DATA DRIVEN DECISION MAKING FOR SURVEY REDUCTION: CASE STUDY FROM NEUROLOGY RESEARCH

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The goal of this research was to develop an abbreviated and statistically robust instrument to assess autonomic symptoms that provides clinically relevant scores of autonomic symptom severity based on the well-established questionnaires. Data from 405 healthy control subjects seen at the Mayo Clinic Autonomic Disorders Center were collected. The length of the questionnaire was reduced from a total of 169 to 31 questions using exploratory factor analysis. Our new simplified scoring algorithm resulted in higher Cronbach alpha values in all domains. This reduced instrument allowed researchers to focus on clinically meaningful variables. Also, a shorter survey instrument was less time consuming and less burdensome for critically ill patients, allowing for capturing accurate responses and limiting missing data. The application of exploratory factor analysis in reduction of dimension reduction in this area of neurology research is novel. This reduced survey instrument is now being used to capture data from various clinical studies around the world.