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# Attitudes and Practices towards the Solar Exhibition of the Postmen of the Municipality of Juazeiro do Norte-CE

Actitudes y Prácticas frente a la Exposición Solar de Carteros en el Municipio de Juazeiro do Norte-CE

Atitudes e Práticas face à Exposição Solar dos Carteiros do Município de Juazeiro do Norte-CE

## ABSTRACT

Work-related diseases can be classified as a Public Health Problem (PSB), as they affect an important number of individuals and are liable to become the object of individual or collective actions for their prevention and control in population terms. **OBJECTIVE:** To analyze the attitudes and practices towards the sun exposure of postmen in the Municipality of Juazeiro do Norte-CE. **METHOD:** Cross-sectional cohort study focusing on the quantitative approach. **RESULTS:** Postmen expose themselves to the sun at inappropriate times and that most of the interviewees expose themselves to the sun around 1:00 pm to 5:00 pm, the period of the day when UVA and UVB radiation are most prevalent. **CONCLUSION:** We found that postmen from the city of Juazeiro do Norte-CE constitute a group susceptible to skin diseases, such as skin cancer, since most of them, in relation to the skin phototype, were evaluated as having Type II skins. and III.

**DESCRIPTORS:** Public health; Skin Neoplasms; Dermatology.

## RESUMEN

Las enfermedades relacionadas con el trabajo se pueden catalogar como Problema de Salud Pública (PSB), ya que afectan a un número importante de personas y pueden convertirse en objeto de acciones individuales o colectivas para su prevención y control en términos poblacionales. **OBJETIVO:** Analizar las actitudes y prácticas frente a la exposición solar de carteros del Municipio de Juazeiro do Norte-CE. **MÉTODO:** Estudio de cohorte transversal con enfoque cuantitativo. **RESULTADOS:** Los carteros se exponen al sol en momentos inapropiados y que la mayoría de los entrevistados se exponen al sol alrededor de las 13:00 a las 17:00 horas, período del día en que las radiaciones UVA y UVB son más incidentes. **CONCLUSIÓN:** Encontramos que los carteros de la ciudad de Juazeiro do Norte-CE constituyen un grupo susceptible a enfermedades de la piel, como el cáncer de piel, ya que la mayoría de ellos, en relación al fototipo cutáneo, fueron evaluados con pieles Tipo II. y III.

**DESCRIPTORES:** Salud Pública; Neoplasias cutáneas; Dermatología.

## RESUMO

As doenças relacionadas ao trabalho podem ser enquadradas como Problema de Saúde Pública (PSB), pois acometem um importante número de indivíduos e são passíveis de se tornarem objeto de ações individuais ou coletivas para sua prevenção e controle em termos populacionais. **OBJETIVO:** Analisar as atitudes e práticas face à exposição solar dos carteiros do Município de Juazeiro do Norte-CE. **MÉTODO:** Estudo de coorte transversal com enfoque na abordagem quantitativa. **RESULTADOS:** Os carteiro se expoem ao sol em horários indevidos e que a maioria dos entrevistados fazem exposição ao sol por volta das 13:00 às 17:00 horas, período do dia que as radiações UVA e UVB estão mais incidentes. **CONCLUSÃO:** Constatamos que os carteiros da cidade do Juazeiro do Norte- CE constituem um grupo susceptível a doenças de pele, a exemplo do câncer de pele, pois na sua maioria, em relação ao fototipo cutâneo, foram avaliados como possuidores de peles do Tipo II e III.

