



## Can Your Neighborhood Affect Your Health?

January 2018 podcast episode transcript

Featuring [Mustafa Hussein](#), Assistant Professor, Public Health Policy and Administration,  
University of Wisconsin-Milwaukee

Hosted by Dave Chancellor

---

Chancellor Hello, you're listening to the Poverty Research and Policy Podcast from the Institute for Research on Poverty at the University of Wisconsin-Madison. I'm Dave Chancellor.

This, our January 2018 episode, is about how being poor and living in a poor neighborhood can lead to worse health. I talked to UW-Milwaukee public health scholar Mustafa Hussein about this when he visited IRP last year. For a lot of us, it probably makes sense that differences in socioeconomic status are related to differences in health, but Professor Hussein says that actually disentangling the factors behind inequalities in health is a real challenge--and that's where his research comes in.

Hussein My PhD is in health policy and then I did my postdoctoral training in social epidemiology, which is the study of the distribution of social factors in the population as they relate to health. I got very interested in health inequalities, or differences in health between people depending on their social position, being rich versus being poor, being white versus being black, or minority ethnicity, generally, and how these social positions affect their health status. And health status is a broad term that encompasses how you feel today, that encompasses the levels of how frequently you feel blue or depressed, your risk of a heart attack. In all of those outcomes we find evidence that there are differences by income, differences by education, differences by race or ethnicity, especially in a country like the United States.

Chancellor Hussein says that as a first way to think about this, we could think about the origins of how people become poor or how they might become more affluent.

Hussein You could be born into poverty because your parents were poor. One could be born into affluence because his parents were rich. These initial opportunities to begin with are different but the other piece to it is that these opportunities that are set up were not different just out of randomness. They were created by values and attitudes towards certain groups of people, so if you think about race for example, there is historic discrimination against people of color. Over many, many centuries they were considered inferior, they were given certain jobs, they were treated in a certain way. Essentially, they were discriminated against. Not only in terms of having actual resources, but even in opportunities to get those resources as well. So that drives people into these positions along the socioeconomic ladder, you see people who are rich, you see people who are poor and you see people who are in between.

Chancellor And Hussein says that once you're wealthy, or poor, the consequences of that, especially when it comes to health are different too.

Hussein Being poor, for example, exposes you, makes you more likely to experience stress. You can't make your ends meet and may live in a poor neighborhood where you're more likely to be exposed to crime, you're more likely to be exposed to poor infrastructure, low quality schools, no parks or parks where you find a lot of broken needles, places that you can't really enjoy. And then you start to develop behavioral

Hussein, responses to that and to these kinds of stressful experiences of being poor. These behavioral responses continued could be things that range from smoking, binge drinking, to drug injection. You could also develop depressive symptoms, become depressed more often. Then, all that stuff trickles down and goes under the skin and causes your biology to be impaired. Our bodies are designed in such a way that we have adaptive mechanisms for stress response, for handling stresses but getting exposed to stress over and over and over again tends to deplete those resources and make them less responsive or, if you will, less flexible or elastic. So, people for example who live under chronic stress. When they are exposed to even mild forms of stress, like you ask someone to give a public speech or to take a color test on a computer to identify a color, you give them a picture that looks red and then you change it immediately and ask them what color it was, that actually creates a stress in them and what happens then is that their cardiovascular response, the response of their heart and blood pressure becomes sustained. And then it very slowly goes back to normal. So, they are tense, they are stressed and that can lead to a whole host of other things, it could reinforce the social position they came from, so they become more likely to make bad decisions, they become more likely to discount future benefits and choose things that give them immediate reward and then they become less likely to take risks or further risks. They get trapped in their initial positions and their low income level or their low education level and it's hard to move beyond that. It's a vicious cycle. And we can measure social position and we can measure health outcomes and there is tremendous evidence in the epidemiology literature and the sociology and the psychology literatures, especially about those psychophysiological responses to stress and to poverty. I think that is established science.

---

Chancellor When thinking about how social position makes a difference for health outcomes, researchers often focus on the environment or neighborhood where a person lives -- because, as Professor Hussein was saying, it can matter for things like quality of housing, exposure to crime, access to services or grocery stores, or even being able to safely exercise outside. But, Hussein says he started off with the hypothesis that being poor doesn't just influence the kind of neighborhood that someone is likely to have access to.

---

Hussein It does certainly do that, but above and beyond that, it also causes the consequences of your neighborhood exposures, the environment that you live in, to be more taxing to your body than a person who would be exposed to the same environment, but they would be rich themselves. So, think about two people, one poor, one rich, both live in a poor neighborhood for whatever reason. Both are exposed to the same levels of stress in the poor neighborhood, exposed to the same levels of crime perhaps, whatever exposure could be there, the consequences of that exposure for the poor person are more dire than they are for the richer person. So that is my hypothesis. Think about something like depression, or smoking. The poor person that lives in a poor neighborhood, they could develop smoking out of stress that they experience in the neighborhood but then it becomes much harder for them to control their smoking behavior. Perhaps they don't have access to medical care, they don't have access to a supportive environment at work or at home that helps them quit smoking. On the other hand, the higher income person, although he might be living in a poor neighborhood would be more likely to have a better job, or an environment that supports him quitting, or have health insurance that would support him to go to a doctor and receive smoking cessation treatment. And that goes on with depression, that goes on with a range of these factors, of these risk factors of disease that could drive you to have disease eventually. That is one way how our social position, being poor, aggravates the risk of disease related to some of the factors that it causes us to experience. Again, like the neighborhood environment.

