

Editorial

Situation of Population Based Cancer Screening in Paraguay, According to the National Survey of Risk Factors and Non Communicable Diseases, 2023

Situación del tamizaje poblacional de cáncer en Paraguay, según la Encuesta Nacional de Factores de Riesgo y Enfermedades No Transmisibles, 2023

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Cancer is currently the leading cause of premature death in Paraguay, representing a public health issue that should more clearly guide national health priorities. The magnitude of the problem is undeniable: for 2022, an estimated 13,783 new cases and 6,581 deaths were reported, figures that position cancer as a contemporary epidemic with a sustained upward trend ⁽¹⁾. Despite institutional advances, including the creation of the Population Based Cancer Registry (RCBP) in 2020 and the enactment of laws aimed at strengthening cancer control, the country still faces significant gaps in information, registration, and surveillance that hinder accurate description of the epidemiological evolution of the phenomenon ^(2,3).

Paraguay's demographic and epidemiological transition is characterized by an increasingly aging population, which largely explains the rise in cancer incidence. This is compounded by profound shifts in lifestyles, environmental exposures, and dietary patterns, alongside the consequences of decades of well known toxic exposures such as tobacco, which is responsible for more than 15 types of cancer and approximately 25% of cancer-related deaths worldwide. In addition, modern carcinogenic or contaminating particles such as those present in ultra processed foods, microplastics, vaping devices, air and water quality, among many others are conditioned by the social, environmental, political, and commercial determinants of health ^(4,5).

Population-based cancer surveillance is fundamental to a country's public health. In this context, the recent publication (2025) of the complete results of the National Survey of Risk Factors and Non Communicable Diseases of Paraguay is particularly notable. The survey

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was conducted between late 2022 and early 2023 using the STEPwise approach of the World Health Organization (WHO). It is considered comprehensive because key figures on diabetes, tobacco use, obesity, and physical inactivity had already been released during 2023, outlining a risk profile consistent with the described epidemiological transition. This recent report now fully realizes the capacity to link risk and protective factors with the country's most prevalent cancers: prostate cancer in men; breast and cervical cancer in women; and colorectal cancer in both sexes ^(6,7).

It is timely to highlight these topics, as this issue of the journal provides an in-depth description of three national cancer related subjects: prostatic hyperplasia, mutations in breast cancer, and cervical cancer. This renders the survey a valuable resource for understanding the national context in which these tumors emerge, progress, and in a significant number of cases are diagnosed at a late stage. Of particular note is Chapter 15 of the survey, dedicated to the 'Health Screening' component, which reveals both advances and gaps in preventive practices and early detection; understanding these factors is essential for devising more effective policies.

Regarding cervical cancer screening, unequal progress and low risk perception among young women are highlighted. The report reveals that 74.3% of women aged 18 and older have undergone a cervical cancer screening exam at least once in their lifetime. At first glance, this might be interpreted as acceptable coverage; however, when the timeliness of screening is analyzed, concerning gaps emerge: only 50.3% underwent screening within the last year, while 15.3% did so more than five years ago, exceeding the recommended interval for periodic screening. Even more striking is that among those who had undergone screening, 6.9% had an abnormal or "positive" result, and 0.7% presented direct suspicion of cancer, suggesting a significant burden of precancerous lesions not detected in a timely manner. The survey confirms a known but persistent problem: low risk perception among young women. In the 18–29 age group, only 53% had ever been screened, and 34.5% had done so more than five years ago. Paradoxically, this group reported a 5.2% rate (the highest of all age groups) of abnormalities or 'positive results' in their colposcopy. Beyond HPV vaccination, cervical cancer screening remains one of the most cost effective public health tools. However, its impact depends on regularity, quality of cytological/colposcopic interpretation, linkage to treatment, and, crucially, health education that enables risk understanding and sustained preventive practices in historically less adherent groups. This message aligns with the recommendations to establish more sensitive protocols adapted to the country's reality, as concluded by the National Hospital of Itauguá team in their article in this issue.

Regarding breast cancer screening, the report indicates that 51.6% of women state they have received some education on how to perform breast self examinations. However, younger women once again appear to be lagging behind: only 38% reported receiving such guidance. Although self examination does not replace mammography, health literacy remains a key pillar for early detection. As for mammography, 51.1% of women declare having undergone at least one mammogram in their lifetime, but this figure conceals a critical paradox: 33.1% of women aged 45 to 59 and 40.3% of those aged 60 to 69 have never undergone a breast examination. In other words, the groups with the highest cumulative risk are those presenting the highest rates of total absence of screening. This finding has profound public health implications: when detected early, breast cancer has survival rates exceeding 90%. The lack of regular screening leads directly to advanced-stage diagnoses, more complex treatments, and substantially higher costs for the health system.

The intersection of the survey data (which reveal gaps in screening and health education) and the study of genetic mutations (which evidences the existence of still unrecognized hereditary risk profiles) explored in depth in the study included in this issue opens a critical avenue for secondary and tertiary prevention policies. It becomes imperative to develop strategies that integrate population-based screening, genetic counseling, and individualized risk assessment.

Regarding prostate cancer screening in the population-based survey, it is concerning that only 25.5% of men aged 45 to 59 and 42.5% of those aged 60 to 69 have ever undergone a prostate examination. Although the scientific community continues to debate the balance between the benefits and risks of PSA screening, it is clear that the near-total absence of assessment in high risk groups indicates a gap in access, knowledge, and coordination between levels of care. Given the high mortality burden of prostate cancer in Paraguay, the screening strategy must be re evaluated with a culturally contextualized perspective at the national level.

In this context, the article included in this issue presenting the national experience with Holmium Laser Enucleation of the Prostate (HoLEP) is particularly relevant. This advanced technique facilitates the national availability of a continuum of care that begins with adequate screening and culminates in high quality treatment.

The evidence presented demonstrates a compelling consistency: established screening practices exist, yet they are insufficient and deeply inequitable, particularly among higher risk age groups. These patterns must serve as a call for targeted action, as cancer incidence is set to rise due to demographic and environmental factors. Therefore, strengthening screening and health education represents an immediate, cost effective, and essential strategy. The country faces both the challenge and the opportunity to translate this evidence into sustained, intersectoral, and equity oriented policies capable of changing the trajectory of cancer in Paraguay over the coming decades

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