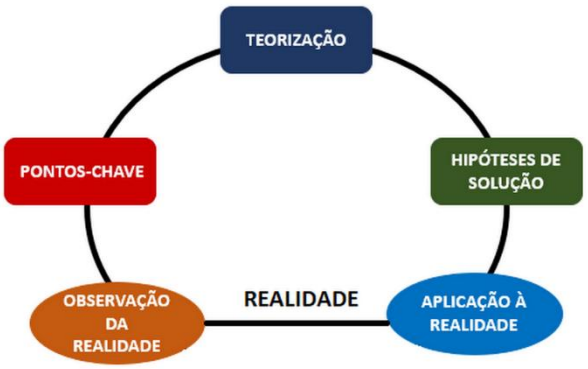
Given the above, the present study has the general objective of training Community Health Agents regarding the knowledge necessary to guide Primary Health Care users on the rational use of medications in the treatment of asthma; and the specific objectives: to assess knowledge about the use of medications used in the treatment of asthma; to carry out interventions according to the educational needs identified by Community Health Agents; and to promote the updating of Community Health Agents (CHA), so that they feel confident and prepared to guide patients on the rational use of medications in the treatment of asthma.

Methodology

This is an experimental, longitudinal, prospective, and qualitative study conducted at the Habiteto Family Health Unit (USF), located in the Ana Paula Eleutério neighborhood, in the northern zone of the municipality of Sorocaba, São Paulo state, during September 2023. The Habiteto USF had three family health teams, with a total of six active CHWs. Therefore, all CHWs were invited to participate in the training; those who voluntarily accepted the invitation were included in this study. The exclusion criterion expressed a desire not to participate in the training voluntarily.

To implement appropriate teaching and learning conditions, this study was based on the Problematization Methodology (PM), using the Maguerez Arc tool. PM is related to preparing individuals in the learning process, helping them become capable of observing reality and contributing to service improvements through problem-solving. This methodology contributes to the construction of knowledge through theoretical and practical implementation. The Maguerez Arc is a teaching strategy that involves developing problem-solving through five stages[27].

Figure 1. Charles Maguerez's Problematization Arch. Sorocaba, SP, Brazil, 2023



The stages of the Maguerez Arch consist of:

- Observation of reality: in the work in question, this observation was based on the care of asthmatic patients who are monitored at the Family Health Unit.
- Establishing key points: observing asthma treatment evasion in children and adolescents, as well as measuring asthma knowledge among community health workers (CHWs) who provide ongoing care to families at the USF.
- Theorizing: a questionnaire was administered to assess CHWs' knowledge of asthma and its medication treatments, as well as their ability to guide asthma patients. The questionnaire was the trigger for the problem.
- Solution hypotheses: after collecting data from the completed questionnaires, an educational activity was implemented to update asthma knowledge, with the active participation of the CHWs. Dynamics were used to share knowledge. At the end of the activity, the previous questionnaire was reapplied to assess the CHWs' knowledge retention.
- Reality application: at the end of the activity, the intention was for the CHWs to feel confident and capable of guiding patients on environmental aspects and those related to asthma treatment.

Before applying for the Problem-posing Methodology, it was necessary to speak with the USF health teams and invite the CHWs to voluntarily participate in the research by signing the Informed Consent Form. The content explanation process consisted of several steps: developing a booklet with theoretical aspects of asthma and its treatments, as well as explaining the "myths" surrounding this chronic disease.

The second stage involved diagnosing and developing the CHWs' knowledge of devices used in asthma treatment. Participants were introduced to metered-dose inhalers (MDIs), dry powder inhalers (DPIs), mist devices, and spacers.

The third stage was characterized by the application of educational games, such as crosswords, word searches, and correlation games, all addressing the themes presented in the first moments.

By using these activities, it was possible to develop the content in a more dynamic and participatory way, thus improving the CHWs' understanding of the topic. At the end of the activity, they were asked if they had any remaining questions about the topic covered, and the questionnaire was administered again.

After identifying the selected problem, the first phase of the study took place on September 1, 2023, in the morning. This phase consisted of raising questions about asthma and the rational use of medications for this chronic health condition. The questionnaire was initially administered, followed by a discussion period so the participants could express their concerns.

