

Social Determination Of Melanoma In The Population Of Quito

Samuel Olegario Iñiguez Jimenez¹, Stephanie Marie Cruz-Pierard², Jorge Gabriel Maldonado Cornejo³, Maybelin Samantha Iñiguez Jimenez⁴

Abstract

The present research based on critical epidemiology had the objective of establishing the social determinants of melanoma in Quito-Ecuador. A narrative review was carried out of the different general, particular and individual embodiments of the city, in its origin and current situation, related in one way or another to the increase in cases of melanoma in this area, including demographic, geographic and political data. The critical protective or destructive processes determined were territorial such as altitude and geographic location; community, the economic possibilities and social classes of zones III and IV with less access to sun protection; and family-individual, biological, ethnic variables and habits of each person. It was evident that it is necessary to strengthen community monitoring, in order to identify risk processes related to the development of melanoma and promote protective processes, as well as implement structural modification strategies to reduce the incidence of this pathology.

Keywords: *Melanoma, Public Health, Skin Neoplasms, Social Determination of Health.*

Introduction

Firstly, the socio-historical context is understood as an event that has happened in history and includes social, material and cultural aspects. San Francisco de Quito was founded on August 28, 1534 on the Cicalpa plain, by Sebastián de Benalcázar who called it the “main town of the Ingas”, but the Villa of San Francisco de Quito was definitively established on December 6, 1534. Quito. It was the same geographical seat where the political center of the Caras, the Shiris and later the Incas had been established (Ayala, 2008).

In the city of Quito, the urban part was presented in the last century by two crucial historical moments: the first, defined by the predominance of capitalist relations of production, the constitution of the National State and the two-headed articulation of urbanization in the country. , which correspond, chronologically, to the period of the Liberal Revolution corresponding to the year 1895 to 1910; and the second, characterized by an acute process of transformations only comparable in magnitude and importance with the previous moment,

¹Pontificia Universidad Católica del Ecuador, Centro de Investigación para la Salud en América Latina (CISeAL), <https://orcid.org/0000-0002-4722-7611>

²Pontificia Universidad Católica del Ecuador, <https://orcid.org/0000-0003-4100-5898>

³Universidad Central del Ecuador, <http://orcid.org/0000-0002-0508-7286> Jonathan Luis Cruz-Pierard, UTE, <https://orcid.org/0000-0002-6960-2662>

⁴Pontificia Universidad Católica del Ecuador, <https://orcid.org/0009-0008-5390-5467>

deduced from the process of capitalist modernization that the State and civil society experienced throughout the country between the years 1960 to 1980 (Ayala , 2008).

Quito is the second most populated city in the country, after Guayaquil, the population of the entire Metropolitan District of Quito is 2,781,643 inhabitants, making it the most populated canton in the country. According to the 2010 Population and Housing Census, 26.42% of its population is between 31 and 64 years old, followed by young people between 18 and 30 years old (16.65%); children between 0 and 11 years old (15.59%) The elderly population (65 years and older) reaches 0.4%, according to the age group of the city of Quito. (INEC, 2020).

On the other hand, Ecuador, due to its geographical location and damage to the ozone layer, receives a level of ultraviolet (UV) radiation that is dangerous for its inhabitants; according to the report of the Department of Planetary Sciences of the Ecuadorian Civil Space Agency (EXA). Which can be considered a high-risk process for the development of some types of skin cancer such as cutaneous melanoma. (BBC, 2010)

It has been shown that the incidence of skin cancer has increased in recent decades in some countries around the world. Ecuador is no exception to this health problem, since it has been shown that 1 in 3 patients diagnosed with cancer has skin cancer. According to the World Health Organization (WHO), between 2 to 3 million cases of non-melanoma skin cancer (NMSC) and 132,000 cases of melanoma skin cancer occur each year worldwide (Salcedo et. al., 2020).

