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Knowledge of community health agents about visually impaired people

Conhecimento de agentes comunitários de saúde sobre pessoas com deficiência visual

Conocimientos de agentes comunitarios de salud sobre personas con discapacidad visual

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Abstract

Objective: Evaluate community health agents' knowledge about visually impaired people before and after training on the topic.

Methods: Descriptive and longitudinal study, developed in three primary health care services in a city in the interior of Ceará, between December 2019 and May 2020. The participants were 13 community health agents who worked at these institutions. The data obtained by applying the questionnaire were analyzed using *Statistical Package for the Social Sciences* and Epi-Info.

Results: most community health agents were women between 41 and 50 years of age (46.15%) and married (69.23%). More than half of the participants had only obtained a high school degree (61.54%), and the same number had taken a technical course for community health agents. As for their length of experience as community health agents, few had been working in this function for more than 20 years (38.46%) and about half worked in rural areas (53.85%). Learning was observed after the training, as the number of correct answers on common terms related to the topic increased, considering that the research participants began to understand the concepts of disabled people, inclusion and accessibility. It could be observed that none of the participants had been trained on the subject, showing the relevance of the training offered in this study.

Conclusion: After the training, an increase in the number of correct answers could be observed, as well as increased awareness about the importance of the topic, as there were people with disabilities in their activity areas.

Resumo

Objetivo: Avaliar o conhecimento de agentes comunitários de saúde sobre pessoas com deficiência visual antes e após capacitação acerca da temática.

Métodos: Estudo descritivo e longitudinal, desenvolvido em três Unidades Básicas de Saúde em um município do interior do Ceará, entre os meses de dezembro de 2019 e maio de 2020. Participaram 13 agentes comunitários de saúde que trabalhavam nas referidas instituições. Os dados obtidos pela aplicação do questionário foram analisados pelo programa *Statistical Package for the Social Sciences* e Epi-Info.

Resultados: Os agentes comunitários de saúde eram, em sua maioria, mulheres com idade entre 41 e 50 anos (46,15%) e casados (69,23%). Mais da metade dos participantes estudaram apenas até o ensino médio (61,54%), e o mesmo número participou de curso técnico para agentes comunitários de saúde. Em relação ao tempo de trabalho como agentes comunitários de saúde, poucos exerciam essa função há mais de 20 anos (38,46%) e aproximadamente metade trabalhava na zona rural (53,85%). Foi observada aprendizagem após realização da capacitação, pois ocorreu acréscimo de respostas adequadas sobre termos comuns à temática,

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uma vez que os participantes da pesquisa passaram a compreender os conceitos de pessoa com deficiência, inclusão e acessibilidade. Foi possível observar que nenhum participante tinha treinamento sobre a temática, sendo relevante a capacitação ofertada por esse estudo.

Conclusão: Após realização da capacitação, foi possível observar aumento no número de respostas corretas, sensibilização e conscientização sobre a importância da temática, já que possuíam pessoas com deficiência em suas áreas de atuação.

Resumen

Objetivo: Evaluar los conocimientos de agentes comunitarios de salud sobre personas con discapacidad visual antes y después de una capacitación acerca del tema.

Métodos: Estudio descriptivo y longitudinal, llevado a cabo en tres Unidades Básicas de Salud en un municipio del interior del estado de Ceará, entre los meses de diciembre de 2019 y mayo de 2020. Participaron 13 agentes comunitarios de salud que trabajaban en las instituciones mencionadas. Los datos obtenidos tras la aplicación del cuestionario fueron analizados con el programa *Statistical Package for the Social Sciences* y Epi-Info.