**DESCRITORES:** Saúde Pública; Neoplasias Cutâneas; Dermatologia.

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**INTRODUCTION**

The organization of workers' health actions in the health service network of the Unified Health System (SUS) constitutes a socio-political and technical process still under construction, based on solidary alliances between workers' unions and technicians from public health services, university hospitals, Labor and Social Security inspection, forming the Worker's Health Programs (Programas de Saúde do Trabalhador - PST).<sup>[1]</sup>

More recently with the contribution of Social Sciences in Health, Public Health, Collective Health and Social Medicine to understand the relationship of knowledge between Work and Health, a new field called Worker's Health (Saúde do Trabalhador - ST) is constituted.<sup>[2]</sup> Worker's health actions had their roots in the historical process of social struggles that started in Brazil since the 1970s, but such actions only began to take shape in the late 1980s in municipal governments as part of a policy with democratic participation.<sup>[3]</sup>

Lacaz<sup>[2]</sup> defines Worker's Health - ST as the field of practices and knowledge whose theoretical and methodological focus, in Brazil, emerges from Collective Health, seeking to know (and intervene in) the work and health-disease relations, having as the central reference the emergence of a new social author: the industrial working class.

The ST, according to article 6 of Law No. 8.080/90, is a set of activities that,

through actions of epidemiological and health surveillance, are aimed at the promotion and protection, as well as the recovery and rehabilitation of the health of workers submitted the risks and injuries arising from the working conditions considered as attributions of the SUS.<sup>[1-5]</sup>

In this situational framework, work environments and processes are related to what are now called work-related accidents and illnesses. Work-related diseases can be classified as a Public Health Problem (PHP), as they are problems that affect an important number of individuals and are liable to become the object of individual or collective actions for their prevention and control in population terms.<sup>[3-6]</sup>

In this perspective, highlighting the epidemiological importance for skin cancer, the National Cancer Institute (Instituto Nacional do Câncer - INCA)<sup>[12]</sup>, affirms that non-melanoma is the most frequent cancer in Brazil, corresponding to 25% of all malignant tumors registered in the country where it is estimated the occurrence of 113.850 for the year 2010, being 53.410 men and 60.440 women. Although skin cancer is the most frequent in Brazil, melanoma represents only 4% of malignant neoplasms of the integument, despite being the most serious due to its high possibility of metastasis. For the year 2010, it is estimated that 5.930 new cases will occur, 2.960 men and 2.970 women.<sup>[4]</sup> We can mention among the populations of workers who

are more susceptible to having skin diseases, fishermen, gardeners, farmers, postmen, among others; for being professionals who face an intense workday with long periods of sun exposure.

Such a measure is especially important, considering that educational action must be prioritized among the various strategies for controlling skin cancer, strategies that include counseling regarding sun exposure.<sup>[3-7]</sup>

In this context, the problem was delineated from postmen in the city of Juazeiro do Norte, in order to detect working conditions and the occurrence of risk factors for work-related health problems and as a medium and long-term intervention proposal, in order to guide changes in the forms of performance of these workers.

**METHOD**

In order to analyze the attitudes and practices of protection / exposure to the sun of postmen in the Municipality of Juazeiro do Norte-CE, we carried out a cross-sectional cohort study with a quantitative approach, in the time limit from 2009 to 2017. The option for the design cross-section finds support in the considerations of Hulley et al.,<sup>[6]</sup> who consider cross-sectional studies as an important source of information on the health and habits of a population, at the time the study is conducted, providing estimates such as the prevalence of a particular situation or behavior associated with health or illness in va-

rious demographic groups . The theoretical basis that supported the analysis of evidence was filtered in the Medline and Pubmed databases.

The scenario chosen for the development of this study was the headquarters of the Post and Telegraph Company (Empresa de Correios e Telégrafos - ECT) in the city of Juazeiro do Norte-CE, located at Rua da Conceição, no. 354, a city located in the south of the state, 600 km from capital, Fortaleza. Its area is 248,558 km<sup>2</sup>, at an average altitude of 350 meters. The studied population involved all ECT postmen from the Municipality of Juazeiro do Norte who, during the period of research data collection, performed activities at the institution, with the sample of the intentional type comprising a total of 25 postmen.

Statistical analysis was performed by a professional in this area of knowledge linked to the State University of Ceará, using the computer program Statistical Package for the Social Sciences (SPSS) version 13.0.

