

Poverty influences effects of race and education on pain after knee replacement surgery

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Non-white race and lack of education are known risk factors for pain and poorer function after knee replacement surgery. What isn't clear is how a community's poverty level affects the outcomes of having a joint replaced. Findings from a new study conducted by researchers from Hospital for Special Surgery (HSS) suggest that lower socioeconomic status at the community level significantly increases the risk of pain and poor function following a knee replacement. These findings could allow clinicians to more effectively target patients at high risk for poor outcomes and provide support and counseling before their patients undergo the procedure.

Past research has shown that African Americans are less likely to undergo [joint replacement surgery](#) compared with whites, despite equal rates of osteoarthritis in both races. Moreover, when blacks do present for surgery, they tend to be in worse health, often having more severe arthritis, more pain, and less functionality. The new work set out to assess how race, education and [poverty](#) at the community level may contribute to this disparity.

The researchers, led by Susan M. Goodman, MD, an associate attending physician at HSS and an associate professor of Medicine at Weill Cornell Medical School, included 4225 subjects from a single hospital patient registry, 194 of whom were black. Based on past findings that [socioeconomic status](#) correlates with many potential health problems,

Goodman and her colleagues linked the addresses of the study patients to census tract data that included the percentage of those in the patients' neighborhoods below the [poverty level](#).

They found that in neighborhoods in which only 10% of the population is below the poverty level - that is, the wealthier neighborhoods - there was virtually no difference in post-surgical pain and function between blacks and whites two years after the operation. However in neighborhoods in which 50% or more of the population is below the poverty level, blacks had significantly more pain and poorer function than whites. In the study, pain and function were measured by a scale called the WOMAC, or the Western Ontario and McMaster Universities Osteoarthritis Index.

"What this demonstrates," explains Goodman, "is that blacks are clearly much more responsive to the effects of poverty. It doesn't turn out to be race in a direct sense that results in increased pain after these procedures, but rather a race effect mediated through the impact of socioeconomic status."

The study authors also reported that patients without a college education had worse WOMAC [pain](#) and function scores two years after their surgeries than those with at least some degree of post-high school education, an effect that was also magnified by increased community poverty levels.

This study demonstrates that the impact of increasing poverty is significantly greater for blacks than for whites, and as poverty is disproportionately experienced by blacks, this may contribute to the persistent racial disparities in [knee replacement](#) utilization and outcomes. Why blacks appear more vulnerable to the impact of community poverty is an important area for future research. Efforts to improve post-surgical outcomes among blacks will need to address the impact of disparities in

socioeconomic status.

Findings from the study will be presented on November 11 as part of a symposium on disparities in joint replacement at this year's American Academy of Rheumatology Annual Meeting in San Francisco.

Provided by Hospital for Special Surgery

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