RISK PERCEPTION OF SKIN CANCER AT A HIGH-ALTITUDE HOSPITAL

PERCEPCIÓN DEL RIESGO DE CÁNCER DE PIEL EN UN HOSPITAL DE ALTURA

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ABSTRACT

Objective: To determine the level of risk perception of skin cancer in a population from Cusco. **Methods:** It is an observational descriptive cross-sectional study and was aplied in a skin cancer screening campaign in Cusco. The applied questionnaire was designed and validated by Morales-Sánchez M and Cols, and it measures the risk perception of skin cancer. The reported Cronbach's alpha value is 0.824. **Results:** The majority of patients were female (64.7%), average age was 44.9 years (SD: 14.2) and the 51.0% had higher education level. The median hours of sun exposure was 4 (95% CI: 1-6), the most frequent origin was from Cusco (77.6%) and most of the population have normal risk perception of skin cancer (65.8%). **Conclusion:** The risk perception of skin cancer was normal in the majority of the population.

Key words: Skin neoplasms; Perception; Health behavior; Attitude (source: MeSH NLM).

RESUMEN

Objetivo: Determinar el nivel de percepción de riesgo de cáncer de piel en una población de Cusco. **Métodos:** El estudio es observacional de tipo transversal descriptivo y se llevó a cabo en una campaña de despistaje de cáncer de piel en la ciudad de Cusco. El cuestionario aplicado fue diseñado y validado por Morales-Sánchez M y Cols, y mide la percepción de riesgo de cáncer de piel. El valor de alfa de Cronbach reportado es de 0,824. **Resultados:** La mayoría de pacientes fueron de sexo femenino (64,7%), de edad promedio fue de 44,9 años (DS: 14,2) y de grado de educación superior (51,0%). La mediana de horas de exposición solar fue de 4 (IC95%: 1 – 6), la procedencia más frecuente fue del Cusco (77,6%) y con una percepción normal del cáncer de piel (65,8%). **Conclusión:** La percepción de riesgo de cáncer de piel fue normal en la mayoría de la población.

Palabras clave: Percepción; Neoplasias cutáneas; Actitudes y práctica en salud (fuente: DeCS BIREME).

INTRODUCTION

Exposure to prolonged solar ultraviolet (UV) radiation has the potential to damage skin cells and cause neoplasms. The incidence of skin cancer is increasing despite prevention strategies; thus, the American Cancer Society estimated 96,480 new cases of invasive Melanoma for 2019[1] with an increasing trend since 1999[2,3]. In Peru, skin cancer was the fourth most common type of cancer in 2012 and in 2017 it was the second (7.9 % vs 10.4%)[4,5]. More than 66,000 new cases are diagnosed each year and more than 32,000 people are estimated to die from the disease[6]. Most types of skin cancer are highly curable; however, unplanned treatment has repercussions on the patient such as disfigurement and emotional disorders[7].

Preventive measures and early diagnosis of skin cancer would help to decrease the above indicators[8]. Skin cancer is potentially preventable through appropriate behaviours such as avoiding sun exposure, using sunscreen, accessories, and protective clothing[9]. Diagnosis of skin cancer is common in young Hispanic

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people and the survival rate is lower compared to the American population[3,10]. For this reason, measuring skin cancer perception is important from an early age and influences the adoption of these prevention measures[11,12]. Although there are studies on skin cancer prevention perception and attitude, there are some deficiencies in the design of the questionnaires used[13].

The Andes region of Peru is considered from 1000 meters above sea level and has particular climatic and meteorological characteristics[14]. One of the characteristics is that the UV radiation indices are "extremely high" with an index of 12 and 18 in these zones and 18 in the city of Cusco[15]. The incidence of malignant melanoma in the city of Cusco is 13 according to the latest report[16]. No published studies were found on skin cancer perception in high-population. For this reason, the objective of our study was to determine the perception of risk of skin cancer in patients who attended a skin cancer screening campaign in a hospital in Cusco.