## RESULTS

25 postmen participated in our investigation, of which 23 were male and only 2 were female, representing 92 and 8% respectively.

In the case of labor, specifically, male participation is still a striking feature of this profession, both in the Brazilian and worldwide scenarios, a fact also evidenced in our study.

Regarding the age group, the ages ranged from 22 to 49 years. The average age of the 25 postmen was calculated at 35,84 years, for women (two professionals) this average was 37,50 and for men the arithmetic mean of age is 35.70. This information can be best viewed in Table 1 below.

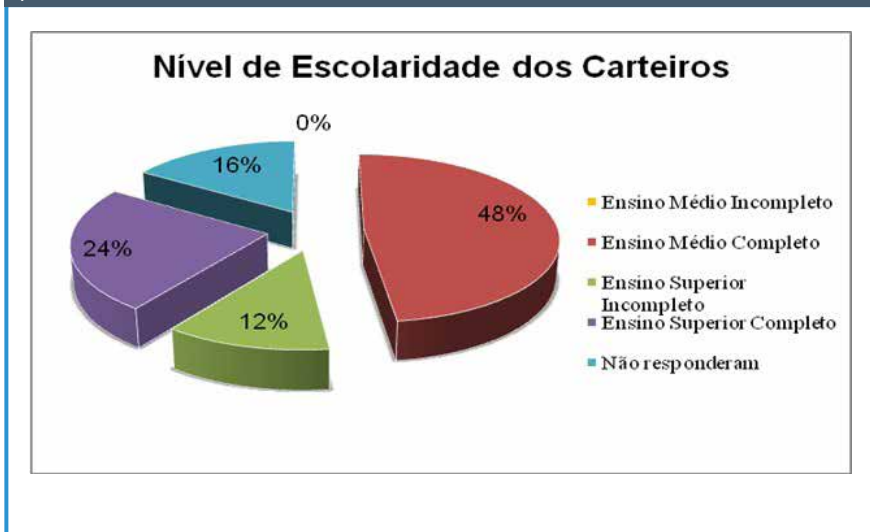
Regarding the level of education of the research subjects, it is found initially, that the number of postmen with educational level "Incomplete High School" is 0 (zero), which can be explained by the minimum requirement to enter this position is to complete high school.

Tabela 1: Distribuição por sexo e idade dos carteiros do Juazeiro do Norte pesquisados no período de abril e maio de 2009.

	Quantidade	Idade Média
Homens	23 (92%)	35,70
Mulheres	2 (28%)	37,50
Total	25	35,84

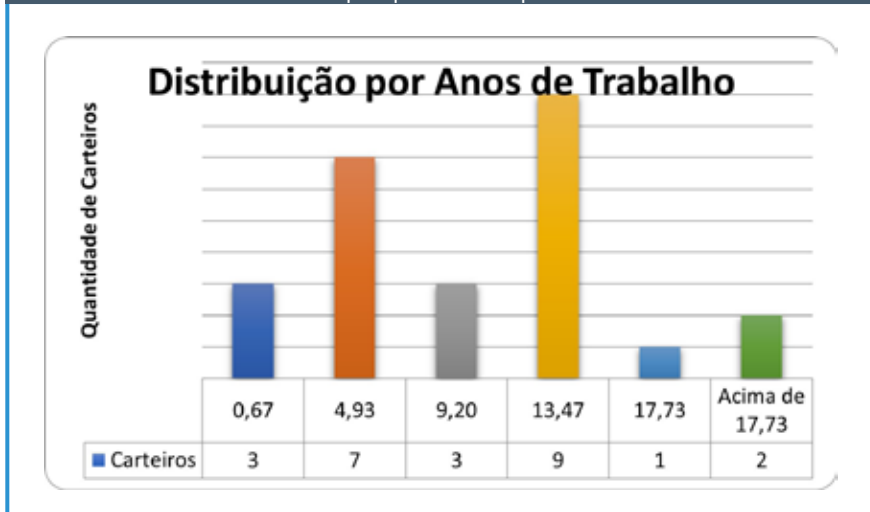
Fonte: Dados colhidos através da aplicação do questionário da Pesquisa: "Estudo das atitudes e práticas face à exposição solar dos carteiros do Município de Juazeiro do Norte-CE" (ANEXO - A)

Figura 1: Escolaridade dos carteiros do Juazeiro do Norte pesquisados no período de abril e maio de 2009.