---

Chancellor Hussein says that if you're poor and living in a poor neighborhood, part this increased risk of disease or other health issues comes about through experiencing a number of risk factors together.

---

Hussein Again, you tend to experience poor neighborhood quality, poor walkability, poor safety, and then you also tend to develop coping mechanisms like smoking. And again, people are more likely to have depressive symptoms and so on, these factors together tend to synergize and to work together on your biology. The risk to your body that comes out of all of them together is larger than the risk of each individual one of them. So, what ends up happening is that although people live in the same neighborhood, because the poorer person does not have the ability to control the consequences of the things that are

Hussein, continued happening to him, the overall impact of the neighborhood environment on their body is expected to be much larger than a person who's better off but lives in the same neighborhood.

---

Chancellor Research like Hussein's often focuses on this concept of the neighborhood where a person lives. So, I asked him what he really means when he's talking about neighborhoods in this context.

---

Hussein The neighborhood as a unit of geography is something more amorphous than we tend to think of. Ideally, it would be defined by the person himself and the environment he interacts with. However, the way we measure it in research is using administrative data for the most part. The Census Bureau, for example, has designated tracts. These tracts are small areas of about 4,000 to 5,000 people who live in close proximity. There are smaller units like block groups that are a couple hundred people. We tend to use these as proxies for neighborhoods because we think that if 5,000 people live within, say, a one square mile radius, they are probably experiencing a very similar environment versus people in a county, for example, where there's just so much variability there. So, I guess we're trying to find the unit that has the most heterogeneous set of exposures and that tends to be tracts or block groups. Some researchers have tried to study neighborhood clusters, so clusters of communities that tend to live in a particular geographic area like the north side of Chicago or the south side of Chicago or things like that. And the findings tend to be similar, so the choice of the neighborhood scale doesn't look like it makes a lot of difference in terms of the patterns we're finding. And then another way is to, if I have your address, I can really do some geographic measurement around your address. I can for example find out the number of gyms or the number of grocery stores in a one-mile radius from where you live. Then I can use that as a measure of your exposure to these facilities, for example, or these parks or other physical amenities.

---

Chancellor Professor Hussein says that we know that risk of having a heart attack, for example, is much higher among lower-income people than it is among their wealthier counterparts, and he's trying to find out how much of that higher risk is due to the neighborhood a person lives in.

---

Hussein Finding data on neighborhood environment and the quality of the social and physical exposures that people experience in neighborhoods is hard, but we were lucky to have this study, the Multi-Ethnic Study of Atherosclerosis. It's a cohort study where around 6,000 people were recruited in 2,000, from six U.S. cities: New York City, Los Angeles, Baltimore, Chicago, Forsyth County in North Carolina, and Saint Paul and Minneapolis. These six field sites. So, those 6,000 people were folded up, they were measured, we gave them questionnaires, and we measured their levels of a number of factors including whether or not someone had a heart attack by the end of the first year, for example. We folded them up about 12 years and we recorded whether people had a heart attack, or a stroke, or some major cardiac event during that period. First we analyzed the difference by social position, meaning by the amount of income or education or wealth that these people have and the relationship between that and their risk of having a heart attack over those 12 years. We found the rate of incidence among the rich to be much smaller than among the poor. Almost half, actually. The rate among the rich was about 7 out of 1000 person years, so that is our denominator. 1,000 population. The risk among the poor was about 12, so 12 to 7. So that's almost double the risk among the poor and half the risk among the rich. And then we found that neighborhood, the difference in neighborhood environment explains about 35 percent of that, so it's a pretty substantial proportion. And what this means is that if we want to reduce that inequality, that higher disease burden among the poor, then we've got to do something about the neighborhood they live in.

---

Chancellor Professor Hussein says that when it comes to thinking about designing policy interventions aimed at improving the health of the poor, his analysis also shows evidence that simply delivering an intervention to an entire population will have limited benefit because people that are more educated and better off will be more able to take advantage of services and opportunities. If we want to think of the kinds of targeting that can pay off, he says that a good example might be the Affordable Care Act in which specific efforts were made to reach out to poor and minority populations to help them sign up for health insurance.

Hussein If these efforts were not to happen, you would well expect that people who know better, people who are higher educated will be more likely to sign up and receive the benefits of having insurance than the poor. So, unless you go the extra mile, you're not -- the presence of these entrenched sources of disadvantage among the poor, being low income, not having enough skills, not having enough education to navigate the systems or to see how you would benefit from a given intervention in the community, just stifles or blocks your potential benefit from that intervention. So that is a potential implication that I think should be explored in further research and looked at to see how interventions could be tailored to improve the health of everyone, equitably and not equally because people start from very different footsteps.

---

Chancellor Many thanks to Mustafa Hussein for sharing this work with us. This podcast was supported as part of a grant from the U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation but its contents don't necessarily represent the opinions or policies of that Office or the Institute for Research on Poverty. To catch new episodes of the Poverty Research and Policy Podcast, you can subscribe on iTunes or Stitcher or your favorite podcast app. You can find all of our past episodes on the Institute for Research on Poverty website. Thanks for listening.