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PHOTOEDUCATION TO PREVENT SKIN CANCER IN COMMUNITY HEALTH AGENCIES IN A MUNICIPALITY IN THE METROPOLITAN REGION OF RECIFE: AN INTERVENTION STUDY

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Abstract: Skin cancer is the most common neoplasm in the world, with several subtypes and different forms of progression and prognosis. The main ones are squamous cell carcinoma and basal cell carcinoma, generally associated with a better prognosis and with high incidences worldwide. Melanoma is a subtype with a high potential for metastasis and is associated with high mortality every year. It is estimated that in 2040 there will be around 500 new cases of melanoma in the world. The main risk factor for the development of skin cancer is solar exposure to ultraviolet rays, especially type B. In this intervention study with Community Health Agents from three Basic Health Units in Jaboatão dos Guararapes-PE, a series of health education actions with professionals. To this end, multimodal research strategies, health education tactics, evaluation by dermatologists, and questionnaires were used. To evaluate the results, Descriptive Statistics and Content Analysis were used, as well as clinical-dermatological evaluation of the CHAs after the actions developed. The results showed that most CHAs already have prior knowledge about prevention; Most CHAs noticed the appearance of new skin spots after starting their profession. Furthermore, potentially dangerous lesions were identified in some of the patients during dermoscopic examination. CHWs are subject to a way of working that greatly increases the relative risk of developing skin neoplasms, but there are low-cost and easy-to-implement interventions that reduce risks.
Keywords: Skin Cancer. Community Health Agents. Primary Health Care.

INTRODUCTION

Skin cancers affect the superficial layer of the epidermis and are ultimately caused by the unrestrained multiplication of epithelial cells – a mechanism common to all types of neoplasms. In the case of skin cancer specifically, the DNA mutations that trigger this spread of cellular mitosis are mainly related to direct damage from ultraviolet radiation emitted by the sun (SKIN CANCER FOUDANTION, 2023).

It is important to highlight a non-classic risk factor, which is artificial tanning beds, as they emit enormous amounts of ultraviolet radiation for aesthetic purposes and are increasingly being identified as a considerable risk factor, according to the Skin Cancer Foundation (2023), United States observer body for dermatosis issues.

Still at a global level, the Global Burden of Cutaneous Melanoma in 2020 and Projections to 2040 study (ARNOLD et al., 2022) estimated that in 2020 there were more than 300 thousand new cases of melanoma, the most aggressive type of skin cancer, with almost 60 thousand deaths around the world. Furthermore, they concluded that if the rate of growth continues to increase, by 2040 there could be almost half a million cases per year (an increase of more than 50% and almost 100 thousand deaths (ARNOLD et al. 2022) – not counting cancers that are not melanoma.

Bringing it to the Brazilian reality, data from the National Cancer Institute (INCA) between 2016 and 2020, show that there were around 800,000 new cases of cancer in Brazil during this period. Of this total, around 40% of new cancer cases in the country were related to the diagnosis of non-melanoma skin cancer, that is, especially basal cell carcinoma (BCC) or squamous cell carcinoma (SCC) (INCA, 2019).

Even though there is a high incidence, the lethality of non-melanoma skin cancer

is greatly reduced. Making a counterpoint, melanoma skin cancer, which is responsible for approximately 0.5% of neoplasm cases as a whole, however has a high lethality, even greater when discovered in advanced and metastatic stages (ARNOLD et al., 2022; INCA, 2003).

The melanoma type still has a much higher metastatic potential than the others and, if discovered in more advanced stages, only palliative treatment aiming at a better quality of life can be instituted. It is possible that hematogenous or contiguity spread to other organs and systems, such as the central nervous system, gastrointestinal tract, spine and lungs, has already occurred, very silently (SILVA et al., 2022).

Given the emergence of this health problem, it is important to highlight exposure to ultraviolet (UV) A and B light as the main risk factor for the development of the disease,

mainly in the first 20 years of life (CEBALLOS et al., 2014). One of the main precautions is to avoid prolonged exposure to the sun between 10 am and 4 pm, since it is at this time that a high incidence of UV radiation occurs, which is extremely harmful to health, especially without adequate protection (INCA, 2019).

Still talking about risk factors, we highlight the genetic predisposition and positive family history for skin cancer in first-degree relatives regardless of the type of skin cancer (SILVA et al, 2022), in addition, of course, to overexposure to sunlight (INCA, 2015 or artificial tanning equipment based on UV rays (ARNOLD et al., 2022).