METHODS

Design

Observational study of descriptive cross-sectional type.

Population and sample

A questionnaire was applied to all patients attending the "Mole Day" campaign of the Antonio Lorena del Cusco contingency hospital located at 3400 masl. This campaign was carried out on February 2, 2019 in the facilities of the aforementioned hospital.

The health campaign consisted of preventive care by a dermatology specialist. Each care consisted of a complete dermatological examination, determination of skin phototype and counseling. The questionnaire was applied before the patients were admitted to the office. The skin phototype information was provided by the dermatologist, after each care. The methodology for the application of the questionnaire was standardized at a meeting the day before the campaign.

Procedures and variables

All adult patients who agreed to participate in the study were included with informed consent. Patients with incomplete survey, who responded with an irregular pattern or who were physically or mentally unable to respond to the questionnaire were excluded from the study.

The questionnaire applied was designed and validated by Morales-Sánchez M and Cols, and measures the perception of risk of skin cancer[17]. This questionnaire has 18 items grouped in 4 areas: affective (consisting of 5 statements), behavioral (consisting of 5 statements), gravity (consisting of 3 statements), susceptibility (consisting of 3 statements) and probability indicator (consisting of 2 propositions). The reported alpha value of Cronbach is 0.824[17]. According to the validation study, a normal risk perception score ranges from 68 to 96 points, having a lower score implies a lower risk perception and having more than 96 points means a high risk perception.

In addition, additional information was collected such as sociodemographic characteristics: sex, age, marital status, level of education, occupation, place of origin; and clinical characteristics such as hours of sun exposure, skin phototype, previous skin disease, family history of skin cancer, use of sunscreen accessories and previous information on skin cancer.

Each survey was assigned an alphanumeric code and entered into a database in Microsoft Excel 2013 by three members of the study team. A fourth member of the team carried out quality control of the information, reviewing all the questionnaires and their correct filling in the database.

Statistical Analysis

Descriptive analysis was performed using absolute and relative frequencies for categorical variables. To describe the numerical variables the mean and median were used together with the standard deviation (SD) or interquartile range (IQR) respectively.

Ethical considerations

The application of the research instrument was preceded by an informed consent given to each participant, the data handled by the investigators were kept in the strictest confidentiality and no information was published that would allow the identification of any participants.

RESULTS

The total number of respondents was 56. 4 questionnaires were excluded due to incomplete information. The majority of patients were female (64.7%) and of higher education level (51.0%), the average age was 44.9 years (SD: 14.2), the median hours of solar exposure was 4 (95% CI: 1. 6), the most frequent origin was from Cusco (77.6%) and with a normal perception of skin cancer (65.8%) (Table 1).

Most participants had a normal perception of skin cancer (n=33; 63.5%) followed by higher perception (n=16; 30.8%). The participants with low perception were three (5.8%).

The most common phototypes were types 3 and 4 (46% each). Similarly, the majority of patients with phototype 3 (60.9%) and phototype 4 (73.9%) had a normal cancer risk perception. The largest proportion of participants had no dermatological disease (72.6%), and had a normal perception (59.5). On the use of accessories for sun protection, 70.6% of participants used an accessory, and 63.9% of this group had a normal perception of cancer risk (Table 2).

Table 1. General characteristics according to the skin cancer risk perception score.