In the city of Quito, according to the National Tumor Registry System - SOLCA, its statistics have shown an incidence of non-melanoma cancer in the period 1986-1990 was 21 per 100,000 inhabitants and in the period 2006-2010 increased to 33 per 100,000, which means an increase of 57%. On the other hand, the incidence of melanoma cancer has had an incipient increase, and remains at 0.1 and 0.9 per 100,00 inhabitants for women and men respectively (SOLCA, 2019).

The importance of determining the critical processes, both destructive and protective, related to the development of melanoma in Quito was evident, to collaborate with the prevention of this pathology and establish which social determinants are involved in it.

Methodology

A narrative review of different aspects related to melanoma in the Quito population was carried out, especially from the point of view of critical epidemiology. Demographic, geographic, political, social and legal aspects were analyzed to identify the main critical processes in collective health of melanoma in the Quito population. The determined processes were at the territorial, community and family-individual level.

Results

Skin cancer represents a collective health problem that can be analyzed from several points of view. Quito is a city whose altitude and location on the equator facilitates the presence of high levels of radiation that causes melanoma, and has also increased due to the environmental pollution generated in this city. In this context, it is also worth mentioning that this city has the highest poverty rate at the national level, 11 out of every 100 Quito residents earn less than 2.83 dollars per day, 8 out of every 10 residents of the capital are unemployed and the underemployment percentage is 12.4% (González, 2019). This means that at a particular level we find great differences between social classes, lifestyles that barely reach enough income to cover basic needs and creating a larger vulnerable population by having to work in conditions of greater risk of exposure to UV radiation (Linares et al., 2014).

Likewise, at a singular level, the lack of sufficient resources limits the level of education of individuals and their access to protection products such as sunscreen, promotes repeated sunburns, causing DNA damage, cancer until it spreads (metastasis). On the other hand, we see that the rate of this pathology is higher in men, which may be due to the fact that due to gender issues it is believed that when using creams one is no longer as manly and may suffer criticism or ridicule from other people, in addition to erroneous thinking. that having dark skin makes you immune to skin cancer or that younger people are not affected by this pathology.

It is important to mention that sunscreen is not included in the list of essential medicines, therefore, its price includes VAT tax. This makes these products more expensive, making it difficult for the poorest population to access their benefits, making them more prone to developing skin cancer. As mentioned above, the average cost of a bottle of sunscreen of around 100 g would be at least 20 dollars, which is a destructive process for people in informal work situations, who must cover other basic personal or family needs.

In other countries it has been observed that the most effective primary prevention strategies were based on educational programs to improve photo protection habits, thus using measures with recommendations on sunscreens, laws that control the use of tanning booths, models to identify individuals at high risk of developing melanoma by applying prevention actions, monitoring, and early and exhaustive screening (Alonso-Belmonte et al., 2022).

In Ecuador, no prevention strategies for this type of cancer have been proposed, except for the “Convention on the prevention and control of professional risks caused by carcinogenic substances or agents, which came into force in June 1976 in order to reduce occupational risk processes” (Ministry of Public Health, 2017). Likewise, in Quito, apart from the primary prevention campaigns generated by some private organizations, no major actions have been taken to control this problem.

After this analysis of global and national information, we can verify that health in the country continues to be linear, approached from a Cartesian perspective, medicalized drugs, maintains a historical crisis to solve the needs and solve the problems of care for the disease and generation. health, with limited resources, a fragmented health system, which does not contribute to guaranteeing health rights or improving the quality of life of the population.

Among the complexities that stand out are labor relations related to the role of gender, the relationship and accessibility to economic resources to sustain their basic needs, the job insecurity of the population in general itself, which establishes a syndemic relationship between the social determination of health (Breilh et al., 2018) and the development of skin cancer.

