

## **ABSTRACT 002**

**Category:** Research on nursing diagnosis

**TITLE:** **A Monte Carlo simulation study of three approaches for content validation index used in research about nursing diagnoses**

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### **Introduction:**

Content validation index (CVI) is the main statistic used to measure the opinions of raters about the relevance of defining characteristics and related factors. The use of CVI is controversial due to different expertise level of the experts, and the small number of experts with a high level of expertise.

### **Methods:**

A Monte Carlo simulation study was performed to compare the results of three different approaches of CVI based on: 1) weighted mean of experts' opinions, 2) proportions calculated from combination of extreme categories, and 3) weighted mean of expertise level. The data were simulated based on multinomial probability distribution of five categories, using samples sizes of 1000 values. Mean, confidence intervals, and standard deviations were computed for each approach to all simulated values, different sample size of experts, and different values of the correct CVI.

### **Results and discussion:**

The CVI based on weighted mean of expert opinion presented overestimated values, mainly for low values of the correct CVI; the proportion-based CVI presented underestimated values, and the lowest precision among the three approaches. The third approach presented values lower than the correct CVI, but with similar precision to the first approach. These results were similar for different sample sizes and different values of the correct CVI.

### **Impact on the discipline:**

Use of CVI based on expert opinion can lead to nursing diagnosis which include spurious components. The use of CVI based on proportions is imprecise, producing poorly defined diagnostic structures. The use of CVI based on expertise level is a precise and conservative approach to validate nursing diagnoses.