

## Continuing education of community health agents on acute myocardial infarction

### *Educação permanente de agentes comunitários de saúde sobre infarto agudo do miocárdio*

### *Educación continua de agentes comunitarios de salud sobre el infarto agudo de miocardio*

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#### Abstract:

**Objective:** to assess the level of knowledge of community health agents before and after carrying out a continuing health education activity about acute myocardial infarction. **Methods:** quantitative, analytical, and prospective research, carried out in a Matrix Health Unit, located in the Triângulo Mineiro region (MG/Brazil), with community health agents from three family health strategies. Data collection occurred before and after the educational intervention, with a two-month interval in 2024; through a questionnaire containing sociodemographic, work-related, and question on acute myocardial infarction. The educational intervention was carried out through a face-to-face meeting, in which the content was addressed through a conversation circle and the distribution of printed material, covering variables related to the concept, symptoms, diagnosis, treatment, and complications. **Results:** 10 community health agents participated, with a mean age of 41.8 years. The number of correct answers in the pre-test varied between three and five out of a total of six questions, while this variation in the post-test was from two to six correct answers. There was no statistically significant difference when comparing the means between the two moments. **Conclusion:** although there was no statistically significant difference, there was an increase in correct answers regarding the treatment and prevention of acute myocardial infarction. Factors such as work overload and an inadequate learning environment may have interfered with the results. Therefore, it is crucial that educational interventions are continually adapted to the realities faced by community health agents on a daily basis.

**Descriptors:** Community health workers; Education, Continuing; Myocardial infarction.

#### Resumo:

**Objetivo:** avaliar o nível de conhecimento dos agentes comunitários de saúde antes e após a realização de uma atividade de educação permanente em saúde acerca do infarto agudo do miocárdio. **Método:** pesquisa quantitativa, analítica e prospectiva, realizada em uma Unidade Matricial de Saúde, localizada na região do Triângulo Mineiro, com agentes comunitários de saúde de três estratégias de saúde da família. A coleta de dados ocorreu antes e após intervenção educativa, com intervalo de dois meses em 2024; por meio de um questionário contendo questões sociodemográficas, laborais e sobre o infarto agudo do miocárdio. A intervenção educativa foi realizada por meio de um encontro presencial, no qual o conteúdo foi abordado por meio de uma roda de conversa e da distribuição de material impresso, contemplando as variáveis relacionadas ao conceito, sintomatologia, diagnóstico, tratamento e complicações. **Resultados:** participaram 10 agentes comunitários de saúde, com média de idade de 41,8 anos. O número de acertos no pré-teste variou entre três a cinco de um total de seis questões, enquanto essa variação no pós-teste foi de dois a seis acertos. Não houve diferença estatisticamente significativa na comparação das médias entre os dois momentos. **Conclusão:** apesar de não haver diferença estatisticamente significativa, houve um aumento nos acertos referente ao tratamento e prevenção do infarto agudo do miocárdio. Fatores como sobrecarga de trabalho e ambiente inadequado para aprendizagem podem ter interferido nos resultados. Portanto, é crucial que intervenções educativas sejam continuamente adaptadas às realidades enfrentadas no dia a dia pelos agentes comunitários de saúde.