The most common topics among participants were asthma in the context of sports and physical activity, as well as frequent questions about medication treatment and the proper use of inhalers. Questions were also raised about asthma management during pregnancy, as well as guidance on adapting the home environment for asthmatics.

After the initial phase, planning was carried out to implement the educational activity, based on the needs identified by the CHWs, who suggested a more dynamic approach, less focused on theoretical presentation. An educational booklet on asthma and the rational use of medication was developed. The primary purpose of producing this material was to provide a support resource for CHWs to use after the educational activity, serving as a reinforcement and ongoing reference tool. The booklet was designed to present the content in a clear, objective, and visually accessible manner, intended to complement the explanations provided during the activity, without resorting to traditional lecture models. Its structure allowed participants to follow the topics covered simultaneously with oral mediation, contributing to a more participatory and visual approach to the educational process.

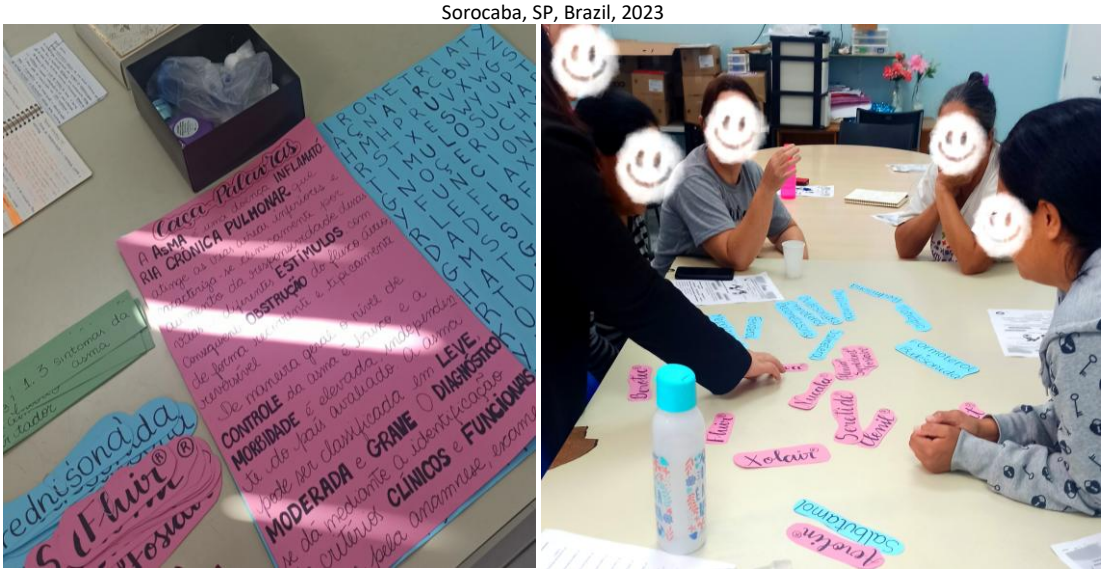
In the second phase of the intervention, educational games were implemented, beginning with a game involving matching the reference names of the main medications used in asthma treatment with the name of the active ingredient. This activity aimed to raise awareness of the names of medications most used by residents and to familiarize the CHWs with the nomenclature.

The second educational game developed was a word search, chosen because it is a fun, easy-to-understand activity frequently used in informal educational settings. The terms used in the game were selected based on a text adapted from the Clinical Protocol and Therapeutic Guidelines (PCDT) for asthma[9]. The highlighted words allowed for the exploration of content related to the definition of the disease, clinical manifestations, symptoms, and treatment options. The proposal aimed to reinforce the content through an interactive approach, respecting the participants' previous suggestions regarding a preference for less expository methods.