Resultados: Los agentes comunitarios de salud eran mayormente mujeres entre 41 y 50 años de edad (46,15 %) y casados (69,23 %). Más de la mitad de los participantes estudiaron solamente hasta la educación secundaria (61,54 %) y el mismo número participó en un curso técnico para agentes comunitarios de salud. Con relación al tiempo de trabajo como agentes comunitarios de salud, pocos ejercían esa función hace más de 20 años (38,46 %) y aproximadamente la mitad trabajaba en la zona rural (53,85 %). Se observó el aprendizaje luego de la capacitación, pues hubo un incremento de respuestas correctas sobre términos comunes del tema, dado que los participantes del estudio comenzaron a comprender los conceptos sobre personas con discapacidad, inclusión y accesibilidad. Fue posible verificar que ningún participante había sido capacitado sobre el tema, por lo que la capacitación ofrecida por este estudio resultó relevante.

Conclusión: Luego de realizar la capacitación, fue posible observar un aumento en el número de respuestas correctas, sensibilización y concientización sobre la importancia de la temática, ya que en sus áreas de actuación había personas con discapacidad.

Introduction

According to data from the World Health Organization (WHO), in 2019, 2.2 billion people worldwide had a visual impairment. One billion of these have a visual impairment that could have been prevented or has not yet been treated.⁽¹⁾ In Brazil, according to data from the Brazilian Institute of Geography and Statistics, in 2018, the percentage of people with visual impairment according to the new criterion is 3.4% (6,485,671).⁽²⁾

Thus, it is essential to promote the quality of life and work to prevent comorbidities in disabled people, including visually disabled people, in order to minimize future health problems. Therefore, it is important to train the health professionals who deal with these clients direct and indirectly.

It is important to highlight that one of the rights of disabled people safeguarded in the Federal Constitution of 1988 is health. Thus, the training of community health agents can guarantee the reduction of the risk of disease and other problems ensured through social and economic policies,⁽³⁾ as these professionals deal directly with care for the general population and for disabled people with disabilities, identifying their demands and needs as one of their activities.

As a particularity of their work, community health agents carry out diagnostic evaluation, search

for risk situations and referral of these cases to the health team, in addition to advising families and assisting in the implementation of local health actions, in the primary health care units, and national, in feeding the information systems of the Brazilian Federal Health Department.⁽⁴⁾

In a study focused on the perspectives of community health agents regarding the health care of people with disabilities in rural areas, the existence of barriers and vulnerabilities related to the identification and knowledge of the rights of these people assured in the laws in force in Brazil was identified. In addition, in the community health agents' statements, the need for broader training was also observed, considering that they act as the main link between the health team and the population living in their areas. In some cases, they are even called upon to perform functions their skills do not cover, which justifies the importance of other studies focused on the theme.⁽⁵⁾

Thus, the training of community health agents to deal with disabled people with disabilities benefits the entire population living in their area of work, because the targeted care improves, which is able to provide quality of life and more effective care. Therefore, it is essential to provide knowledge and expand these professionals' skills and attitudes, in order to facilitate the identification and

insertion of people with disabilities in the health service routine.^(4,6)

In this perspective, the following inquiry arose: What is the knowledge of community health agents on the subject of people with disabilities, accessibility and inclusion?

This study aimed to evaluate community health agents' knowledge about visually impaired people before and after training on the topic.

Methods

Descriptive and longitudinal study developed at three primary health care services in the interior of the state of Ceará, Brazil. The services were selected because a larger number of disabled people lived in the area. The data were obtained from December 2019 until May 2020, and data collection took place by completing a form.

Thirteen community health agents participated, that is, the total number the services selected for the study presented. Community health agents were included who worked in the area that makes up the primary health care services participating in the research. Community health agents who were on vacation and on health leave during the collection period did not take part in the study. All agents working in the services that composed the survey were invited and participated in the activity.

The data collection consisted of four stages. The first concerns the search and selection of material for use in the training of community health agents about disabled people. The material was selected from the Manual on Accessibility and Inclusion of Disabled Students in Basic Education,⁽⁷⁾ which contains topics focused on the historical and cultural perspectives of disabled people, accessibility and inclusion. In this stage, the Primary Health Care Services and community health agents who would receive an invitation were also selected

The second stage consisted in the presentation of the project to the city's Health Coordination department. After an appointment had been made on a pre-set date and in a private room, the objectives of the research and the activities the community health agents

would engage in were expressed. Then, they were invited to participate in the training and the study.