These last two are causes of erythema, burns, skin thickening, photodermatosis, among other dermatological exacerbations of systemic diseases, such as Systemic Lupus Erythematosus (SLE) and Scleroderma; We also mention radiation-induced photoaging (ACADEMIA BRASILEIRA DE DERMARTOLOGIA, 2014).

It is necessary to confirm that among cancers, skin cancer is the most common type in Brazil and the world (INCA, 2019). This is due to several risk factors, such as the tropical climate, the practice of artificial tanning, the absence of the use of sun blockers or even the absence of the use of adornments that favor protection against excessive exposure to solar radiation (INCA, 2019).

The fact that many workers carry out their work activities outdoors and, as a result, are increasingly exposed to the main risk factor, is a crucial point when thinking about public health measures (INCA, 2021).

To delve into the specific issue of CHWs, it is necessary to highlight the bases on which they operate, in terms of work organization and rights. Regarding this, the Family Health Program (PSF) was created in 1994, but since 2006 it has been called the Family Health Strategy (ESF). This strategy states, on the basis of the National Primary Care Plan (PNAB), the need to focus, through prevention, promotion and protection actions, on workers' health (BRASIL, 2011; BARROS, 2014).

Regarding this labor issue, most of the activities of community health agents (CHA) occur outside the limits of the Family Health Unit (USF). Consequently, there is greater exposure to environmental elements, such as humidity, winds and, of interest to this study, ultraviolet radiation (URSINE; TRELHA; NUNES, 2010).

As they constituted a new professional category in the 2000s, CHWs have not recently begun to be targets of observational or interventional scientific research – just like this one – with the aim of better understanding the relationships of these professionals with the environment in which they live. live (URSINE; TRELHA; NUNES, 2010).

Therefore, it is necessary to pay attention to the exposure of CHWs to UV rays, since

this environmental factor, even though it has benefits in very small quantities, also poses risks, particularly premature aging and skin cancer, in addition to injuries. benign with a strong aesthetic component (CEBALLOS et al., 2014).

In addition to this, it is important to point out that community health agents themselves can be a channel for disseminating information about preventive measures for skin cancer. However, in order for them to be able to replicate such information, professionals need, first of all, the awareness of self-care and the technical capacity to carry out these health interventions (MACIEL et al., 2009).

Still citing the article by Maciel and Collaborators (2009), they were very successful in demonstrating, even in the 2000s, that CHWs attached great value to health education, but encountered technical difficulties. So much so that one of the central ideas obtained in this qualitative study was that health education is "difficult to do", but also that it is based on "example", that is, on the professional himself doing what he is teaching the population assigned to do (MACIEL et al., 2009).

But, despite this being a commonplace among CHAs and researchers themselves, it must be taken into consideration, that the sometimes-excessive workload, predominance of females and functions that go beyond those legally standardized, mean that ACSs have significant repercussions on global health (SANTOS; HOPPE; KRUG, 2018).

The aforementioned authors highlight that each Brazilian city has a distinct geographic, climatic, social and cultural reality and that the work of community agents is directly conditioned to this. In the study they conducted, they observed that professionals report significant affective, cognitive and physical suffering resulting from the daily practices of the profession (SANTOS; HOPPE; KRUG, 2018).

This context becomes even more worrying when we evaluate the climate issue, especially in the Northeast region, given the location closer to the Equator and the greater incidence of sunlight throughout the year (MEYER; SILVA; CARVALHO, 2012).

Thus, knowing that this region receives a very high average amount of UVB radiation, it is inferred that individuals are exposed to an excessive amount of radiation, requiring various forms of multimodal protection (MEYER; SILVA; CARVALHO, 2012).

Considering these premises, this study aims to evaluate the results of the instruction of CHAs in the Municipality of Jaboatão dos Guararapes/PE, through the development of health education actions regarding photoprotection measures, as well as direct evaluation of skin conditions of professionals. This is in line with some works published in the literature, such as that by Araújo and collaborators (2016), who identified a prevalence of dermatological lesions, especially melanosis, in almost 100% of the workers they investigated.

Furthermore, the same authors allude to the relative difficulty in putting photoprotection measures into practice, showing that the problem is not just one of mere knowledge or not of the risks, but of generating engagement and providing material conditions for this (ARAUJO et al, 2016).

More recently, Santos and collaborators (2023) showed that, despite men being the absolute minority among CHWs in the research sample, they have less careful habits regarding photoprotection. Furthermore, around half of all CHWs interviewed did not report a level of concern consistent with reality (SANTOS et al., 2023), confirming the point of this study regarding the need for health education and training for professionals.

