Focus 9. Social inequalities in cancer in Latin America

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Introduction

According to the latest regional human development report for Latin American countries, significantly reduced social inequalities were observed from 2002 to 2013, as indicated by a lower Gini index, which decreased from 0.54 in 2002 to 0.49 in 2013 (UNDP, 2016). The main factor associated with this reduced Gini index was the reduction in poverty; however, other types of exclusion persist, linked to factors such as ethnicity and sex (ECLAC, 2016; UNDP, 2016).

Although the reduction in poverty has been accompanied by improvements in both education and health-related indicators, including increased school access, reduced infant mortality, and increased life expectancy, progress in policies to maintain these achievements has been insufficient; this lack of progress is due particularly to the scant development in social protection (UNDP, 2016). This situation has resulted in demographic and epidemiological transitions in the form of an ageing population and an increased burden of chronic diseases. A large percentage of the population (particularly the elderly population) are experiencing poorer conditions because of limited access to basic social services (including health-care services) and, after the diagnosis of disabling diseases such as cancer, a higher risk of impoverishment (ECLAC, 2016; UNDP, 2016).

Cancer inequalities

Similarly to countries in other world regions, Latin American countries show a positive association between gross domestic product (GDP) or Human Development Index (HDI) and overall cancer incidence (Goss et al., 2013; Fidler et al., 2016); however, cancer mortality does not seem to be strongly associated with GDP or HDI (Rezaeian et al., 2016). In countries that are transitioning towards improved socioeconomic conditions, a decline in cancer types associated with infection and an increase in cancer types associated with so-called westernized lifestyles have been reported (Bray et al., 2012; Rezaeian et al., 2016). Although cervical cancer and breast cancer often show opposite trends during this transition (i.e. a decrease in cervical cancer and an increase

in breast cancer), this is not always the case in Latin American countries, where different patterns are observed by inequality and HDI levels (Fig. F9.1). Countries with the highest inequality-adjusted HDI in the region have decreasing trends for both cervical cancer and breast cancer mortality, with a gradient that depends on initial mortality rates over the observation period; however, countries with the lowest inequality-adjusted HDI in the region have increasing breast cancer mortality rates and variable trends in cervical cancer mortality rates.

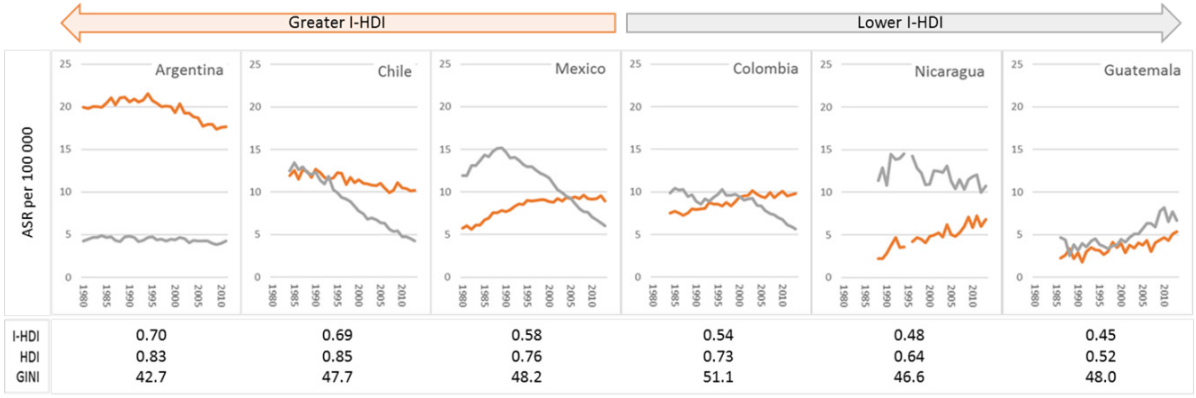

Fig. F9.1. Trends in breast cancer and cervical cancer mortality rates in selected Latin American countries according to the inequality-adjusted Human Development Index (I-HDI; the higher the better). ASR, age-standardized rate; HDI, Human Development Index (a function of life expectancy, education level, and gross national income; the higher the better). The Gini index is used as a measure of inequality (0% indicates complete equality and 100% complete inequality). Orange, breast cancer mortality rates; grey, cervical cancer mortality rates. Source: compiled from the WHO-IARC mortality database, the UNDP human development reports, and the World Bank Open Data.

Income and education level are major determinants of cervical cancer mortality in Latin American countries, even in the absence of organized screening programmes (McKinnon et al., 2011; Pereira-Scalabrino et al., 2013). Despite observed improvements in both determinants (UNDP, 2016), within-country socioeconomic disparities in cancer mortality have not decreased substantially in the region. Recent reports from Colombia indicate not only increasing inequalities in cancer mortality with education level for different cancer types but also re-emerging inequalities in cervical cancer mortality, in contrast with previous reports of decreasing trends (de Vries et al., 2016, 2018). In addition, studies in Brazil reported an inverse correlation between breast cancer mortality and social exclusion index (Gonzaga et al., 2015) and a positive association between breast cancer mortality and both inequality indexes and a rural residence (Girianelli et al., 2014; Figueiredo and Adami, 2018).

