

Poor people suffer disproportionately from chronic infections

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(PhysOrg.com) -- Kids from low-income families are much more likely to suffer from serious infections such as herpes or hepatitis A than their counterparts in wealthier households.

Two recent University of Michigan studies show a startlingly strong correlation between income and chronic infection in both adults and children, with lower income populations suffering much higher rates of chronic infections and clusters of infections than higher income families.

"There is a large body of research showing that people of lower socioeconomic status are at greater risk for numerous chronic diseases," said Allison Aiello, senior author on the studies and an assistant professor of epidemiology at the U-M School of Public Health. "In this study, we found that lower income populations are also more likely to be exposed to a cluster of persistent infections."

For example, in the context of six infections measured, results showed that while the higher income populations might have been exposed to one or two of these common infections, lower income populations in the same age range may have been exposed to as many as four or five. This is concerning since most of these persistent infections are carried throughout life and have been implicated in several chronic diseases, Aiello said.

For instance, researchers looked at H. Pylori, a bacterium that causes peptic ulcer disease; hepatitis A and B, which can cause liver disease;

and herpes simplex 1 and cytomegalovirus (CMV), both implicated in cardiovascular disease, Alzheimer's disease and other ailments.

Similarly, there is a large difference in the prevalence of infection among people who hold only a high school diploma when compared to those who have a four-year college degree, Aiello said.

For instance, in the adults study, results showed:

- Individuals without a high school education had roughly 50 percent higher odds of having an additional infection compared to those with a degree.

- Those with a postsecondary education had 50 percent lower odds.

- Low income was associated with 33 percent higher odds of additional infection.

- High income was associated with 45 percent lower odds compared to the middle income group.

The paper examining children showed similar startling results:

- Non-Hispanic black children are over twice as likely to be infected with H Pylori, and 1.4 times as likely to be infected with HSV-1 compared to white children.

- Each additional year of parental education is associated with roughly 8 percent lower odds of a child being infected with H Pylori, and roughly 11 percent lower odds of HSV-1.

- As family income doubles, a child's odds of having CMV decline by 21 percent; HSV-1 by 32 percent; and Hepatitis A by 29 percent.

"The primary infections and their long-term effects are both a concern," said Jennifer Dowd, principal investigator on the child paper and co-author on the adult paper. Dowd completed the research as a U-M Robert Wood Johnson Foundation Health & Society Scholar in SPH epidemiology. Dowd is now an assistant professor of epidemiology and biostatistics at Hunter College, City University of New York, and the CUNY Institute for Demographic Research. The lead author on the adult paper is Anna Zajacova, research fellow at the Population Studies Center, U-M Institute for Social Research. She also collaborated on the child study.

The youth paper looked at children 6 and older and the association of infections with height-for-age and socioeconomic status with asthma or other chronic respiratory conditions. The adult paper looked at people ages 17-90 and the types, prevalence and clustering of infections in lower versus higher socioeconomic groups.

The studies are unique because they used data from Third National Health and Nutrition Examination Survey, a national study that is representative of the general U.S. population. The next step is more research on exactly what factors, such as exposure to chronic stressors and poor nutrition, lead to these disparities, Aiello said.

Provided by University of Michigan

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