In a case study, Lima et al. (2010) demonstrated that 100% of the CHWs participating in the research had skin changes related to their work practice. Most professionals did not have an adequate level of information about the risks and did not have the simple habit of carrying out self-examination in search of suspicious injuries (LIMA et al., 2010).

The present study goes precisely along these lines, having health education as one of its axes so that they can use knowledge for themselves and also spread it to other members of the community in which they are enrolled and inserted.

MATERIALS AND METHODS

STUDY DESIGN

The present study is characterized as an epidemiological study of an eminently descriptive nature, as its main purpose is to explain the relationships involved between work variables (GERHARDT; SILVEIRA, 2009). Furthermore, this is a cross-sectional intervention study, which takes place within a well-defined and circumscribed time frame.

In terms of approach, quantitative is the main strategy for collecting and evaluating the results obtained, with few qualitative approach elements; ultimately configuring a quali-quanti study, which gives more solidity to the results obtained (GIL, 2002).

The procedural strategy used was multimodal, as recommended by Gerhardt and Silveira (2009): bibliographical research, documentary research, literature review, application of a semi-structured questionnaire and a case study. Each of the strategies served as the basis for the others, giving more solidity to the study – both through the use of several techniques and their cohesion with each other.

Continuing, descriptive research has as its main objective the definition of the characteristics of a given population or phenomenon or the establishment of relationships between variables proposed in the study (GIL, 2002). The research project aims to analyze the prevalence of skin cancer (outcome) among Community Health Agents in the city of Jaboatão dos Guararapes-PE, located in the Metropolitan Region of Recife (RMR) and the variables linked to the phenomenon: time and duration of exposure occupational sun exposure and photoprotection measures implemented by the aforementioned professionals.

According to this author (GIL, 2002), the cross-sectional research model presents itself as an instantaneous cross-section of a given population through sampling, describing a situation or phenomenon at a defined moment; therefore, it differs from retrospective or prospective studies, which rely on the time interval between exposure and outcome as the basis of the study.

For the quantitative approach, Oliveira (2002) and Gerhardt and Silveira (2009), state that it means translating information and opinions into numbers to be classified and analyzed, and statistical resources and techniques can be used. In general, Basic Statistics and Simple Arithmetic are able to summarize the quantitative results in these types of research (GIL, 2002).

STUDY SETTING AND POPULATION

The research universe comprises all Community Health Agents in the municipality of Jaboatão dos Guararapes-PE. Arbitrarily and due to the researchers' greater ability to contact certain units, three Health Care Units (USF) were defined located in the city. Those chosen were: USF Guararapes I and II, USF Santa Felicidade and USF Massaranduba do Campo.

To recruit research individuals, contact was initially made with the unit managers,

who passed on the study objectives to the CHAs. Given the acceptance and availability of the Leopoldina Tenório Polyclinic, which offers continuous dermatological monitoring, the research subjects were then taken to the aforementioned center. Regarding the participating USFs, it was noted that they all have a minimum team available, according to the population they serve and the requirements of the Unified Health System.

DATA COLLECTION AND SOURCE

Data collection was carried out through the development of a semi-structured questionnaire, with open and multiple-choice questions. It was applied during interventions with the CHAs, where interventions aimed at protecting chronic unprotected sun exposure were carried out (Appendix 1). All research participants were approached 1 by 1, the objective of the research was explained, the possible positive returns not only for them but for the entire community of CHAs and, given their agreement to participate in the experimental study, the Free and Clarification available in Appendix 2 was duly signed

After collecting data from the professionals who will be assisted by the project, the team will carry out a situational diagnosis of the working conditions of the CHAs, to fill out a semi-structured questionnaire.

Through photographic records during the dermatological examination, the progression of skin lesions in Health Workers over the months will be assessed.

DATA ANALYSIS

Initially, a database was created in Microsoft Office Excel® software, with records of selected articles and tabulation of the results obtained. After this phase, simple statistical measures were used, as explained in the previous section, to determine measures of central tendency and other purely arithmetic measurements to support the analysis.

With regard to qualitative data, they were subjected to a critical-reflexive analysis of the discourse, based mainly on the theory of Content Analysis by Bardin (1997), using as a base scientific work that developed by the Brazilians Mendes and Miskulin (2017), who revisited the work of the French author, resulting in a substantiated work that duly refers to him.

INCLUSION CRITERIA

- Community Health Agents from the three USFs referred to and who undertake external work, with sun exposure.
- Professionals ≥ 18 years old.
- Individuals who signed the TCLE after a thorough explanation and guarantee of confidentiality of the data obtained.

EXCLUSION CRITERIA

- Other USF health professionals who were not ACS.
- CHA who did not agree to participate in the research.
- Individuals < 18 years old.