In the third stage, after the acceptance and signing of the Informed Consent Form, a form that had been validated in a previous study was applied, adapted to the public⁽⁸⁾ and called "pre-test", aiming to evaluate the community health agents' prior knowledge on the subject. The form presented objective and subjective questions about disabled people (training, relationship, communication and assistance) and was used in the pre-and post-test.

In the same stage, all agents received training during a lecture held in a private room at the Primary Health Care Service. The hour load of the training was 40 hours, including four hours of theory (lecture on the contents, time for questions and discussion) and 36 hours of practice (home visit to visually disabled people). In addition, a registration form was completed to collect these community health agents' sociodemographic profile data.

The final stage was the application of the questionnaire, called post-test, when the same questionnaire as in the pre-test was applied, with the same number of questions. This stage was executed through telephone calls, due to the current situation of the coronavirus pandemic (Covid-19), and was intended to compare and assess the knowledge the community health agents had gained after the activity. The post-test should be applied at least one day after the intervention; in this study, it was applied three months later.⁽⁹⁾

The data was processed and analyzed in *Statistical Package for the Social Sciences*, version 20.0, which presented the analysis of pre-and post-test data in tables through the McNemar chi-square test. To obtain the confidence interval of the descriptive data, Epi-Info version 7.2 was used. Approval for the project was obtained from the Research Ethics Committee of the higher education institution where the research was carried out, under opinion n° 3.999.424.

Results

The study participants were 13 community health agents, mostly women (12; 92.31%), half between

41 and 50 years of age (6; 46.15%), mostly married (9; 69.23%), and little more than half only held a secondary education degree. The same number participated in a technical course for community health agents (8; 61.54%).

As for their length of experience as community health agents, few had been working in this function for more than 20 years (38.46%) and about half worked in rural areas (53.85%). Furthermore, most of the participants stated that the training was relevant and, after the training, they believed it was essential to address this topic more often (11; 84.6%).

Focusing on the data surveyed about their activities with disabled people, almost all agents said they had already provided care to the target audience of this study (12; 92.31%). More than half said they had adapted the care to better assist them (7; 53.85%), although no inferences were possible as to the correctness and fitness of this adaptation.

The survey data showed that most of the agents stated that there was no accessibility in their work area and also indicated that there were no access conditions for disabled people (10; 76.92%).

Table 1 describes the analysis of these professionals' knowledge in the pre-and post-test on the common concepts of this topic.

Table 1. Pre-and post-test for analysis of the community health agents' knowledge about people with disabilities

Items	Pre-test		Post-test		p-value*
	Error	Correct answer	Error	Correct answer	
What is the concept of a disabled person?	12(92.3)	1(7.7)	9(69.2)	4(30.8)	0.250
What is the concept of accessibility?	5(38.5)	8(61.5)	2(15.4)	11(84.6)	0.250
What is the concept of inclusion?	7(53.8)	6(46.2)	1(7.7)	12(92.3)	0.031

Results expressed by n (%); * statistical test: McNemar Chi-square

We highlight the positive change in the number of correct answers regarding the topic of inclusion (p=0.031), from six to 12 correct answers, and the improved results of the discussion about disabled people (p=0.250) and accessibility (p=0.250), even without clear significance.

In the pre-test, 12 agents were not familiar with the concept of disabled people. In the post-test, the knowledge was gained as, after the training, the

number of correct answers increased from one to four (30.8%).

Regarding the concept of accessibility (p=0.250), three (60.0%) of the five agents who stated that they did not know the term at first appropriately expressed the correct alternative in the application of the post-test, totaling 11 (84.6%) correct answers on the topic.

When asked about what they considered to be inclusion, six (85.7%) had expanded their knowledge as, after the training, 12 (92.3%) presented correct answers. This item showed a significant statistical difference, with a p-value of 0.031.

Based on McNemar's chi-squared test, Table 2 displays the community health agents' knowledge before and after the training.