Critical processes at the Territorial level

Quito, at 2850 meters above sea level and, therefore, at a point closer to the sun, vulnerable to a higher intensity of ultraviolet (UV) rays. Furthermore, since it is located on the equatorial line, this radiation falls perpendicularly, without the dispersion of the rays that occurs in other parts of the world such as Buenos Aires or New York due to the globular shape of the planet (Silva 2022). It has been shown that Quito has high or very high radiation levels and it is estimated that there are 30% more UV rays than in beach areas (Jácome, 2018). Therefore, the altitude and geographical location of this city can be considered as critical destructive processes at a territorial level.

Likewise, in recent decades, another critical destructive process related to melanoma has been generated, such as climate change around the world. With respect to global warming, in the city it has been determined that by the year 2050 the temperature will increase by 2.5°C

(Secretariat of Environment 2014). This can occur as a result of pollution and the consequent destruction of the ozone layer, which generates an endless cycle of damage to the planet, since by generating more greenhouse gases, the ozone layer is destroyed, which allows the entry of more radiation. , this produces, together with other factors, global warming (Silva 2022). Furthermore, “greenhouse gas emissions trap more heat in the lower atmosphere, which leads to a cooling of the upper atmosphere. “Colder temperatures in the upper atmosphere are slowing the recovery of the ozone layer” (Aqua 2021).

The constant extraction and processing of natural resources such as fossil fuels, metals, biomass, minerals, among others, make up 50% of global greenhouse gas emissions, in turn increasing the loss of diversity worldwide and impacts on water stress, it should be noted that “the global demand for natural resources is at an unsustainable level and, however, it could be said that there is a growing demand” (KAIROS: Canadian Ecumenical Justice Initiatives 2021).

On the other hand, thanks to the implementation of certain international agreements such as the Montreal Protocol and policies that limit the generation of greenhouse gases, an improvement has been seen in this protective layer, “the evidence presented by the authors shows that in parts of the stratosphere and the ozone layer have recovered at a rate of 1-3% per decade since 2000” (LA network 2018). In Quito, indicators focused on sustainability have been analyzed, such as the greenhouse gas inventory and the measurement of the carbon, water and ecological footprint, which constitute important instruments to guide the environmental and climate change management of this city (Secretary of Environment 2014). These actions to protect and regenerate the ozone layer could then be considered a protective process against the development of melanomas in the Quito population.

It has been determined that Quito has the highest unemployment rate in the country, complicating among many things Quito's access to expensive products such as sunscreen creams (Madrid 2023). Furthermore, in general the Ecuadorian population is characterized by having a sexist society. This is also considered a critical destructive process in terms of the development of melanomas, since men, when affected by ridicule or comments that suggest that using sunscreen is only for women or that this makes them less manly, many choose not to apply these. protective creams, becoming more prone to skin cancer (Pardo 2016).

Critical processes at the Community level

Since the 1980s, the city of Quito has been divided into four geographic zones, which present a homogeneous economic aspect, infrastructure and basic services, as well as specific groups of inhabitants with similar living conditions (Breilh and Granda 1983). Zone I is considered Luxury Residential, it includes the business class and upper-middle groups; Zone II, called Medium Residential, covers the middle and upper middle layer; continuing with Zone III known as Popular Media, which includes the middle layer, salaried and sub-salaried, and finally Zone IV, considered spontaneous settlement, includes salaried and sub-salaried (Breilh and Granda 1983). Through this distribution, some critical processes that would affect the community of Quito in terms of melanoma can be determined, such as great inequalities between social classes, low economic income and poor level of education.

Based on economic possibilities and social classes, it is evident that zones III and IV are those that would have the least access to sun protection, due to low salaries, underemployment and job instability, as well as being more exposed to solar radiation on all people who work informally on the street under the sun such as street vendors, construction workers, among others. In this context, Quito presents the national poverty rate, it has also been shown that 8 out of every 10 Quito residents are unemployed and the percentage of underemployment in the city is 12.4%, in addition to the fact that 11 out of every 100 people earn less than 3 dollars a

day (González, 2019). It is evident that these large differences between social classes and lifestyles that barely reach sufficient income to cover basic needs generate a greater number of people vulnerable to melanoma by having to work in conditions of greater risk of exposure to UV radiation and not being able to purchase protective supplies against it (Linares et al., 2014), constituting critical destructive processes by promoting repeated sunburns and causing DNA damage.

