

Study: Race, ethnicity may play a role in cause of liver cancer

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A new analysis of liver cancer has identified racial and ethnic differences and emerging trends for this highly fatal disease. The study, conducted by researchers with Sylvester Comprehensive Cancer Center

at the University of Miami Miller School of Medicine and collaborating organizations, has also identified potential targeted interventions to improve control and prevention.

Their extensive review, published Sept. 6 in the journal *Clinical Gastroenterology and Hepatology*, examined 14,420 confirmed cases of hepatocellular carcinoma (HCC), the most common form of [liver cancer](#), diagnosed between 2010 and 2018. Data was culled from Florida's statewide cancer registry and two other public sources.

By the numbers

According to statistics from the National Cancer Institute (NCI) and Centers for Disease Control and Prevention (CDC), HCC accounts for almost 80% of all liver cancers. About 25,000 new cases are diagnosed annually, and its incidence has increased 48% since 2000. The disease is highly fatal, with a five-year survival rate of only 18%.

Despite these numbers, however, most studies looking at the extent and demographic breakdown of the disease have been limited in scope, resulting in a clear knowledge gap.

"To date, studies examining the burden of this cancer have been hospital-based, failing to consider the underlying population at risk, thereby limiting epidemiological information," explained Paulo Pinheiro, MD, Ph.D., a Sylvester cancer epidemiologist and the study's corresponding author. "Hospital studies are subject to selection bias due to referral and health insurance patterns, which tend to limit the overall impact on marginalized populations."

Pinheiro, who is also a professor of epidemiology, noted that liver cancer disproportionately affects people of low socioeconomic status, as well as immigrants, veterans and incarcerated populations, which are

difficult to capture in [clinical studies](#) because they have limited access to health care.

"Consequently, we need truly inclusive population data to establish causes and patterns for this disease, especially if we are to develop effective prevention and control efforts for those most vulnerable," he said.

Pinheiro and colleagues sought to overcome potential biases by using data from three independent, population-based sources: Florida's cancer registry; its public health agency; and its hospitals' discharge records. The researchers deployed novel linkages among these data sources to estimate incidence and trends by cause.

Additionally, they leveraged the vast diversity of Florida's population to focus on patterns in detailed racial-ethnic groups, such as Central Americans, Cubans, Dominicans, Mexicans, Puerto Ricans and South Americans, instead of Hispanic/Latino only, and African American, Haitian and West Indian instead of just non-Hispanic Black.

Previous studies done by Pinheiro and collaborators at Sylvester and researchers elsewhere have shown that 90% of all liver cancers are caused by hepatitis B or hepatitis C [viral infections](#), fatty liver disease and alcohol-related liver disease. However, many of those studies had limitations or did not dig deeper into the most common causes specific to racial-ethnic groups.

For this study, the researchers expanded on past findings by including more years of data—nine in this study versus only two (2014-15) previously—and conducting a far more comprehensive analysis of the data, adding linkages for chronic viral hepatitis biomarkers, performing trend assessments and refining subgroups for Black, Hispanic and Asian populations.

Results

Key findings from the study included:

- Race and birthplace affect causes of liver cancer, with clear differences for various groups.
- Differences in liver-cancer causes reflect the socioeconomic factors associated with each racial-ethnic group.
- Black, Asian and Hispanic populations have marked differences by subgroup—Cubans, Haitians, Chinese, Japanese, for example—and social factors, which influence major causes of liver cancer.
- For men and women combined in 2018, hepatitis C infection and fatty-liver disease accounted for 36% and 35% of all liver cancers, respectively.

Additionally, the research revealed some unexpected findings, including:

- A three-fold difference in rates between Puerto Rican and Cuban men—with Puerto Rican men being higher—proof that grouping all Hispanics together can obscure major differences across ethnicity.
- Filipinos have higher rates of fatty liver-related cancer, similar to Hispanics.
- Liver cancer from hepatitis B infections is not only the leading cause among Asians, but also Haitian-born Black men.
- Liver cancer causes that are increasing—fatty liver and alcohol-related—are both more prevalent among Hispanics.
- Conversely, causes that are declining—primarily hepatitis C—are more prevalent in U.S.-born populations, like whites and Blacks.

The researchers also noted that declines in liver cancer from hepatitis C

since 2015 are likely due to the advent of direct-acting antivirals, while increasing incidence of liver cancer from [fatty liver disease](#) reflect rising rates of obesity and diabetes in the general population.

Next steps

"Moving forward, we need to reinforce the importance of screening all adults in Florida—and nationwide—for hepatitis C and B viral infections, especially if they are in a high-risk group identified by the study," Pinheiro said. "There is a cure for hep C and an effective control for hep B."

Colleague and co-author Patricia D. Jones, MD, a Sylvester liver-cancer specialist, agreed. "Cancer control efforts should begin by expanding screening programs to the most vulnerable groups noted in the study," she said. "Similar efforts are critically needed to disseminate educational materials informed by this granular data to the health care providers who care for these vulnerable groups."

Pinheiro, who has been studying liver cancer for many years, noted that its epidemiology by demographics is quite complex, and until now, often puzzling.

"With this study, we have shined some light on this deadly disease," he observed.

More information: Incidence of Etiology-specific Hepatocellular Carcinoma: diverging trends and significant heterogeneity by race and ethnicity, *Clinical Gastroenterology and Hepatology* (2023). [DOI: 10.1016/j.cgh.2023.08.016](https://doi.org/10.1016/j.cgh.2023.08.016)

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