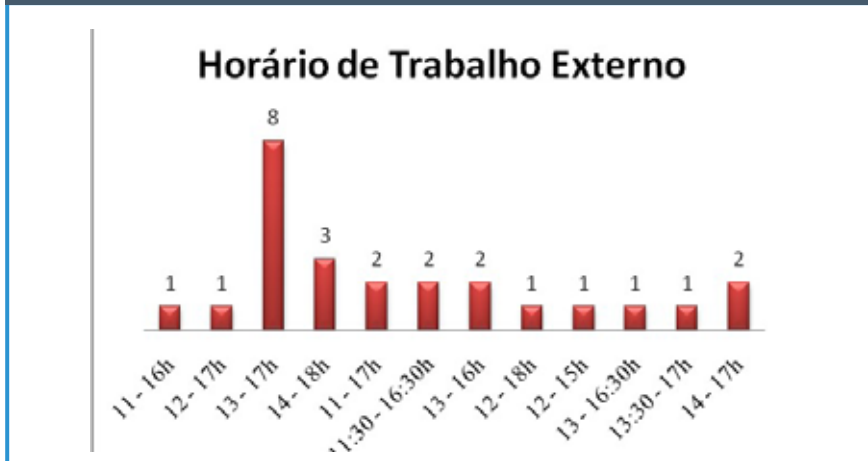
Fonte: Autoria Própria

Figura 2: Distribuição de frequência do tempo, por anos de trabalho dos carteiros de Juazeiro do Norte pesquisados no período de abril e maio de 2009.



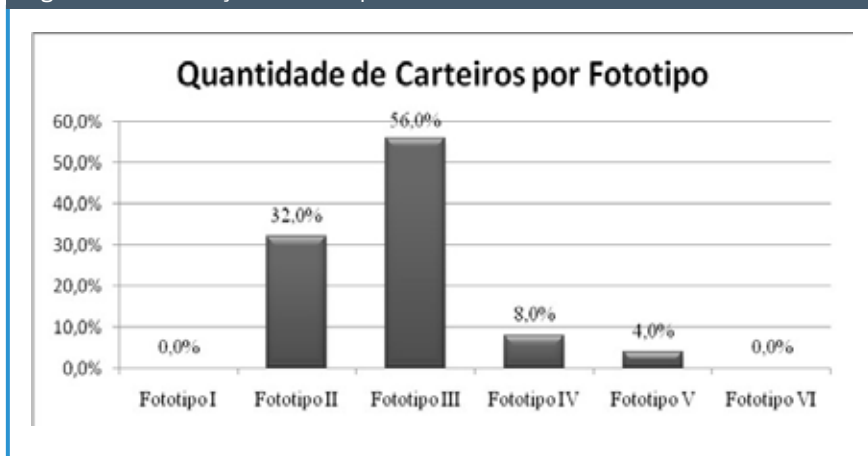
Fonte: Autoria Própria

Figura 3: Distribuição do horário de trabalho externo dos carteiros do Juazeiro do Norte pesquisados no período de abril e maio de 2009.



Fonte: Autoria Própria

Figura 4: Identificação do Fototipo cutâneo



Fonte: Autoria Própria

Figura 5: Comportamento da pele após exposição ao sol dos carteiros do Juazeiro do Norte.



Fonte: Autoria Própria

Figure 1 highlights the proportions of the participants regarding education.

When comparing our research universe with other workers who also have sun exposure, we observed that there was a certain reduction in the level of education.