ETHICAL CONSIDERATIONS

Initially, a conversation was held with all the ACS, where the pillars of the University were explained, with the need for Teaching, Research and Extension. Soon after, a moment was held to resolve doubts and, only after a thorough explanation and in accessible language about the research objectives, were the informed consent forms handed out for signature. Research participants were aware that they could withdraw from the study at any time without the need for prior notice or any costs involved.

Furthermore, permission was requested from the Municipal Health Department of Jaboatão dos Guararapes-PE to carry out the research with human beings, in compliance

with national and international regulations. After a maximum period of 5 years, all files will be destroyed.

It is worth noting that the research carried out will involve human beings, with the anonymity of the participants being respected, and no name or image that could identify them will be presented.

The present study was submitted to the Ethics Committee of Faculdade Integrada Tiradentes (FITS) and previously authorized by the Health Education Coordination of the Municipal Health Department of the city of Jaboatão dos Guararapes - PE after presentation of the action research proposal.

RISKS AND BENEFITS

It was explained to patients that the risk associated with the research is only that of data leakage, but that these will be stored responsibly and only with access to research members. Furthermore, research participants may feel embarrassed when exposed during the dermatological examination.

Furthermore, there was a risk of infectious diseases, particularly Coronavirus Disease 19, COVID-19, since there was direct contact between researchers and CHAs, during the pandemic of that disease. This was mitigated through the correct and appropriate use of Personal Protective Equipment, such as masks, gloves and aprons.

On the other hand, the opportunity that the project brings to everyone involved is highlighted, to improve and enrich knowledge related to skin cancer, ranging from prevention, diagnosis and treatment measures, to obtaining data related to the impacts that this pathology can generate in the population.

Health education, in addition to the experimental approach of the study itself, aims to promote the autonomy of CHWs and make them even more capable of controlling modifiable risk factors related to a disease with considerable aggressive potential.

INSTRUMENTS USED

Skin CA screening was carried out at USF Guararapes I and I, Massaranduba do Campo and Santa Felicidade. During the interview with the CHAs, a semi-structured questionnaire with several questions was made available.

To this end, the questionnaire had open and multiple-choice questions. The questions aimed to outline a sociodemographic profile of the research participants. This supports possible inferences between the assessed outcomes and risk factors identified after linear regression studies.

Ultimately, clearly identifying sociodemographic risk factors and allowing increasingly assertive and efficient preventive actions.

RESULTS

In total, four Basic Health Units joined the Extension Project that gave rise to this article. These units were as follows: Praça de Casa Forte, USF Guararapes I and II (operating in the same building), USF Massaranduba do Campo and USF Santa Felicidade, all located in the municipality of Jaboatão dos Guararapes/PE.

Regarding the research subjects, from the universe of CHA present in the city, a total of 11 professionals (n = 11) community health agents from the aforementioned units freely and expressly agreed to participate in the intervention project explained here. All research participants are female. Regarding ethnicity, 72.7% identify themselves as mixed race, 18.2% as white and 9.1% as black.

All participants (100%) have been working as CHWs for more than 5 years. Among the 11 participants, 81.8% knew the risks of sun exposure. Regarding the time of sun exposure,

63.6% reported exposure of more than 06:00 a day, 27.3% reported exposure between 1 and 03:00 a day, while 9.1% said they had between 03:00 and 05:00 a day of sun exposure.

Regarding the time of sun exposure: 63.6% reported exposure between 09:00 and 11:00, 27.3% between 11:00 and 13:00, while 9.1% reported exposure between 07:00 and 09:00.

Regarding the questionnaire with open-ended and multiple-choice questions, 100% of CHWs use some photoprotection measure daily, whether chemical or physical. 90.9% report using sunscreen, 54.5% report using a UV shirt, 54.5% use an umbrella/umbrella, 63.6% report using a hat/cap, 36.4% report use of sunglasses and 9.1% report using sun protection gloves.

Regarding dermatological issues, 90.9% had some spot on their skin before working as a CHA and 81.8% noticed the appearance of a new spot on their skin after starting work as a CHA. Still regarding the lesions, 20% reported skin asymmetry, 20% reported irregular edges, 60% noted variable color of the lesion, 20% reported change in diameter and 30% noted evolution of the lesions (ABDE screening criteria for melanoma).

DISCUSSION

Initially, this study found a 100% prevalence of female CHWs. Although the sample was small, this result is not even close to what is found in general reality. In fact, work as ACS is culturally and historically attributed to women in Brazil (BARBOSA et al., 2012).