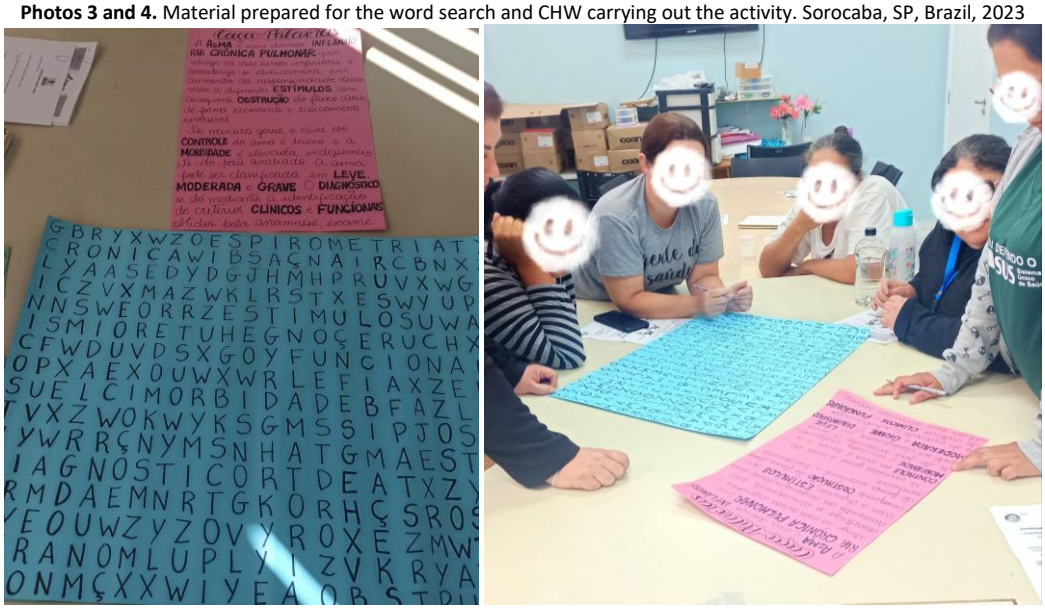
The highlighted words allowed for the exploration of content related to the definition of the disease, clinical manifestations, symptoms, and treatment options. The proposal aimed to reinforce the content through an interactive approach, respecting the participants' previous suggestions regarding a preference for less expository methods.

The sentences included in the game were carefully crafted to explore relevant topics, such as key facts about asthma, as well as address common myths associated with the disease. This approach aimed to deepen participants' understanding while encouraging critical reflection on frequently disseminated misinformation.

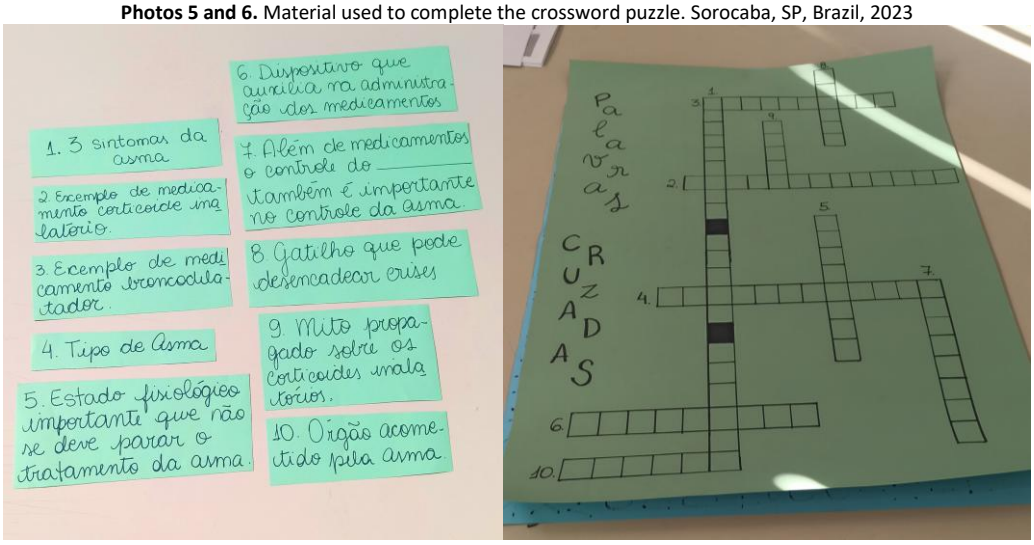
Photos 1 and 2. Materials used in asthma activity and the activity of relating the reference name to the name of the active ingredient. Sorocaba, SP, Brazil, 2023



Photos 3 and 4. Material prepared for the word search and CHW carrying out the activity. Sorocaba, SP, Brazil, 2023



Photos 5 and 6. Material used to complete the crossword puzzle. Sorocaba, SP, Brazil, 2023



In compliance with data protection regulations, this study did not store personal data of participating CHWs, nor did it identify the correct or incorrect answers on the knowledge questionnaire to be assessed (regarding the rational use of medications used in asthma care). After the study was completed, the data were converted into the total number of correct and incorrect answers on the questionnaire assessed before and after the knowledge update on the topic evaluated and did not contain personal data of the CHWs evaluated.