**Descritores:** Agentes comunitários de saúde; Educação continuada; Infarto do miocárdio

#### Resumen:

**Objetivo:** evaluar el nivel de conocimiento de los agentes comunitarios de salud antes y después de la realización de una actividad de educación continua en salud sobre el infarto agudo de miocardio. **Método:** investigación cuantitativa, analítica y prospectiva, realizada en una Unidad Matricial de Salud, ubicada en la región del Triângulo Mineiro, con agentes comunitarios de salud de tres estrategias de salud familiar. Los datos fueron recolectados antes y después de la intervención educativa, con un intervalo de dos meses en 2024, mediante un cuestionario que contenía preguntas sociodemográficas, laborales y sobre el infarto agudo de miocardio. La intervención educativa se llevó a cabo mediante una reunión presencial, en la que se abordó el contenido a través de una ronda de conversaciones y la distribución de material impreso, que contemplaba las variables relacionadas con el concepto, la sintomatología, el diagnóstico, el tratamiento y las complicaciones. **Resultados:** participaron 10 agentes comunitarios de salud, con una edad media de 41,8 años. El número de aciertos en el pre-test varió entre tres y cinco de un total de seis preguntas, mientras que en el post-test la variación fue de dos a seis aciertos. No se encontraron diferencias estadísticamente significativas en la comparación de las medias entre los dos momentos. **Conclusión:** aunque no hubo diferencias estadísticamente significativas, se observó un aumento en las respuestas correctas relacionadas con el tratamiento y la prevención del infarto agudo de miocardio. Factores como la carga laboral excesiva y un entorno inadecuado para el aprendizaje pueden haber influido en los resultados. Por lo tanto, es fundamental que las intervenciones educativas se adapten continuamente a las realidades a las que se enfrentan a diario los agentes comunitarios de salud.

**Descriptores:** Agentes comunitarios de salud; Educación continua; Infarto del miocardio.

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## INTRODUÇÃO

Over the last three decades, Brazil has been undergoing a demographic transition, with a reduction in the fertility rate and an increase in life expectancy. As a result, there has been an increase in the number of elderly individuals compared to other groups. In addition, there has been a reduction in mortality from infectious and parasitic diseases and maternal and child diseases; on the other hand, deaths resulting from chronic non-communicable diseases (NCDs) and external causes have been increasing rapidly<sup>1</sup>.

Chronic non-communicable diseases are globally relevant, as they are the leading cause of morbidity and mortality worldwide, and can result in reduced quality of life, limitations, disability, and premature death. In Brazil, in 2019, NCDs were responsible for approximately 1.8 million hospitalizations and were the main cause of death in the age group between 30 and 69 years old, with most of NCDs being related to the circulatory system<sup>1,2</sup>.

Among the main diseases of the circulatory system, Acute Myocardial Infarction (AMI), also known as heart attack, stands out. AMI is characterized by acute myocardial injury in which there is ischemia of the cardiomyocytes<sup>3-5</sup>.

AMI presents symptoms suggestive of acute myocardial ischemia, such as tightness like pain; weight, pressure or discomfort lasting 10 minutes or more, occurring in the region of the chest; epigastrium, jaw, shoulder, back or upper limbs, and potentially radiating to other areas. Associated symptoms may include changes in cardiac biomarkers; new ischemic or pathological Q-wave alteration on the electrocardiogram; imaging tests showing changes in contractility or loss of viable myocardium; and/or identification of intracoronary thrombus<sup>3-5</sup>.

In Brazil and the world, AMI and other cardiovascular diseases are considered the main cause of death, with approximately 65% of these deaths occurring in the first hours of the onset of signs and symptoms, and approximately 80% occurring in the first 24 hours<sup>3,6,7</sup>. When AMI does not lead to death, it can cause changes at a systemic level as well as cognitive, social and work restrictions, among which the development of other cardiovascular diseases can be mentioned, such as heart failure, arrhythmias, structural valve changes, as well as depression, anxiety, sexual dysfunction and reduced mobility<sup>4</sup>.

The risk factors related to the development of AMI are: high blood pressure, diabetes, dyslipidemia (high triglycerides, low HDL and high LDL), overweight/obesity, sedentary lifestyle, alcohol consumption, smoking, family history of cardiovascular disease<sup>5</sup>.

Therefore, due to the prevalence of these diseases, the clinical impact on patients' functional capacity and quality of life and, consequently, the financial impact on the health system, preventive health actions and investment in primary care are necessary to facilitate

healthy lifestyle habits and reduce modifiable risk factors. In addition, comprehensive care for individuals with NCDs is essential, as these diseases have a long course and require a longitudinal approach that promotes self-care and the building of strong bonds<sup>8,9</sup>.