Table 2. Knowledge of community health agents about visually impaired people

Items	Error	Pre-test Correct answer	Post-test		p-value* Correct answer
			Error	Error	
Does the visually impaired communicate through writing?	4(30.8)	9(69.2)	2(15.4)	11(84.6)	0.625
What technologies are used for the blind to orient themselves while walking on the street?	2(15.4)	11(84.6)		13(100.0)	†
How can the blind get information?	2(15.4)	11(84.6)	2(15.4)	11(84.6)	1.000
What sign allows the blind to cross the pedestrian lane safely, without needing the help of others?	2(15.4)	11(84.6)	2(15.4)	11(84.6)	1.000

Results expressed by n (%); * McNemar chi-square statistical test; † processing not feasible due to loss of assumption (PXP table)

Among the participants, four (30.8%) initially got the question about how visually disabled people communicate wrong, but gave a correct answer after the training, adding knowledge. Thus, 11 (84.6%) correct answers were obtained (p=0.625) in the post-test.

Discussion

According to data on the community health agents' sociodemographic profile, most participants are female. This significant aspect characterizes most of the health teams. The image of women as community health agents is associated with the act of car-

ing, guiding, and watching over the physical and social well-being of every family. Therefore, the profession of community health agent ends up being considered a female profession.⁽¹⁰⁾

Before the training, three of the agents were unaware of the concept of disabled people. The post-test data showed that the three agents who had wrongly answered this question understood the concept correctly. Hence, the professionals' knowledge on the theme may have come from external sources (television, radio, communication with other people, etc.), as none of them had been trained on the topic.

The concept of disabled people has undergone some changes over the years and is still changing. According to law 13.146/15, however, known as the Statute of Disabled People, disabled people can be defined as "people with long-term physical, mental, intellectual or sensory impairment that, when interacting with one or more barriers, can obstruct their full and effective participation in society under the same conditions as other people".⁽¹¹⁾

In this context, based on a study conducted with the population in question on the construction of the concept of disability, it can be argued that hearing-impaired people accept the designation deaf and visually-disabled people accept the term people with visual impairment and/or blind, while those with motor disabilities dismissed the expression people with physical disability and wheelchair users.⁽¹²⁾

Disabled people are part of the community health agents' work process, as the latter are responsible for registering the families. This process does not consider the particularities and definitions of each type of impairment though.⁽⁵⁾ This justifies training on the specificities of each impairment, promoting continuing education for these professionals.⁽⁵⁾

Regarding accessibility, eight agents gave correct answers on the concept of this term in the pre-test. After the training, 11 of the agents gave correct answers on this concept, that is, only two participants got the questions on this topic wrong (the same agents who gave wrong answers in the pre-test continued to do so in the post-test). In the post-test, ten professionals argued that there are no access conditions for disabled people in their work

areas, ranging from their homes to the route to the health service.

According to the Brazilian Technical Standard 9050/20, the concept of accessibility is the possibility and condition to reach the service, the perception and understanding for the safe and autonomous use of buildings, space, furniture, urban equipment and elements.⁽¹³⁾

In a study on disabled people undertaken in Maciço de Baturité, a region close to the state capital Fortaleza, it could be evidenced that the access to the health service building involved inaccessible stairs, ramps and floors, besides partially accessible doors in terms of width and the absence of physical obstacles.⁽¹⁴⁾

Considering that community health agents serve as the main communication link between the population and the health services in Brazil, gaining knowledge on the accessibility of the health service facilities contributes to the user welcoming process and helps to grant this population essential and necessary care to improve their quality of life and reduce risks.⁽¹⁵⁾

With regard to the question about the concept of inclusion, half of the participants have knowledge about the subject. In the pre-test, on understanding by inclusion, six participants gave a satisfactory answer regarding their understanding of inclusion. In the post-test, six of the participants who had given a wrong answer responded correctly.

It is important to recall that inclusion advocates that family and society adapt to the needs of disabled people, enabling access to a wide range of public services to achieve equal opportunities for all.⁽⁶⁾ Thus, one may affirm that the community health agents understood the concept of inclusion.