Despite the fact that disparities in cancer outcomes with ethnicity and sex continue to be major concerns, as previously indicated, information about their specific association with cancer incidence or mortality rates in Latin American countries is scarce. Indigenous groups represent about 10% of the general population in Latin America (Goss et al., 2013), and a review showed higher incidence rates of gallbladder cancer and infection-related cancers for Indigenous populations than for the Latin American general population, suggesting an association with poverty and lower education level (Moore et al., 2014).

The roots of cancer inequalities

In general, a higher mortality burden in low-income populations may be related to reduced access to health care, including both preventive and therapeutic services; however, the burden of poverty-related cancer in Latin American countries cannot be completely explained by this factor, just as decreasing mortality rates cannot be completely explained by improved access to health care.

The association between poverty and the prevalence of infections that cause cancer is well established. Accordingly, data from Latin American countries confirm the relationship between poverty and the prevalence of *Helicobacter pylori* infection (Porras et al., 2013). However, data on the prevalence of human papillomavirus (HPV) infection do not show a strong socioeconomic gradient (Bruni et al., 2018); the differences observed in cervical cancer incidence rates between groups with different levels of socioeconomic status (SES) are probably explained by the availability of and access to cervical cancer screening. However, it is possible that HPV cofactors associated with determinants of SES play a major role in cervical cancer incidence in Latin American countries; indeed, an inverse correlation between fertility rates and education level in women is observed in the region (UNDP, 2016).

With respect to behavioural risk factors, there is no strong association between cancers associated with tobacco use and GDP in the region; however, a review found an inverse correlation between smoking prevalence and income level in Latin America (Bardach et al., 2016). In addition, other factors that affect the incidence of cancer, such as the prevalence of obesity, do not show robust links with SES; this observation may be due to the transition status, in which some affluent Latin American communities still have a high prevalence of overweight and obesity (Corvalán et al., 2017).

Most research on socioeconomic inequalities and cancer in Latin American countries is focused on access to cancer screening and treatment. As well as income and education level, information from Argentina, Brazil, Colombia, Costa Rica, Mexico, and Peru consistently shows an independent association between health insurance status and cancer screening coverage for both cervical cancer and breast cancer (Brenes-Camacho and Rosero-Bixby, 2009; De Maio et al., 2012; Agudelo-Botero, 2013; Barrionuevo-Rosas et al., 2013; Bermedo-Carrasco et al., 2015; Silva et al., 2017). A pooled analysis from eight Latin American countries highlighted a recent doctor's visit as a factor determining whether a woman had received a Pap smear test, regardless of SES (Soneji and Fukui, 2013), and studies in Brazil and Peru showed reduced coverage of cancer screening among non-White and Indigenous populations, respectively, compared with the general populations in those countries (Barrionuevo-Rosas et al., 2013; Martínez-Mesa et al., 2013).

The few available studies on cancer types for which no screening programmes exist, such as stomach cancer and colorectal cancer, have also shown mortality-associated socioeconomic gradients (de Vries et al., 2015; Parreira et al., 2016). Beyond income or HDI, data indicate the significant role of an individual's health insurance status (stomach cancer in Colombia) and whether an individual has an urban or rural domicile (colorectal cancer in Brazil) in cancer mortality rates.

Avenues to reduce cancer inequalities

Compared with countries with lower GDP and HDI in the region, countries with higher GDP and HDI show not only greater progress towards universal health coverage but also greater progress in the implementation of preventive measures such as vaccinations against HPV and hepatitis B virus (HBV) and tobacco control policies (Bruni et al., 2016; Piñeros et al., 2016). However, the progress of a country in terms of average socioeconomic conditions may mask major social inequalities within the country; disadvantaged populations may be excluded from these benefits.

Although organized screening programmes have been demonstrated to reduce unequal access to early cancer diagnosis, most countries in Latin America provide only opportunistic screening for both cervical cancer and breast cancer. Furthermore, only a few countries have introduced alternative approaches for hard-to-reach populations, such as self-collected HPV tests or screen-and-treat programmes (single-visit approach) for cervical cancer (Di Sibio et al., 2016; Murillo et al., 2016).

Addressing inequalities in cancer by reducing poverty and increasing social protection coverage, especially without losing the significant achievements observed in the reduction of inequality during the past decades, is an enormous challenge for Latin American countries. Greater political commitment is called for, but also innovative approaches to increase health insurance coverage for catastrophic diseases, implement already-proven interventions, and evaluate novel technologies and models of care.

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