Therefore, Primary Health Care (PHC), along with the Family Health Strategy (FHS), is part of the Unified Health System (*Sistema Único de Saúde* - SUS) and is considered the main gateway for users, playing a fundamental role in health promotion, disease prevention, health surveillance, diagnosis, prevention and treatment through the link between the enrolled population and health professionals<sup>10</sup>.

Community Health Agents (CHAs), who are part of FHS teams under the supervision of nurses, perform various activities in the assigned territories, such as: registering families, home visits, providing guidance and active search. In addition, they enable the population's demands to reach the FHS. In this way, the CHAs favor access to the services offered by the SUS, since they form a link between the population and the health teams<sup>10</sup>.

The qualification of the CHA through the practice of permanent education can favor: qualified listening, monitoring of those with chronic diseases, the dissemination of information through health education and, consequently, the promotion of healthy lifestyle habits among the population.

The knowledge of the CHAs about AMI can help users and family members in the early detection for rapid assistance, and consequently prevent injuries. Thus, this study aims to evaluate the level of knowledge of community health agents before and after carrying out a permanent health education activity about acute myocardial infarction.

## METHODS

The research had a quantitative, analytical and prospective approach. The study was carried out in a Healthcare Matrix Unit (*Unidade Matricial de Saúde* - UMS), located in a city in the Triângulo Mineiro region (MG/Brazil). This healthcare unit has three Family Health Strategies (FHS), with a total of three nurses, three nursing technicians, three family health doctors and 15 community health agents.

The inclusion criteria were: being 18 years of age or older, of both sexes and having worked in the aforementioned healthcare unit for at least three months. The exclusion criteria were: medical leave or vacation, and those who were absent from the educational intervention.

Data collection was carried out through two questionnaires. The first referred to sociodemographic and employment data, such as: age, sex, self-declared race, marital status,

educational level, length of professional experience, length of work in the unit and other employment relationships<sup>11</sup>.

The second questionnaire addressed issues related to acute myocardial infarction, including variables related to: concept, symptoms, diagnosis, treatment and main complications, in addition to its prevention, totaling six questions. This questionnaire was submitted for assessment and validation regarding its appearance and content, by three judges who are experts in the area.

Data collection took place in August and October 2024, at two different times: before the educational intervention and two months after this intervention, with the purpose of assessing the level of knowledge and assimilation of the CHAs. The educational intervention was carried out through a face-to-face meeting, in which the content was addressed through a discussion circle and the distribution of printed material, covering the variables contained in the questionnaire.

The collected data were transcribed through the process of independent double typing into an Excel spreadsheet. The analysis was performed using the Statistical Package for Social Sciences (SPSS) program. Categorical and quantitative variables were analyzed through measures of absolute and relative frequencies. The Wilcoxon test, for populations under 30, was used to compare the differences between the two data collection times.

This research was conducted in accordance with Resolution No. 466/2012 of the Brazilian National Health Council and approved by the Research Ethics Committee under opinion number 6,782,762.

## RESULTS

Ten CHAs participated in the study. Four agents refused to participate and one was on vacation at the time of data collection. The sociodemographic characteristics of the participants are described in Table 1. The CHAs were predominantly female, married/with a partner, mixed raced, Catholic and had complete technical training. The mean age was 41.8 years (standard deviation of 8.7).

Regarding employment data, all (100%) of the CHAs had only one employment relationship, lived in the municipality where they worked, participated in groups and ongoing education at the unit. They made an average of 135 home visits per month (standard deviation 17.6). Half of the agents had been working for more than 10 years at the unit in question and had more than 10 years of total professional experience, with the majority having previous professional experience in another service, as shown in Table 2.

