





And what we did was we selected from our sample. We started in 2017, taking some samples of various documents, and realized that these narratives, I call them narratives, again, court documents, these texts, stretched farther back in time.

So we went back to 2014, got some more RNs for our sample. So ultimately, our total sample was 51 RNs and 236 documents. And by documents, we really...we're talking about court events, court proceedings. If you look in Tf1 0 0viwas 51



there were individual factors and system-related failures that appear to be contributors to substance use in nurses.

So for the rest of our time, I'm going to talk about the third study that we did in this project, Study 2 of Phase 2. And this was the quantitative approach to these data that we took. We really took a focused approach to trauma, psychological trauma, to see if there were relationships or if we could somehow use trauma as a predictor to substance use in nurses.

We also looked at risk rates in terms of these data. So what are the screening rates of tobacco, alcohol, and other substance use? And again, what are the predictor variables of such substance use? So, again, in this Phase 2, Study 2, we had almost 1,500 nurses who contributed to our data.

And we incentivized them with a \$50 Amazon gift code, which, again, was made possible through the funding that we received. We were very pleased, also, that these individuals completed, we had a very high completion rate. So our data set was very, very complete.

We had very few missing data pieces. As you can imagine, we had characteristics of our sample, which included 92% being female, a mean age of 44 years, most of them were Caucasian, married, and not of Hispanic ethnicity. Average time of nurse licensure was 18 years.

This is a very condensed slide of all of the validated measures that we used. So in addition to the demographic variables that we asked, we had a brief survey for organizational support, depression, anxiety, resiliency, optimism, religiosity, and then we also looked at those trauma-related variables, which, again, was the focus of the study.

There's been a lot of press, a lot of attention given to adverse childhood experiences, and we know from some of the emerging literature in student nurses that that is a factor for them in terms of substance and alcohol use. We used a Life Events Checklist to determine what had happened in terms of life, what I call part of that humankind trauma.

We also looked at workplace violence, lateral violence, or negative behaviors in the workplace, and second-victim items which relate to the occurrence of a medical error, and then if a medical error has happened, if they are experiencing psychological harm from those errors. So our outcome measure was the World Health Organization ASSIST tool.

So interestingly enough, just coincidentally, the moderate risk, both low and high, for both tobacco and alcohol was 11.6% for each of those. Other substance, moderate risk was 10.4% for the nurses. We also performed regression analysis to look at what might be predictors based on those measures that I reviewed with you, what's going to be coming out in our final regression model.

Our regression coefficients were fairly modest, but when you talk about this type of complexity in a human science study, I think that they are leading us towards novel information that we can build upon. For tobacco use, we found that those ACE scores popped up as highly significant. We also found that the Lateral Violence Question 38, which has to do with them losing their patience and directing behaviors that can be interpreted as violence towards co-workers, popped up as well.

We also see the depression and anxiety, and past ISNAP score or ISNAP involvement. Again, ISNAP stands for Indiana State Nursing Assistance Program. It's a monitoring program conducted by the state of Indiana to help monitor nurses who are either self-identified or have been identified as using substances.

Our alcohol regression model, little bit higher, but you, again, see some trauma variables percolating through. The Life Events Checklist, which has to do with things that have happened to them or they've witnessed, or things that have happened on the job, and the Lateral Violence Question 39, which had to do with how often have you crossed the line and used behaviors that could be interpreted as lateral violence towards others.

Again, you see depression and anxiety as well. Finally, our third regression model had to do with other substances. The ASSIST tool really goes into specific substance use, like, benzodiazepines, opioids, those types of things.

However, we felt that the Ns were small, so we did collapse those into other substances. These findings can be found in an in-press article in the *Western Journal of Nursing Research*. But, again, in terms of the model, you see three trauma-related variables in this final model, the adverse childhood experience score, the life events, and Lateral question 37, which has to do with how often do you see co-workers losing their patience and directing behaviors that can be interpreted as lateral violence.

So witnessing this towards others. So to sum up what we found and in terms of making sense of these three models, we saw that depression and anxiety, and questions related to the lateral violence were in each of the three models. We also saw indications of trauma in terms of adverse childhood experiences or life events in all three models as well.

Of course, there are limitations to every study, and this study is no different. I alluded to social desirability earlier on, and that is certainly the case when you try to measure substance use in a profession such as nursing where livelihoods are at stake and in addition to all of the difficulties in terms of this phenomenon in general.

I had a nurse...several nurses call me, actually, wanting reassurances that these data were confidential and anonymous. They were very hesitant to really report use in the questionnaires and sample. And so

that is certainly a limitation as well. It was a very homogeneous sample, and other substance use category Ns or frequencies were very small.