The study was submitted for evaluation by the Research Ethics Committee (CEP) of the University of Sorocaba, through the Brazil Platform, obtaining approval under number 6,246,081. The ethical precepts related to Resolution No. 466/2012 of the National Health Council (CNS) were respected.

Results

To evaluate the responses obtained in the questionnaire, applied both in the first and second moments of the intervention, a Likert-type scale was used[28], which classified the responses into the following categories: I = Inadequate, P.A = Partially Adequate, and A = Adequate. Each response was assigned a corresponding numerical value, with 0.5 for inadequate responses, 1.0 for partially adequate responses, and 2.0 for adequate responses. The questionnaire, consisting of 10 questions, was used to evaluate the performance of the six Community Health Agents (CHAs) working at the Habiteto Family Health Unit (USF), located in the city of Sorocaba, São Paulo. The questions addressed fundamental aspects of asthma, namely: (1) Do you know what asthma is?; (2) What are the main symptoms that characterize asthma?; (3) Can you estimate how many asthmatic children and adolescents are registered at the USF?; (4) Do you know of any drug treatment used for asthma?; (5) Do you think asthma is a curable disease?; (6) What do you think influences the worsening of the disease?; (7) Is asthma a communicable disease?; (8) Do you think asthma treatment should be interrupted during pregnancy?; (9) Can physical exercise be harmful in cases of asthma?; and (10) Do the inhalers used for treatment have the capacity to make the patient dependent (addicted)?.

The adequacy of the responses was assessed according to theoretical parameters, seeking to reflect correct or partial understanding of the topic and identify knowledge gaps. The assessments performed in the first and second meetings of each CHW are shown in Table 1, with the abbreviations P1, P2, P3, P4, P5, and P6 representing each of the six participants. The results described in the table correspond to the classification of responses according to the Likert scale categories, reflecting the adequacy of responses throughout the educational process.

Table 1. Response evaluation according to the Likert scale. Sorocaba, SP, Brazil, 2023

	P1	P1	P2	P2	P3	P3	P4	P4	P5	P5	P6	P6
Questions	1st Meet	2nd Meet	1st Meet	2nd Meet	1st Meet	2nd Meet	1st Meet	2nd Meet	1st Meet	2nd Meet	1st Meet	2nd Meet
1	PA	PA	PA	PA	PA	A	I	PA	PA	PA	PA	PA
2	P.	A	PA	A	PA	PA	PA	A	PA	A	A	A
3	I	I	I	I	I	A	I	A	A	A	I	I
4	I	PA	PA	PA	A	A	PA	A	PA	A	PA	A
5	PA	A	I	A	I	A	PA	A	A	A	I	A
6	I	PA	I	A	PA	PA	PA	PA	A	A	PA	A
7	A	A	A	A	A	A	A	A	A	A	A	A
8	I	A	A	A	A	A	PA	A	PA	A	A	A
9	I	A	A	A	A	A	A	A	PA	A	I	I
10	I	A	A	A	A	A	I	A	I	A	I	A

Note: I = Inadequate; PA = Partially Adequate; A = Adequate; P(N) = Participants.

Table 2. Total of the scores obtained in questionnaire responses. Sorocaba, SP, Brazil, 2023

P1	P1	P2	P2	P3	P3	P4	P4	P5	P5	P6	P6
1st Meet	2nd Meet	1st Meet	2nd Meet	1st Meet	2nd Meet	1st Meet	2nd Meet	1st Meet	2nd Meet	1st Meet	2nd Meet
8	15,5	12,5	16,5	14	18	10,5	18	13,5	19	11	16

After compiling the responses from both questionnaires, the total score shown in Table 2 was obtained. By observing the total score, it is possible to see a considerable improvement in the response pattern. According to the score assigned to each response, the minimum total score was 5.0 points, and the maximum total score was 20 points. Participants 1 and 4 obtained a 7.5-point difference after the intervention. Participants 2, 3, and 6 obtained a 4-point difference after the intervention. Participant 5 obtained a 5.5-point difference after the intervention. These results are considered positive, as all participants' scores increased after the second meeting, and some of them performed very well.