**Table 1.** Sociodemographic data of Community Health Agents, Minas Gerais, Brazil, 2024.

Variables	n	%
<b>Sex</b>		
Female	9	90
Male	1	10
<b>Marital Status</b>		
Married/Civil union	6	60
Single	3	30
Widowed	1	10
<b>Lives alone</b>		
No	9	90
Yes	1	10
<b>Self-declared race</b>		
Mixed race ( <i>pardo</i> )	8	80
White	2	20
<b>Religion</b>		
Catholic	5	50
Evangelical	2	20
Spiritist	1	10
Umbanda/Candomblé	1	10
Did not answer	1	10
<b>Educational level</b>		
Secondary Education	3	30
Technical Training	4	40
Higher Education (complete/incomplete)	2	20
Post-Graduate Degree	1	10

**Table 2.** Employment data of Community Health Agents, Minas Gerais, Brazil, 2024.

Variables	n	%
<b>Frequency of group participation in the unit</b>		
Monthly	4	40
Biweekly	2	20
Weekly	1	10
No definite frequency	2	20
Other	1	10
<b>Frequency of participation in Continuing Education activities</b>		
Biweekly	6	60
Monthly	3	30
No definite frequency	1	10
<b>Length of time working at the Unit</b>		
3 to 5 years	2	20
5 to 10 years	3	30
More than 10 years	5	50
<b>Length of time of professional experience</b>		
03 to 05 years	1	10
05 to 10 years	3	30
10 to 15 years	4	40
20 to 25 years	2	20

The number of correct answers obtained in the pre-test ranged from 3 to 5 out of a total of six questions. In the post-test, it ranged from 2 to 6 correct answers. From the pre to the post-test, a small decrease in the averages was observed, from 4.7 to 4.6 correct answers. To compare the averages between the two moments, the non-parametric Wilcoxon statistical test was performed, showing no statistically significant difference, considering  $p < 0.05$  (Table 3).

**Table 3.** Pre and post intervention - Mean, Standard Deviation, Wilcoxon Test. Minas Gerais, Brazil, 2024.

Variables	Mean	Standard Deviation	Z Test	p*
Pré Intervenção	4.7	0.67	0	1.00
Pós Intervenção	4.6	1.07		

Note: p\* < 0,05, statistically significant

Regarding the thematic axes, there was a reduction in correct answers regarding the concept (15%) and diagnosis (5%); and an increase regarding treatment (20%) and prevention (10%), as described in Table 4.

**Table 4.** Pre and post intervention data - hits by thematic axis, Minas Gerais, Brazil, 2024

Thematic axes	Pre-Test (n)	%	Post-Test (n)	%
Concept	19	95	16	80
Diagnosis	11	55	10	50
Treatment	8	80	10	100
Prevention	9	90	10	100

DISCUSSION

The study conducted with Community Health Agents demonstrated a sociodemographic and work profile that corroborates other studies, in which a predominance of women (90%) was observed, with an average age of 41.8 years, self-declared mixed-race (80%) and mostly married or in a stable union (60%)<sup>12,13</sup>. These data suggest continuity in characteristics that can influence the work dynamics and interactions with the community.

The educational background of the CHAs also aligned with other studies, showing a predominance of technical training (40%) and secondary education (30%). Considering that the minimum education required for this position is primary school, other studies indicate that these professionals have an educational level higher than the minimum required, with secondary education and technical courses standing out in particular<sup>12,14</sup>.

Regarding the work profile, all CHAs live in the same municipality where they work, have a single employment relationship and 50% of them have more than 10 years of experience in the Health Unit. This stability facilitates the construction of relationships and bonds of trust with the community, which can contribute to more effective adherence to treatment, avoiding unnecessary and inconclusive consultations<sup>12,14</sup>.

Continuity in work, associated with active participation in continuing education groups and other training (as evidenced by the fact that 60% of CHAs participate biweekly) is an important factor in improving the skills of these professionals.

In this way, CHAs can offer educational actions to the population, providing information on disease prevention and control, promoting autonomy and community responsibility in the

search for better living conditions. Regarding the pre and post-test analysis on the topic of acute myocardial infarction, the average number of correct answers was 4.7 and 4.6, respectively, with a statistically insignificant difference ( $p=1.00$ ). This result may be related to the short time taken to carry out the educational intervention; the workload of the participants, since many were concerned about returning to their other activities; and the lack of an adequate environment for learning.