On the other hand, the level of education of the population or access to relevant information regarding melanoma can also be considered a critical process, being protective or destructive depending on the situation. If a high level of education is presented, allowing people to know about the risks of exposure to UV rays and the importance of sun protection from childhood, the development of melanoma could be somewhat prevented. If the population does not have this knowledge, added to the other processes presented above, it is likely that the incidence and prevalence of this pathology will continue to increase. In Quito, in 2020 “of the total urban population (1,465,772), 60% were attending some level of primary, high school or higher education. Of the total rural population (571,682), 57.7% did so” (Educational Offer 2021), therefore, there is still a large part of the population without access to education in the city.

Likewise, the campaigns and projects carried out by different capital organizations help raise people's awareness about the risks of skin cancer and how to prevent it, however, they do not always reach the entire population and not enough have been carried out. Most of these activities are carried out in urban areas, so ignorance of this issue is greater in rural areas, where the level of education is usually lower, and machismo and poverty are present in a higher percentage.

Critical processes at the family level

Regarding the family level, critical, protective and destructive processes can also be established, including the family's economic capacity, biological and ethnic variables, and the habits and customs of each person.

Family economic capacity would be limited by particular and general critical processes of access to education for better jobs, social class, capitalism, among others, which do not present the best conditions in Quito, so many households would not be able to satisfy basic needs of family members. On the other hand, according to the daily recommendations for the use of sunscreen, around 30g of cream should be applied and repeated every two hours as long as sun exposure continues (SOLCA, 2019). A person should buy at least 1 jar of 150 grams a week, spending about 80 dollars a month, making it impossible for low-income families or individuals to pay this amount.

In relation to the biological and ethnic variables, it has been shown that men, in many cases due to sexist thinking, tend to be more exposed to the sun without using sunscreen, protective clothing, wide-brimmed hats or sunglasses, and the majority do not perform a self-assessment to determine potentially risky lesions, which has led to a higher rate of melanomas in men (Pardo 2016).

As has been shown, each process presents subsumption with those mentioned at the communal and territorial level. For example, family and personal habits and customs are determined to a certain extent by the education and level of information they present. In Quito, information on how to prevent melanoma is scarce, which is one of the reasons why the majority of the population does not use sunscreen or take care of solar radiation.

Conclusions

Critical epidemiology advocates a comprehensive approach that takes into account the social determination of health, inequalities in risk exposure, and the need for a comprehensive approach to melanoma that could include the following measures. As a primary measure, work must be done on a public policy that focuses on the syndemic analysis of skin cancer, and the sociopolitical, economic, cultural and environmental conditions, built from the participation of the population based on their needs and clear and objective proposals. . In addition to standardizing preventive measures that strengthen protective processes, the State must guarantee access to information that allows the identification of risk processes and protective processes for the prevention of skin cancer.

On the other hand, skin cancer treatment must be comprehensive and include not only treatment of the tumor, but also attention to the physical, economic, emotional and social needs of the patient. Care must be individualized, multidisciplinary and intersectoral. The incidence of skin cancer is associated with social, economic, cultural, and political processes, which results in a lack of access to quality comprehensive health care, occupational exposure to carcinogenic agents, job insecurity, and an increase in the gender gap. of social inequalities, so it is important to address them through public policies that promote equitable access to health services, safe job opportunities, and environmental measures that protect human beings over capital.

Last but not least, it is essential to strengthen community monitoring, in order to identify risk processes related to the development of skin cancer and strengthen protective processes and implement structural modification strategies to reduce the incidence of this pathology. Additionally, the construction of local micro and macro networks that allows the implementation of interinstitutional and intersectoral strategies for the comprehensive approach to melanoma.

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