Regarding the employment relationship between the analyzed subjects, we identified that in relation to years of work, there was a variation of a minimum time of 8 months and a maximum time of 22 years of commitment to the company. To learn more about how these data are distributed, Figure 2 below shows the distribution pattern, using the Histogram tool with the aid of statistical frequency.

As for the division of working periods, the hours are divided into internal and external work. Figure 3 shows the working hours of Juazeiro do Norte postmen.

We can see in Figure 3, in relation to the external working hours, that all workers expose themselves to the sun at inappropriate times and that most of the interviewees are exposed to the sun around 1:00 pm to 5:00 pm, period of the day that UVA and UVB radiation are more incident, and this is a more favorable time for the development of skin diseases.

Next, in Figure 4, the phototypes of the postmen are presented.

In order to identify the occurrence of risk factors for skin cancer in the professionals surveyed, it was necessary to know how the skin behavior of postmen is observed when there is exposure to the sun.

Figure 5 shows the changes perceived by postmen in accordance with the effects of exposure to the sun during the workday.

The Sun Protection Factor used by these professionals can be seen in Table 3 below.

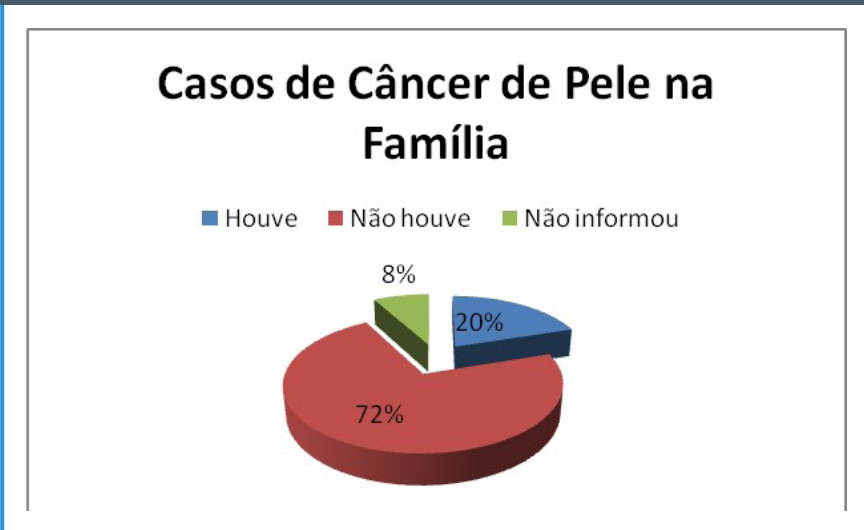
Another parameter that can assist in the assessment of the existence of risk factors among the phenotypic factors

Tabela 3: FPS utilizado pelos dos carteiros do Juazeiro do Norte pesquisados no período de abril e maio de 2009.

Fator de Proteção usado no horário de trabalho	
FPS 30	22
FPS 50	2
Total	24

Fonte: Dados colhidos através da aplicação do questionário da Pesquisa: "Estudo das atitudes e práticas face à exposição solar dos carteiros do Município de Juazeiro do Norte-CE". (ANEXO - A)

Figura 6: Existência de casos de câncer de pele na família dos carteiros do Juazeiro do Norte pesquisados no período de abril e maio de 2009.



Fonte: Autoria Própria

Tabela 4: Tipo e Local das Lesões identificadas pelos carteiros do Juazeiro do Norte pesquisados no período de abril e maio de 2009.

Local e Descrição	Nº de carteiros
Mancha no colo	1
Manchas brancas e escuras no pescoço	1
Manchas Brancas	2
Manchas vermelhas no rosto e no colo	1
Feridas na orelha	2
Manchas escuras no rosto	2
Feridas na testa	1
Total	10

Fonte: Autoria Própria

for skin cancer is the family history of the researched population. This situation is shown in the graph in Figure 6.

