Public Abstract
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Title: DEVELOPMENT AND VALIDATION OF AN INFLUENZA ASSESSMENT: EXPLORING THE IMPACT OF KNOWLEDGE AND SOCIAL ENVIRONMENT ON HEALTH BEHAVIORS

Assessments of knowledge and perceptions about influenza were developed for high school students, and used to determine how knowledge, perceptions, and demographic variables relate to students taking precautions and their odds of getting sick. Assessment scales were developed from data on 205 students using the Rasch model. These were then used to collect measurements on 410 students from six high schools. Scores were calculated using the 2-parameter logistic model and clustered using the k-means algorithm. Correlations were evaluated with the Kendall-tau test, multinomial logistic regression was used to identify the best predictors and to test for interactions, and neural networks were used to test how well precautions and illness can be predicted using the significant correlates. Precautions and illness had more than one statistically significant correlate with small to moderate effect sizes. Knowledge was positively correlated to compliance with vaccination, hand washing frequency, and respiratory etiquette, and negatively correlated with hand sanitizer use. Perceived risk was positively correlated to compliance with flu vaccination; perceived complications to personal distancing and staying home when sick. Perceived risk and complications increased with reported illness severity. Perceived barriers decreased compliance with vaccination, hand washing, and respiratory etiquette. Factors such as gender, ethnicity, and school, had effects on more than one precaution. Hand washing quality and frequency could be predicted moderately well using the neural networks. The validated instruments may be useful for measuring knowledge and perceptions of high school and college students in future research, and results may be useful to researchers and public health professionals seeking to predict and understand the precautionary actions people take against influenza. Implications for future uses of the instruments and development of interventions regarding influenza in high schools are discussed.