Antimicrobial Resistance: Knowledge towards Antibiotics in a Mexican Population

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Abstract : Introduction: The increasing prevalence rate of resistant and multiresistant bacterial strains to antibiotics is a threat to public health and requires a rapid multifunctional answer. Individuals that are affected by resistant strains present a higher morbidity and mortality than individuals that are infected with the same species of bacteria but with sensitive strains. There have been identified risk factors that are related to the misuse and overuse of antibiotics, like socio-demographic characteristics and psychological aspects of the individuals that have not been explored objectively due to a lack of valid and reliable instruments for their measurement. Objective: To validate a questionnaire for the evaluation of the levels of knowledge related to the use of antibiotics in a Mexican population. Materials and Methods: Analytical cross-sectional observational study. The questionnaire consists of 12 items to evaluated knowledge (1=no, 2=not sure, 3=yes) regarding the use of antibiotics, with higher scores corresponding to a higher level of knowledge. Data are collected in a sample of students. Data collection is still ongoing. In this abstract preliminary results of 30 respondents are reported which were collected during pilot-testing. The validation of the instrument was done using the Rasch model. Fit to the Rasch model was tested checking overall fit to the model, unidimensionality, local independence and evaluating the presence of Differential Item Functioning (DIF) by age and gender. The software Rumm2030 and the SPSS were used for the analyses. Results: The participants of the pilot-testing presented an average age of 32 years ± 12.6 and 53% were women. The preliminary results indicated that the items showed good fit to the Rasch model (chi-squared=12.8 p=0.3795). Unidimensionality (number of significant t-tests of 3%) could be proven, the items were locally independent, and no DIF was observed. Knowledge was the smallest regarding statements on the role of antibiotics in treating infections, e.g., most of the respondents did not know that antibiotics would not work against viral infections (70%) and that they could also cause side effects (87%). The knowledge score ranged from 0 to 100 points with a transformed measurement (mean of knowledge 27.1 ± 4.8). Conclusions: The instrument showed good psychometric proprieties. The low scores of knowledge about antibiotics suggest that misinterpretations on the use of these medicaments were prevalent, which could influence the production of antibiotic resistance. The application of this questionnaire will allow the objective identification of 'Hight risk groups', which will be the target population for future educational campaigns, to reduce the knowledge gaps on the general population as an effort against antibiotic resistance.

Keywords : antibiotics, knowledge, misuse, overuse, questionnaire, Rasch model, validation
Conference Title : ICPHMT 2018 : International Conference on Public Health and Medical Technology
Conference Location : Paris, France
Conference Dates : March 15-16, 2018