Discussion

After applying the learning methods, the effectiveness of the intervention was observed. After implementing the dynamics and theoretical explanations, it was clear that the CHWs were able to understand the content covered. Considering the intervention, there was an improvement in the number of correct answers on the pre-intervention questionnaire, with the average correct answer being approximately 5.4 points on the post-intervention questionnaire.

The problem-solving methodology adopted in this intervention is based on the premise that knowledge is constructed through critical reflection on practice, with individuals as protagonists of their own learning process. From this perspective, problem-solving emerges from active participation and ongoing dialogue among individuals, who share co-responsibility for learning. The use of the Maguerez Arc in this context raised important reflections on its applicability in the Primary Health Care (PHC) setting, especially regarding the feasibility of making work routines more flexible to allow for ongoing educational practices[29].

Through some of these questions, it is possible to perceive several weaknesses regarding the service provided in PHC. However, it is expected that, despite the limitations faced, the application of this methodology will provide skills for intellectual development, both individual and collective, aiming for the individual to be an agent of transformation in the healthcare environment in which they are inserted, and to be committed to improving the quality of healthcare[29,30].

Using the Maguerez Arc problematization method was crucial for the CHWs to better visualize their daily

practice regarding asthma knowledge, as well as to reflect on the main bottlenecks that may be involved in their daily work. This methodology provided tools for reflection on how information is handled while CHWs conduct home visits and even guide patients who may come to them with questions. It was evident that applying the Maguerez Arch methodology stimulated the CHWs' increased interest in achieving teaching and learning objectives. The activity helped rethink and reconstruct education based on daily work practices, which has the potential to reflect professional development[31,32].

Although the problem-posing system has yielded good results, some considerations remain: in the current scenario, facilitating teaching would be better utilized if there were more time for this practice in the work process. However, implementing the intervention faces several obstacles, such as the limited time available for health education. Considering the insufficient number of human resources and the extensive and sometimes inflexible workload, establishing schedules for continuing education at the Health Unit becomes a critical issue. Furthermore, the lack of projects and prior lectures aimed at qualifying these professionals is a significant limitation in daily practice. Combined with this, there is a lack of management understanding of the importance of the interventions performed by the CHW. Thus, there is a need to train these professionals so that they can effectively and effectively perform their duties[2].

The fact that only two meetings were held, for the reasons previously explained, shows that even with limited time available, it is possible to achieve good results with the application of short-term interventions, which highlights the importance of continuing education in health services as a problem-solving tool with an impact on the care process[1].

The pedagogical practice considers the potential of individuals, contributing to the development of well-qualified professionals with a more human perspective. This process provides opportunities to address the needs identified by them and values everyone's individuality, as well as the context in which they operate, minimizing gaps and inequalities in knowledge of the topics covered. This improves the quality of care provided by healthcare professionals. This activity provided the CHWs with the opportunity to rethink and reconstruct their own professional practice[18,32].

The active inclusion of pharmacists in the multidisciplinary team is crucial to improving health outcomes, especially at the primary care level. Furthermore, the inclusion of health promotion practices through health education encourages individuals to change their lifestyle and behavior, directly impacting the quality of life of the population enrolled in the Health Unit[33].

Considering the practice of continuing education, it is necessary to coordinate ongoing training initiatives not only for CHWs but also for all Family Health Strategy professionals so that they can share knowledge that fosters teamwork. Within the health team, each member's knowledge complements the other, and their actions are enhanced when performed collectively[25].

Conclusion

The study achieved its objective by training Community Health Agents on asthma and rational medication use, strengthening their role as mediators between the Family Health Strategy and the community. The educational intervention, based on active methodologies, contributed to expanding knowledge, providing greater confidence to professionals, and improving the guidance provided to Primary Health Care users.

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