The study revealed that the agents had no background training on disabled people, although 12 of them affirmed that they provide care to these people. The training provided in this study is relevant. Thus, 11 participants argued that the training is relevant and, after the training, they believed it is essential to address this topic more often.

When the items exclusively related to visually disabled people are analyzed, learning was perceived with regard to blind people's orientation in the

streets and the way information is obtained, in view of a larger number of correct answers in the post-test when compared to the pre-test. It is important to highlight that learning specifically about visually disabled people was not that relevant, therefore presuming background knowledge from different sources, as the community health agents claimed that they had not received any training on the topic. When compared to the discussion on the general topic of disabled people, training/learning on the concept, classification, inclusion, accessibility and assistive technology was more effective.

Most participants correctly answered the pre-test question on how visually disabled people write, a number that increased in the post-test. Furthermore, the agents knew and expanded their knowledge on Braille as the written communication form visually disabled people use, although some agents claimed that this was writing in relief.

Braille is a tactile reading and writing system developed for blind people, which represents the elements of language by means of dots.⁽¹⁶⁾ Without sight, information capturing takes place through another sensory pathway, mainly touch and hearing.⁽¹⁷⁾

Regarding how blind people can get information, two participants who gave wrong answers in the pre-test showed correct answers in the post-test, affirming that audio recordings (spoken books), the use of readers (people who read to blind people) and voice synthesizer *software* are resources that help and facilitate these clients' routine. Such resources are called assistive technologies, known as the full range of resources and services that contribute to adapting or expanding disabled people's functional skills, promoting their safety, independence, autonomy and inclusion.⁽¹⁸⁾

With regard to visually disabled people, the use of assistive technologies can promote a better quality of life. A study on awareness-raising and barriers to get access to assistive technologies for visually impaired youth in India shows that it is paramount for health institutions and professionals to gain knowledge and outline strategies to implement assistive technologies in their care process, as these would promote inclusion and independence for disabled people, enhancing their empowerment and autonomy in care.⁽¹⁹⁾

As for the questions about how blind people can get information and about the signal that allows them to use the pedestrian crossing safely without needing help from others (beep), two agents gave an ineffective response in the pre-test and continued to do so in the post-test.

Thus, new educational interventions are needed to further the community health agents' knowledge to enable them to understand aspects of visually disabled people, with a view to tackling future complications and potential health risks. Nurses can serve as important mediators in this process.

This study granted the health professionals learning and knowledge. After training, the increased number of correct answers on common terms in the topic stood out (disabled person, inclusion, assistive technology, accessibility, orientation of blind people in the streets and how to get information). This knowledge will help these professionals to have a sensitive look and act on this public's demands, encouraging other professionals on the same issues.

Study limitations include the small number of participants and the need for adjustments to the previously validated tool used in the study, as the community health agents were confused when answering some items. In the future, research on these professionals' knowledge of other disabilities is also possible, aiming to propose future strategies and training with a view to safe and effective actions involving as many disabled people as possible. Furthermore, assessments of the community health agents' training process should be possible to support the identification and development needs.

Conclusion

The community health agents gained knowledge through the proposed training. New educational interventions are needed that enhance the community health agents' knowledge, so that they can understand aspects related to this public and adapt the care practices towards high-quality care. Although learning was observed, the educational activities need to be pursued and public policies need to be developed for the continuing education of community health agents. In this

perspective, nurses are essential because they act as facilitators who are able to provide and expand health knowledge. Although regulated by public policies in force in Brazil, the rights of disabled people are not guaranteed, mainly in the current context of dismantling social policies. In most cases, it results from the civil society's mobilization. Thus, the empowerment and dissemination of information about the public, aimed at all health professionals, including community health agents, are of significant relevance in the implementation of the legislation in force.

Collaborations

Oliveira PMP, Medeiros Aejs, Luzia FJM, Silva GM, Bezerra JC, Beserra GL, Costa EC and Grimaldi MRM declare that they contributed to the design of the project, analysis and interpretation of the data; writing of the article, relevant critical review of the intellectual content and approval of the final version for publication.

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