

UNTANGLING THE COMPLEX ROOTS OF CANCER IN BRAZIL

Maria Paula Curado studies the risk factors for head, neck, gastric and breast cancers.



Maria Paula Curado started a cancer-epidemiology group at A. C. Camargo Cancer Center.

When I moved to São Paulo, Brazil, in 1978, to train in head and neck surgery, I was the first woman in the surgery programme at A. C. Camargo Cancer Center. In the early 1980s, I returned to Goiânia in central Brazil, where I'm from, and began monitoring population data on cancer. In 1986, I created the Goiânia population-based cancer registry, which contains data from around 70 hospital pathology laboratories and records all new cases of cancer in local residents. The database is important because in 1987 a caesium chloride radiation leak occurred at an abandoned radiotherapy clinic in Goiânia. Four people died and around 250 came into contact with the radioactive material. The cancer registry is still ongoing.

In 2014, I started a cancer-epidemiology group at A. C. Camargo. Worldwide, cancer is the second biggest cause of death, after

cardiovascular disease. Physicians are treating people all the time, but sometimes they don't know about factors such as prevention or risk. I think epidemiology can give you a broader view of cancer. This is what is missing in many cancer centres.

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A typical day in the office involves reading, talking to my students, and discussing new research, especially in cancer. The group runs a postgraduate programme, so I have three PhD students, three master's students and two postdoctoral fellows. Most come here from medical school, but some have a biomedical or nursing background. They think I'm just

teaching, but I'm also learning a lot from them.

I support the students and help them with their research. A key question I want my students to ask is: what difference am I making to others? In Brazil, we have so much disparity and inequality in health-care access. An important aspect of my research is asking: why are people dying from certain cancers? Do they have access to treatment or new drugs?

Early deaths

One issue I think is really important is premature death, because in Brazil a lot of people are dying young from cancer. For example, right now my group is looking at gastric cancers and we found that the number of years of life lost for women with gastric cancer is higher than that for men. So why are women dying earlier? To answer this, we need to dig into the data and investigate the diagnoses, type of treatment and survival rates. The younger deaths could be because of social expectations: women might be taking care of others in their community and not themselves. A review of 25 studies (A. Ferro *et al. Int. J. Cancer* **147**, 3090–3101; 2020) showed that eating fewer fruits and vegetables is a risk factor for gastric cancer. So diet could also play a part.

I'm not alone in this research and I'm usually in contact with other groups in Brazil. For example, as well as my students in the postgraduate programme, I co-supervise one student who is working with local communities in the Amazon, and five students in Goiânia. Brazil is a huge country, so we need to understand what are the main risk factors for these cancers across different regions. People in the Amazon do not eat the same as those living in São Paulo or Goiânia, for example.

At my cancer centre, we have reached an important moment: the centre is training more students to read research and apply it to the treatment of people. We're improving knowledge, and that helps to make our care much better.

Interview by Helen Santoro

This interview has been edited for length and clarity.