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MOVING PSYCHOLOGICAL SCIENCE TOWARD A POPULATION HEALTH APPROACH:

MEASURING POPULATION MENTAL HEALTH

TRANSCRIPT

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Isaac Ahuvia: Hello, my name is Isaac Ahuvia. I'm a PhD candidate in clinical psychology at Stony Brook University. This year, I was a part of a large team of researchers working on proposal for a population approach to mental healthcare. Today, I'm going to present an excerpt from our paper, which is available now in *American Psychologist*, about how to measure mental health at the population level.

First, I'm going to talk a little bit about our current approach to measuring mental health and why we need to take bigger if we're going to improve mental health population level. Secondly, I'll explain two different approaches to measuring mental health outcomes at a large scale. That includes taking individual-level data collection, scaling it up, and collecting data at the community or macro level rather than just at the individual level. Then finally, I'll talk about where we need to go as a field to put ourself in a position and measure population mental health effectively.

Mental health interventions are traditionally targeted at individuals and outcomes tend to be assessed at the individual level. Take this hypothetical man here, a stick figure. Let's say that he's feeling sad, he's in distress, and he's in need of some kind of help. As psychologists, naturally, we get to thinking, "How can we help him?" Generally, our approach is to use some kind of psychological intervention that's targeting the individual, for example, therapy. Therapy can be one-on-one. It can be in a group modality, but generally, we're thinking about individual clients in our treatment.

Let's say we get this individual into therapy, and we help. Great. We're going to be curious about how we know that we're being helpful. Generally, when we try to evaluate mental health interventions at the individual level, we'll use an approach like the randomized controlled trial. We'll take our stick figure here, we'll take a lot of people just like them, and we will give some of them some intervention. Some of them will not receive an intervention, and we'll measure their outcomes after. This is true in a traditional randomized controlled trial design.

Then when we compare the intervention group and the control group afterwards, we can try to determine whether or not our intervention works on average. Let's say in this example, the intervention that we're using with this person works as per our evaluation. That's great. Naturally, our question is if we're trying to think about population-level mental health, while we know it helps individuals, we scale this intervention up and we offer it to a lot of individuals, will it help a lot of people just the same as it helps our individual people in our study?

The answer is kind of. It's not always true that the results from small-scale studies will scale up and generalize when those interventions are applied at a large scale or population level. Then there are a lot of reasons for that. For example, the intervention might be implemented differently at a large scale.

They might be implemented in different contexts or with different people. As a result, the effect may be different, the intervention may be received differently. Of course, even if we have an intervention that works, not everybody is able to access that intervention. For all of these reasons, even if we have an intervention that we can study and show is really effective in a controlled study, that doesn't necessarily mean it's going to have the same effect at the population level if we could just scale it up.

Though when it comes to scale-up, one thing that we can do as researchers is measure, actually monitor scale-up as it happens, to make sure that it's occurring in the best possible way where the intervention is going to translate to the best possible version of itself and have the biggest effects at the large scale that we want it to. There are different things we can do when we're measuring scale-up. That includes measuring the training the providers are receiving, measuring how the intervention is being implemented, assessing community partner buy-in, and the capacity for partners in the community to support a scaled-up intervention.

There are lots of other considerations as well. There are ways to measure this scientifically to try to get a sense for how interventions are being scaled up. Besides the scale-up question where we start with intervention that is a small-scale, or individually focused intervention, and try to scale it up, what else can we do? Well, one thing that we can do is we can think about bigger population-level interventions just from the outset. We're thinking about interventions that are going to be implemented at a large scale, for example, via law or public health messaging, not just one-on-one therapy.

Or if we're thinking about laws or policies that we hope will make individual interventions more accessible, now we have another question, which is how can we measure these outcomes at a population level? We're going to outline new ways that we can do this. The first is by using individual-level data in the aggregate, so measuring individual-level outcomes among a bunch of people in the population. The second is by using data that are specifically at the community population level. First, I'm going to talk briefly about using individual-level data in aggregate. Generally, when we're concerned with individual mental health outcomes, we'll assess this via common ways, just a self-report interview or questionnaire where we'll ask somebody questions to try to get a sense for their mental health outcomes.

Now, if I'm concerned with somebody's mental health outcomes, I might ask them directly. If I'm concerned with the mental health outcomes for entire community or county or state or country, one straightforward way to assess this is just to ask a bunch of people in that community, city, country. If we can repeat the data collection process with not just one individual, not just two, not just three, so on, collecting data from a lot of people across the population, doing this in a way that is generalizable, where we're collecting a representative sample of the population, that's one way to get a sense for everybody's mental health on average, or the mental health outcomes of the population.