Previous studies highlight the difficulties in implementing a Permanent Health Education (*Educação Permanente em Saúde* - EPS) efficiently due to the workload associated with the small number of professionals, the lack of planning of EPS and the devaluation by managers, either due to decentralization or lack of knowledge on the topic<sup>15,16</sup>.

As for the thematic axes addressed in the study, some variations were observed. In the "Concept" axis, there was a 15% reduction in the number of correct answers, indicating difficulties in assimilating the concepts discussed. On the other hand, in the "Treatment" axis, there was a 20% increase in correct answers, suggesting that the CHAs better assimilated the content related to management and intervention. In relation to prevention, a crucial aspect of the CHAs' work, the number of correct answers increased by 10%.

An investigation into educational practices developed by CHAs identified some difficulties faced by these professionals, including the lack of EPS and courses aimed at chronic diseases, in addition to the scarcity of informative material to support the development of their activities<sup>17</sup>.

The lack of EPS can result in a series of problems, including difficulty in understanding the different health equipment. This gap contributes to the fragility of the referral and counter-referral flow, as pointed out by professionals who participated in a survey on mental health, which highlighted the lack of co-responsibility of basic units in relation to mental health and the need for continuous education<sup>18</sup>.

EPS practices can bring positive results. A study focused on the level of knowledge of CHAs about Diabetes Mellitus revealed a statistically significant increase in the average number of correct answers, rising from 11.67% in the pre-test to 13.47% in the post-test, demonstrating the effectiveness of EPS<sup>11</sup>.

Similarly, another study conducted with 27 primary health care professionals, which explored knowledge about systemic arterial hypertension through realistic simulations, also recorded a considerable increase in the participants' performance between tests. This underscores the importance of updating professionals and of EPS as a pedagogical approach

that challenges everyday practices and enables the construction of knowledge in a reflective manner<sup>19</sup>.

The topics need to be addressed continuously and contextualized according to the professionals' daily lives. This allows them to build knowledge through critical reflection on their practices<sup>16</sup>. In addition, assessing the knowledge of CHAs is essential to identify their potential and difficulties related to certain topics, favoring the planning of future educational interventions.

For EPS to be effective, managers and professionals need to be aware of the need to fully participate in the establishment of this policy. This will contribute to the dissemination of knowledge and result in better health actions. At the same time, professionals must take an active role in reflecting and problematizing the needs of both the unit and the users. To this end, educational interventions must be planned in a dynamic and flexible manner, following SUS guidelines<sup>15,16</sup>.

CHAs perform various activities in the context of PHC, including that of educators, since they disseminate information related to self-care and the prevention of diseases and injuries. Therefore, it is important that they are trained in relation to the topics present in the daily lives of the population.

EPS is a tool that enables professionals to stay constantly updated, allowing them to actively participate in reflecting on their practices and the issues affecting both the health unit and its users. Work overload and recognition by managers are key factors to consider.

## CONCLUSION

The results of the pre and post-test assessment on acute myocardial infarction did not show statistically significant differences. This finding raises important questions about the effectiveness of educational interventions, suggesting that factors such as excessive workload and an inadequate learning environment may have interfered with the results.

The variations observed in the thematic axes, the increase in the number of correct answers related to treatment and prevention, and the reduction in the concept indicate the areas in which these professionals demonstrate strengths and weaknesses, respectively. Therefore, it is crucial that educational interventions are continually adapted to the realities faced by CHAs on a daily basis, allowing for critical reflection on their practice and favoring significant learning.

The limitations of the study include the fact that it was carried out in only one health unit, the small number of CHAs, which does not allow for generalization of the results, and the



lack of studies related to the topic. However, it is important to highlight the importance of further research on the subject and to assess which factors interfere in the learning of CHAs in order to make EPS more effective, with repercussions in practice.

