

Researchers hope to reduce racism in healthcare by using systems science to test intervention models

WFSU | By [Regan McCarthy](#)

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Students walk near Florida State University's College of Medicine. Researchers at the school have received a grant to explore models for reducing racism in healthcare.

The impacts of racism can be deadly—especially in the field of healthcare where disparities highlight health inequities between white and minority communities. A group of Florida State University Researchers has [received a \\$3-million grant through the National Institutes of Health](#) to help change that.

Sylvie Naar says when she found out she and her team had received the grant, she was in tears, "because it was like we were actually getting funded to do something about racism in the world."

"We're not going to be able to improve the health of this nation without addressing racism in healthcare."

Sylvie Naar

Naar, a Distinguished Endowed Professor at FSU's college of medicine, is principle investigator for the five-year grant. She'll also be working with Assistant Vice President for Research and Academic Affairs Norman Anderson and College of Social Work Associate Professor Carrie Pettus.

Naar has spent years researching health disparities among minority youth.

"We're not going to be able to improve the health of this nation without addressing racism in healthcare because it affects access to care, it has direct effects on the immune system and stress...mental health, physical health," Naar says.

Studies show racism has long had broad impacts in healthcare, from whether a person has access to a doctor—a [2012 study shows people living in predominately Black zip codes are 67% more likely to face a shortage of primary care doctors](#), to how they're treated—a [2016 study found Black patients are frequently not given enough pain medication](#) because many white medical providers incorrectly believe Black people have a higher pain tolerance than white people.



Florida State University

Sylvie Naar has spent year studying the impact of health disparities on minority youth.

But Naar says there aren't a lot of proven ways to reduce racism within the healthcare system.

"The only approach has been implicit bias training and we don't really know who that works for, how much you need," Naar says. "We know one workshop is not fixing racism in this country, and implicit bias is just one aspect of racism."

Naar says she and her team will use systems science to help answer some of those questions—like who should be trained, what kind of training do they need and how much is enough to minimize the impact of racism within the healthcare industry.

"What we want to do is to take a very, very careful methodological approach to developing new anti-racism interventions and figure out how to make sure that they are implemented in the system," Narr says. "So, we were very interested in the concept of

disruptive innovations, which is how do you take an innovation and disrupt the system so it affects the whole system and that the innovation takes hold.”

Naar says to do that using systems science, she and her team will start with a community engaged approach—connecting with local residents, providers, patients and other stakeholders to create what she calls a “map” of the system and pinpoint racism within that map. Next, they’ll use social science literature to develop potential interventions or trainings that might help to reduce that racism and finally they’ll use mathematical modeling to test which of those interventions works best and where within the system the interventions should be applied.

How does systems science help researchers evaluate potential racism intervention programs?

“They can take data sets and show us in a virtual systems environment—show us in a virtual world—if you do this intervention this is the change that happens across the system, if you do this intervention, this is the change that happens across the system,” Naar says. “This will then tell us which are the most potent interventions that we should then pursue to the next level—at the policy level and the individual provider level, at the organizational level.”

An analogy is building a bridge. An engineer draws a bridge, then uses mathematical models to test that bridge, finding out where it’s weak and which design is strongest. But in this case there are more engineers and more things to test.

“So first of all to even build the map of the bridge we’re not going to have just one engineer, we’re going to have a complete, community-engaged, interdisciplinary team to make the bridge map—so all the things that go into that: the engineer, the people that are experts in the soil and the community. So that’s one thing. And then what system science does is like that bridge—if this one bar breaks what happens to the whole system? If we change this one part, what happens to the whole bridge and that’s what you would simulate with the interventions.”

Naar says those simulations let researchers figure out what interventions could have the biggest and broadest impact before they start testing them through trials with real people. That streamlines the process.

“If you skip all this and you jump to these control conditions, like ‘I have an idea of what might help’ and ‘let me compare one group to another,’ you waste so many resources on failed interventions. So we’re trying to transform this pipeline to show that you have to do this first step, and if you do it well you now have the most potent intervention to roll out into the clinical trial world.”

Naar hopes the research her team is doing could someday be applied beyond healthcare systems.

Naar says her team is focusing on racism in the healthcare industry right now, and more specifically racism in patient centered medical homes for this research, but she says once this method is developed she believes it could be used to help address racism other spaces.

“If we develop this model, which is the systems science model and the group model building, you could take it into other systems—like criminal justice or schools. We could follow this model of group model building, virtual environment intervention development into different systems,” Naar says.

Naar says that’s one of the things she’s really excited about. She believes her team’s research could develop a new model for how researchers do their work. She says right now, typical science focuses on the individual, maybe looking at ways the patient or provider could change. She says this research takes a broader look by trying find ways to make changes throughout the system as a whole.

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