There are examples of nationwide surveys that already do this, National Health Interview Survey, the National Survey on Drug Use and Health, and there are other examples as well. These tools aren't always as comprehensive as we might like as clinical psychologists, there are a lot of things they don't assess in a lot of populations. For example, young people that they don't always assess, but they're good templates for what this kind of survey would look like.

Once you have a lot of data collected from, again, a representative sample of whatever population you're interested in, let's say the United States, then you can assess what the mental health levels are like in different parts of that population, or for the population as a whole. Here's an example.

This is a study that looked at mental illness rates by sub-state areas, so a little more specific than states, but a little broader still than a city or a county. Once you have these kinds of data, not only can you use them to assess population mental health, but if you collect this data regularly enough and at the right geographies, you can use these data to assess the effectiveness of population-level mental health intervention.

Considerations for collecting and using these data. First of all, this is a really time and resource intensive way of collecting population-level data. Of course, we want our measures to be valid always, probably also want our measures to be relatively brief. We want to have a representative sample, can be achieved in a number of ways in the use of survey weights to make sure that the people we're talking to are representative of the population that we're trying to generalize to.

Then when it comes to measuring population mental health for a specific state or county or smaller geographic area, we have to make sure that we're collecting data at that level, that we have a representative large enough sample of people within that geography and the data are available at that geographic level. Likewise, if we're interested in looking at people's mental health, the mental health of a population before and after something happens, for example, an intervention is implemented, we have to make sure that the data are collected before and after at appropriate time points.

Lastly, there are different versions of these data that are generally made public. One term is microdata. Microdata refers to the actual data sets where each row represents one or more depending on the weight survey response, and the columns are variable. This is a traditional data set that you would be used to using. Oftentimes, microdata for these natural surveys are made available, but not always, and often when microdata are made available, they're made available at a much broader geography than they make available for summary statistics.

In general, microdata are necessary for calculating things like correlations, doing a lot of the analyses that we would like to do to get a better sense of population mental health. If Microdata need to be used for those analyses, we have to make sure that not only are they made public, but that the microdata, not only the summary data, are available at the appropriate geographic level.

Another approach to measuring mental health outcomes at the population level is rather than start at the individual level and just aggregate, we can use data at the community level. Data not about individuals in that community, but about the community itself. These can include things like mental illness rates. That's an example of a community-level variable that you can calculate by just interviewing a lot of people within the community.

There are also variables that are specific to the community level. For example, number of mental healthcare providers in a city or in a county, levels of poverty and community violence, public policy. Good example of this is from the Movement Advancement Project which calculates and provide state-level ratings of LGBTQ equality laws. These variables now can be used in analyses to try to explain why population mental health in these different places is at the level that it is. Here's an example of a study that looked across some states with same-sex denial laws, laws permitting the denial of services to same-sex couples with mental distress, and other states that didn't. Also looks over time around when these laws are being implemented, and finds that in those states among sexual minority adults, specifically, the level of mental distress increases.

This is the kind of analysis that uses, on the one hand, estimates of mental distress that you're getting from individual-level data collection at a large scale. Also, this community or state-level

variable that's not a measure of individuals, but is a measure of the community itself. When collecting this community-level data, we also have a consideration.

First of all, community-level variables can be predictors as well as outcomes. There's an example I just gave where it is a predictor or explanatory variable, which can also be viewed as outcomes in and of themselves. Data should still be collected at the appropriate geographic level. That analysis that I just gave as an example that looks at states. If we're interested in more local policies or more local interventions, we would need this information at the local level, whether that's a county or a city, or a census tract, or whatever the level is.

Then just like with individual-level data, these data have to be collected at appropriate regular time points for us to assess change over time. Likewise, just like with other forms of data we discussed, this data need to be made public and available for researchers to work with. In both cases, with individual-level data, community-level data, our data set ought to be, first of all, valid and reliable. They need to be scoped to the right geographic level for whatever the use of the data are. If you're looking at state law, you need something that's scoped to the state. If you're looking more narrow, you need data that's available, a more narrow level, and it needs to be collected at the right time points as well. Then, of course, it needs to be made available for research and for other purposes.

Next steps when it comes to measuring population mental health. First of all, we need to really rigorously take stock of what data we already have. A lot of these data are already available. There are also limitations in, for example, nationwide surveys that assess mental health. There are variables they don't collect.

There are limitations in the geographic levels that it's made public at. We should take stock of what we have and what we don't have, and we collect the data that we need. With these measures, assess population mental health. Thank you, everybody, for your time. Thanks for watching. Here's the DOI for the article in case you would like to read more. I'm sharing some other links as well to relevant data sets. Thank you.