Weighing the Evidence
Program Transcript

NARRATOR: After successfully completing a study or project, nurse researchers must carefully weigh the evidence and data they collected to determine the credibility of their findings as well as the implications for nursing practice. In this video, Doctor Kristen Mauk discusses how she weighed the evidence from her DNP project on nursing education in the rehabilitation setting. She also described how she analyzed the results of her pre- and post-tests, how she determined whether the results were statistically significant. And how she formulated potential explanations for her results.

KRISTEN MAUK: So then after the implementation, I looked at the pre- and post-tests, and then I went back to my outcomes. So I looked at outcome number one, it was met because they improved. In 14 of the 15 tests, showed statistically significant improvement in their competency knowledge. And outcome number two was met because they reported increased knowledge and they started forming a study group for getting ready for certification.

So if you look at under evaluation, you'll also see a table that I put together showing the mean scores of their pre- and post-tests and the significance. You can see that most of them were highly significant between the pre- and post-test.

And then in the last column, you talk about some significant findings. For me, it was things like-- I thought maybe there would be a correlation between the years of experience that a nurse had worked and knowledge about things. But actually, there were some negative correlations that were unexpected too. So you really do have to look at your data and not go in with preconceived knowledge that, oh the people that have worked for 20 years will be good in the certain subject and not in others. But that was some very interesting things.

And one of the things I’ve found is that the nurses might have overestimated what they thought was their knowledge on rehabilitation just because they worked on a rehab unit. And that was kind of an interesting finding too. Some of the surprises were that the items that I thought that they might be more competent in weren't necessarily true and vice versa.
So I thought that they wouldn't know as much about dysphagia or swallowing and they seemed to know a lot about that. Some little interesting tidbits are the staff, because most of them are married females and maybe a little older, middle-aged-- not teenagers--

[LAUGHTER]

KRISTEN MAUK: --scored higher in the area of sexuality knowledge. And that was sexuality with disability, but I think maybe their life experience influenced that. So that's an example of, you need to go back and look at your data if you get something you didn't expect to answer why, and ask why that occurred.

Probably another thing that was maybe a little bit surprising finding is that the nurses ranked how, on their demographic sheet, how expert they thought they were in rehab. And most of them put that moderately they weren't proficient, but they weren't beginners. And when I correlated that with their test scores, it seemed like maybe they had thought that they knew more about rehab than they actually did.

And I think some of that comes with being a new unit and not realizing how much knowledge is unique to that specialty area. And I thought that was a very interesting finding. I would encourage students not to get discouraged.

I think in the DNP program, or at a master's level, you're not expected to be the master of statistics. And even with a Ph.D., I don't consider myself the master of statistics. But you do need to know what are sound methods.

Look at sample size, look at things that would jump out to you as not being sound. Do they assure confidentiality? Did they insure anonymity? Is it sound research practices?
And sample size is only one, and that differs with qualitative. I know sometimes students like to apply quantitative rigor as far as critically analyzing research articles to qualitative articles, and that doesn't work. Because qualitative, your sample size is going to be much smaller. So I think knowing the difference between quantitative and sampling in that particular area and qualitative. The differences between that I think is huge and a lot of students don't understand that.

When we talk about validity and reliability, that's important. Because we're looking at does a tool measure what it's supposed to measure, and does it do it consistently. That's basically what validity and reliability is. So usually you can take a statistic and analyze the reliability of your tool.

And oftentimes we do that with what's called a Cronbach's alpha. So if they give you an alpha score, you can look at that. And if it's high, than you can be confident that that's a pretty reliable tool.