Regarding the possible relationship between occupation and risk factors for skin cancer in the study population, 10

postmen reported having an injury as a result of work. For the professionals surveyed who answered that they had already presented skin lesions as a result of the activity of Postman, the following cases were identified, through the re-

arch questionnaire, the following cases as can be seen in Table 4.

## DISCUSSION

The high incidence of skin diseases is mainly related to frequent and prolonged exposure to the sun, whether through recreational, aesthetic or professional activities, the latter being a group made up of people who have a greater chance of acquiring skin diseases. [6-9] Diseases related to work, distinctly, although they do not have specificity with a certain type of occupation, have a higher incidence in workers involved in certain activities. Among these activities that are related to sun exposure, we can highlight fishermen, farmers, lifeguards, traffic guards, street sweepers, postmen, among others.

The rural population where men are exposed to the sun for more than 3 hours/day, while women, up to 1 hour/day, also found that due to the lack of information, a large number of male individuals (79%) never used sunscreen. [1-9] As for the female sex, despite the majority knowing what a photoprotector is, more than 50% of the interviewees (52%) also never used it. This showed that the rural population is still in need of information on the subject. [6-12]

Regarding health conditions and risk for chronic diseases in workers at a sugar and alcohol plant, it was observed that in relation to work activities, about 65,8% performed their tasks exposed to the sun and 35,3% never used sun protection (including hat, t-shirt and sunscreen) and 32,7% used protection sometimes. [10-15]

The sun emits radiation of different wavelengths, the so-called electromagnetic spectrum. It can be divided into two major regions according to the atomic ionization capacity: ionizing radiation and non-ionizing radiation. Ionizing radiation, in turn, is subdivided into X-rays and gamma rays, while non-



-ionizing radiation is subdivided into ultraviolet radiation, visible light and infrared radiation. Fortunately, highly harmful ionizing radiation does not penetrate the Earth's atmosphere. <sup>[10-15]</sup>

Due to the destruction of the ozone layer, the incidence of UVB rays, intrinsically related to skin cancer, has been progressively increasing, even allowing UVC rays to get closer to the Earth's atmosphere. The incidence of UVA rays, on the other hand, is independent of the ozone layer and, therefore, causes skin cancer in individuals who are exposed to the sun, especially during times of high incidence, continuously and for many years. <sup>[6,7,9,12]</sup>

The unit of measurement for a sunburn is the minimal erythemogenic dose (MED), a dose capable of producing an erythema clearly demarcated in the area irradiated by UVR, after a single exposure. Just as variations in the spectrum of sunlight occur, MED also varies with the sun. <sup>[13-15]</sup>

MED, also called 1st degree erythema, can be used as a dosage in the prescription of UVR. Second degree or intense erythema is caused by a dose of about two and a half times the dose of a minimal erythema, with a latency period of 4 to 6 h and can be a little painful, regressing in 2 to 4 days. It is followed by flaking. Third degree, or severe, erythema is caused by about five doses of minimal erythema and has associated edema. The latency period can be brief, around 2 h and is followed by severe flaking. 4th degree erythema is produced for about 10 DEM and is further characterized by the formation of vesicles (superficial bubbles). <sup>[1,4,8,10,13]</sup>

Among the beneficial effects of UVR can be cited the anti-rickety, bactericidal, germicidal and metabolism effects, and after exposure to UVR there is a decrease in the blood sugar rate, when observed the urinary excretion rate of diabetic people. <sup>[14,15]</sup>

## CONCLUSION

We evidenced with the information collected and analyzed in the research, that the equipments provided by ECT are not enough to supply the daily needs of the investigated workers. We also found, as previously reported, that although it does not monitor the form of protection that these workers are providing, the company does not encourage them to use the protection correctly.

With regard to risk factors for skin diseases in relation to family history, we found that most postmen do not report cases of skin cancer in the family. As for their history of injuries in relation to previous exposure to postman activity, most reported that there was no history of skin injuries, however, in relation to the appearance of injuries as a result of working as a postman, we found that almost half of interviewees reported having an injury as a result of work. ■

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