COMPARING A DIRECT AND STAGED APPROACH TO ITEM SELECTION IN

A MULTI-DIMENSIONAL PATIENT-REPORTED OUTCOME MEASURE

Singh J1, Pokhrel S2, Coyle D2, Longworth L1

1PHMR Ltd, London, UK, 2Brunel University London, London, UK

OBJECTIVES: The development of a patient-reported outcome measure begins with item generation to identify relevant outcomes using target patients and, on building a comprehensive list, item selection takes place. Instrument developers and guidelines suggest an incremental approach to item selection. The dimensionality of the dataset is first determined by analysing item responses from large samples. This is followed by selecting item(s) for each dimension. However, some instrument developers have employed direct item selection (e.g. SF-12, OHIP-14). The aim of this study is to compare direct and staged approaches to item selection.

METHODS: Direct item selection employs regression analysis, while the staged approach includes factor analysis and item response theory (IRT) application. The Inpatient Survey 2014, which included 60 aspects of healthcare delivery in a hospital stay assessed by NHS inpatients, was analysed. The focus was on patients admitted to A&E who underwent an operation or procedure (N=12,748). The survey consisted of a rating of the overall patient experience, which was an ordered output variable, and the different elements of healthcare were included as explanatory variables in an ordered logit model. The staged approach used exploratory factor analysis (EFA) to establish dimensionality of the inpatient dataset and IRT was applied to individual dimensions for item selection.

RESULTS: In the ordered logit model, 29 care variables were statistically significant (p<0.05). The items focussed on relationships with the output variable and not the data structure. However, if that is not a concern, similar variables can be grouped together as dimensions followed by item selection, resulting in two additional stages. EFA identified an 11-factor model. An IRT model called generalised partial credit was used to select items based on their ability to differentiate across patient experience.

CONCLUSIONS: Adopting a two-staged approach ensures that items selected for an instrument are distinct and amenable to valuation.