## REFERENCES

1. Ministério da Saúde (Brasil). Plano de ações estratégicas para o enfrentamento das doenças crônicas e agravos não transmissíveis no Brasil, 2021-2030 (Plano de DANT) [Internet]. Brasília, DF: Ministério da Saúde; 2021 [cited in 4 Jan 2024]. Available from: [https://www.gov.br/saude/pt-br/centrais-de-conteudo/publicacoes/svsa/doencas-cronicas-nao-transmissiveis-dcnt/09-plano-de-dant-2022\\_2030.pdf/@download/file](https://www.gov.br/saude/pt-br/centrais-de-conteudo/publicacoes/svsa/doencas-cronicas-nao-transmissiveis-dcnt/09-plano-de-dant-2022_2030.pdf/@download/file)
2. Malta DCM, Andrade SSCA, Oliveira TP, Moura L, Prado RR, Souza MFM. Probabilidade de morte prematura por doenças crônicas não transmissíveis, Brasil e regiões, projeções para 2025. *Rev Bras Epidemiol*. [Internet]. 2019 [cited in 4 Jan 2024]; 22:e190030. DOI: <https://doi.org/10.1590/1980-549720190030>
3. Nicolau JC, Feitosa Filho GS, Petriz JL, Furtado RHM, Précoma DB, Lemke W, et al. Diretrizes da Sociedade Brasileira de Cardiologia sobre angina instável e infarto agudo do miocárdio sem supradesnível do segmento ST – 2021. *Arq Bras Cardiol*. [Internet]. 2021 [cited in 4 Jan 2024]; 117(1):181-264. DOI: <https://doi.org/10.36660/abc.20210180>
4. Mendes LFS, Barros HCS, Dias JOR, Souza INB, Dias MCR, Rosa ÍF, et al. Análise epidemiológica das internações por infarto agudo do miocárdio no território brasileiro entre 2012 e 2021. *Res Soc Dev*. [Internet]. 2022 [cited in 7 Jan 2024]; 11(5):e55611528533. DOI: <http://dx.doi.org/10.33448/rsd-v11i5.28533>
5. Santos ASS, Cesário JMS. Atuação da enfermagem ao paciente com infarto agudo do miocárdio (IAM). *Revista Recien* [Internet]. 2019 [cited in 7 Jan 2024]; 9(27):62-72. DOI: <https://doi.org/10.24276/rerecien2358-3088.2019.9.27.62-72>
6. Bett MS, Zardo JM, Utiamada JL, Reckziegel JL, Santos VV. Infarto agudo do miocárdio: do diagnóstico à intervenção. *Res Soc Dev*. [Internet]. 2022 [cited in 7 Jan 2024]; 11(3):e23811326447. DOI: <http://dx.doi.org/10.33448/rsd-v11i3.26447>
7. Freitas RB, Padilha JC. Perfil epidemiológico do paciente com infarto agudo do miocárdio no Brasil. *Revista de Saúde Dom Alberto* [Internet]. 2020 [cited in 7 Jan 2024]; 8(1):100-27. Available from: <https://revista.domalberto.edu.br/index.php/revistadesaudedomalberto/article/view/668/649>
8. Malta DCM, Andrade SSCA, Oliveira TP, Moura L, Prado RR, Souza MFM. Probabilidade de morte prematura por doenças crônicas não transmissíveis, Brasil e regiões, projeções para 2025. *Rev Bras Epidemiol*. [Internet]. 2019 [cited in 4 Jan 2024]; 22:e190030. DOI: <https://doi.org/10.1590/1980-549720190030>