| Variables | Skin cancer risk perception score | | |
| | Normal (n=33) | Higher (n=16) | Less (n=3) |
	N (%)	N (%)	N (%)
Gender			
Male	12 (66.7)	6 (33.3)	0
Female	20 (60.6)	10 (30.3)	3 (9.1)
Marital status			
Single	11 (61.1)	7 (38.9)	0 (0.0)
Married	13 (72.2)	4 (22.2)	1 (5.6)
Cohabiting	6 (85.7)	1 (14.3)	0 (0.0)
Widower	2 (40.0)	3 (60.0)	0 (0.0)
Degree of instruction			
Illiterate	1 (100.0)	0 (0.0)	0 (0.0)
Primary	3 (42.9)	4 (57.1)	0 (0.0)
High school	11 (68.8)	5 (31.2)	0 (0.0)
Higher	17 (68.0)	6 (24.0)	2 (8.0)
Occupation			
Housewife	9 (56.3)	7 (43.7)	0 (0.0)
Student	4 (80.0)	1 (20.0)	0 (0.0)
Nurse	4 (80.0)	0 (0.0)	1 (20.0)
Others	16 (61.5)	8 (30.8)	2 (7.7)
Place of origin			
Cusco city	25 (65.8)	12 (31.6)	1 (2.6)
Outside of Cusco	7 (63.4)	3 (27.3)	1 (9.1)

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Table 2. Clinical characteristics according to the skin cancer risk perception score.

Variables	Skin cancer risk perception score		
	Normal (n=33)	Higher (n=16)	Less (n=3)
	N (%)	N (%)	N (%)
Phototype			
Type 2	2 (66.8)	1 (33.3)	0 (0.0)
Type 3	14 (60.9)	7 (30.4)	2 (8.7)
Type 4	17 (73.9)	6 (26.1)	0 (0.0)
Type 5	0 (0.0)	1 (100.0)	0 (0.0)
Skin illness			
Yes	11 (78.6)	2 (14.3)	1 (7.1)
No	22 (59.5)	13 (35.1)	2 (5.4)
Use of accessories for sun protection			
Yes	23 (63.9)	10 (27.8)	3 (8.3)
No	10 (66.7)	5 (33.3)	0 (0.0)
Skin cancer background information			
Yes	14 (63.4)	6 (27.3)	2 (9.1)
No	19 (65.5)	9 (31.0)	1 (3.5)

The most frequent dermatological disease was rosacea (33.3%) followed by mycosis (25.0%)

Table 3. Types of skin disease in the respondents.

Type	N (%)*
Rosacea	4 (33.3)
Mycosis	3 (25.0)
Acne	2 (16.7)
Allergy	1 (8.3)
Melasma	1 (8.3)
Melanoma	1 (8.3)

* Two patients did not report the type of disease.

DISCUSSION

Perception was normal in 63.5% and high in 30.8% of participants. This may be due to an adequate knowledge of the risk of skin cancer. The level of knowledge has been shown to influence the perception and change of attitudes in patients[18]. The studio of Alfredo A et al. reports that there is little perception of risk and poor knowledge about the dangers of irresponsible solar exposure[19]. The majority of participants (51.0%) had higher education level, so we assume the access information and awareness about the disease is greater.

The majority of participants (72.6%) had no skin disease, and of this group, more than 90% had a normal or high risk perception. This could be explained by the high proportion of participants using photo-protection measures (70.6%). In a study that included veterans in the treatment of skin disease, they reported that they understood the risk of skin cancer but were confused about the use of sunscreen and other measures[20,19]. Similarly, a study conducted in France reports that having a skin history increases photo-protective behavior[21]. The adoption of photo-protection measures depends on the personal perception of risk, which in the majority of study participants is normal or high[22].

The predominant phototype in our study was 3 and 4

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(46% each). These phototypes have a greater amount of melanin, which has the ability to absorb broad spectrum UV radiation, antioxidant and radical remover[23]. In addition, the cancer perception of these groups was normal or high in more than 90% of them. This result could be explained again by the educational level of the participants and access to information.

The limitations of the study are that it included a non-representative group, so the results cannot be extrapolated to other populations that go to other hospitals in the city. It is suggested to carry out studies that include the population of the different health systems. It is the first study carried out in the high Andean population that evaluates the perception of risk on skin cancer, using a validated survey.

CONCLUSION

The perception of skin cancer risk was from normal to high in most patients. The level of education could be an influential factor in the perception of skin cancer.

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