There is a sociocultural conformation in our country that delegates the role of "caregiver" to women; Somehow, this role extended to community health agents, who have this role of "taking care of the community". This gives rise to the social distribution of work based on gender, making women predominant figures in this CHA role and which brings with it advantages and disadvantages (BARBOSA et al., 2012) – which is beyond the scope of this study.

Confirming this high female presence, in a study conducted by Castro et al. (2017), among 145 ACS, 81.3% were female. Following the same line, while in the present study around 72% of participants identified themselves as brown, in the study by Castro et al. (2017) this rate dropped to around 60%, while blacks were 22% (in this study, less than 10%.

It is worth noting that the relative similarity between studies in terms of ethnicity cannot be generalized, given that the country is continental and that there are other places where studies conducted with CHWs have a majority of self-declared white participants. Even so, an ethnological issue behind the profession can be raised in specific work (CASTRO et al., 2017).

Regarding sun exposure time, more than 70% of CHAs are exposed to the sun for at least 3 hours a day, with the majority spending more than 6 hours. As mentioned at the beginning of this work, sun exposure is the main risk factor for the development of skin lesions that can degenerate into skin cancer (INCA, 2019).

Added to this is the fact that the ACS in this research expose themselves to the sun precisely during the period considered to be at greatest risk by the National Cancer Institute, which is between 10 am and 4 pm (INCA, 2019). In this survey, less than 10% use the time before 9:00 am to carry out activities outdoors, something that is recommended by the Brazilian Society of Dermatology (2014).

It is necessary to point out that the diagnosis or even suspicion of cancer is not always immediate. Sometimes, these types of neoplasms take decades to show their first signs, so much so that a study found that the most common patient admitted with a diagnosis of cancer to a tertiary hospital in Brasília was a woman over 60 years old with a

history of exposure. solar (REZENDE FILHO NETO, 2020).

A positive point found in this study was the high adherence to photoprotection measures, whether physical, chemical or mixed. For example, all participants reported consciously using some device to protect against sun exposure, the most common (>90%) being sunscreen.

This finding is very much in line with what the Brazilian Society of Dermatology preaches regarding photoprotection, indicating the need to use topical sunblocks or sunscreens to avoid harmful interactions between ultraviolet rays and human skin (SBD, 2014).

They also add that the so-called "photoeducation" involves a set of simple practices, teachings and transposition of content about skin care, signaling to a certain group of people the negative consequences of indiscriminately exposing themselves to solar radiation (SBD, 2014).

When it comes to ACS, photoeducation becomes even more urgent and necessary, given all the time they spend under the sun and possibly without the necessary physical and chemical devices to protect themselves (SANTOS et al., 2022).

In fact, all CHWs participating in the study reported that prior to working as CHWs they already had non-specific skin lesions, but that after the start of the new working day, more than 80% noticed changes in the lesions or the appearance of new ones. Some even reported changes compatible with an increased risk for the presence of melanoma. These changes are known by the ABCDE mnemonic and constitute an excellent identification tool.

early detection of potentially malignant lesions (DARIVA et al., 2017).

According to Dariva and collaborators (2017, p. 3).

> In the physical examination, the ABCDE rule is usually used to evaluate skin lesions, with the letter A corresponding to asymmetry, B to irregular edges, C to color and D to diameter (risk lesions are 6 mm or more) and E evolution (change in the appearance of the lesion).

As explained in the Results section, some participants were screened for these changes. Subsequently, they all underwent dermatological evaluation by a professional with experience in the area, which covers another arm of this research and will not be discussed here.

CONCLUSION

Skin cancer has a high prevalence in Brazil and around the world, with a tendency to increase in the coming decades. Non-melanoma cancer is the most prevalent, however melanoma has greater metastatic potential and much higher lethality.

Early detection, photoprotection and photoeducation actions are essential aids in the fight against skin cancer.

In this study, all participants were female and declared themselves mostly black or mixed race, a result consistent with previous research and with the region of the country studied (Northeast) – although it overestimated the number of females within the universe of ACS.

Furthermore, gaps in the knowledge of the CHWs were identified, but they had excellent responses to photoeducation and photoprotection proposals.

Furthermore, potentially serious skin lesions were identified in some participants, as expected, due to the increased load of sun exposure and the length of time working as a CHW.

Specific dermatological measures were taken and will be discussed in another work from this Extension Project.

Finally, the majority of research participants had increased self-reported learning after

health education interventions, with greater ability to discern between potentially serious injuries and those without severity predictors. Furthermore, there was an increase in the photo-education of CHAs, who deemed it pertinent to share the knowledge acquired with the rest of the community, whether during home visits or during times outside of work.

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