9. Ministério da Saúde (Brasil). Protocolo clínico e diretrizes terapêuticas do acidente vascular cerebral isquêmico agudo [Internet]. Brasília, DF: Ministério da Saúde; 2021 [cited in 4 Jan 2024]. Available from: [https://www.gov.br/conitec/pt-br/midias/consultas/relatorios/2021/20211230\\_relatorio\\_recomendacao\\_avci\\_agudo\\_cp110.pdf](https://www.gov.br/conitec/pt-br/midias/consultas/relatorios/2021/20211230_relatorio_recomendacao_avci_agudo_cp110.pdf)
10. Oliveira FF, Almeida MTP, Ferreira MG, Pinto IC, Amaral GG. Importância do agente comunitário de saúde nas ações da Estratégia Saúde da Família: revisão integrativa. *Rev Baiana Saúde Pública* [Internet]. 2022 [cited in 11 Jan 2024]; 46(3):291-313. DOI: <https://doi.org/10.22278/2318-2660.2022.v46.n3.a3771>
11. Alves AFMO, Mendes AS, Barro JA, Zuffi FB, Nicolussi AC. Avaliação do conhecimento de agentes comunitários de saúde acerca do tema diabetes mellitus após a realização de uma intervenção educativa. *Arq Ciênc Saúde UNIPAR* [Internet]. 2023 [cited in 11 Jan 2024]; 27(5):3373-89. DOI: <https://doi.org/10.25110/arqsaude.v27i5.2023-079>
12. Silva MHF, Dias TSC, Braga BAC, Lucena BTL, Oliveira LF, Trigueiro JS. Análise do perfil sociodemográfico, laboral e dos riscos ocupacionais de agentes comunitários de saúde. *Rev Pesqui (Univ Fed Estado Rio J, Online)* [Internet]. 2022 [cited in 11 Jan 2024]; 14:e11144. DOI: <https://doi.org/10.9789/2175-5361.rpcfo.v14.11144>
13. Barbosa MS, Freitas JFO, Praes Filho FA, Pinho L, Brito MFSF, Rossi-Barbosa LAR. Fatores sociodemográficos e ocupacionais associados aos sintomas de ansiedade entre agentes comunitários de saúde. *Ciênc Saúde Colet.* [Internet]. 2021 [cited in 13 Jan 2025]; 26(12):5997-6004. DOI: <https://doi.org/10.1590/1413-812320212612.15162021>
14. Cabral JF, Gleriano JS, Nascimento JDM. Perfil sociodemográfico e formação profissional de agentes comunitários de saúde. *Revista Interdisciplinar de Estudos em Saúde* [Internet]. 2019 [cited in 6 Jan 2025]; 8(2): 193-209. DOI: <https://doi.org/10.33362/ries.v8i2.1537>
15. Fonseca ENR, Cunha SMRAS, Carneiro MTD, Barbosa KKS, Batista MC, Ferreira FCR, et al. Educação permanente em saúde: desafios e potencialidades para o processo de trabalho. *Revista Eletrônica Acervo Saúde* [Internet]. 2023 [cited in 6 Jan 2025]; 23(7):e13480. DOI: <https://doi.org/10.25248/reas.e13480.2023>
16. Silva RRD, Santos TS, Ramos WT, Barreiro MSC, Mendes RB, Freitas CKAC. Desafios da educação permanente na atenção primária à saúde: uma revisão integrativa. *Saúde Coletiva (Barueri)* [Internet]. 2021 [cited in 6 Jan 2025]; 11(65):6324-33. DOI: <https://doi.org/10.36489/saudecoletiva.2021v11i65p6324-6333>
17. Rampelotto GF, Schimith MD, Corcini LMCS, Garcia RP, Perlini NMOG. Ações educativas às pessoas com hipertensão e diabetes: trabalho do agente comunitário de saúde rural. *Rev Enferm UFSM* [Internet]. 2022 [cited in 11 Jan 2025]; 12(e43):1-17. DOI: <https://doi.org/10.5902/2179769268715>

18. Sousa AM, Medeiros RB. A educação permanente em saúde como estratégia de matriciamento em saúde mental. Rev APS (Online) [Internet]. 2023 [cited in 6 Jan 2025]; 26:e262340910. DOI: <https://doi.org/10.34019/1809-8363.2023.v26.40910>
19. Nóbrega NGB, Farias AJA, Gouveia Neto JR, Neves MLS, Alves AAM, Carvalho ALA, et al. Conhecimento de profissionais da saúde em hipertensão arterial sistêmica: intervenção com cartilha ilustrativa. Revista Eletrônica Acervo Saúde [Internet]. 2021 [cited in 6 Jan 2025]; 13(1):e5417. DOI: <https://doi.org/10.25248/reas.e5417.2021>

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