

PODIUM SESSION I: DEVELOPMENTS IN QUESTIONNAIRES EQ-5D AND SF-6D

PSYCHOMETRIC COMPARISON OF EQ-5D AND EQ-5D-5L IN STUDENT POPULATION

EQ1

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OBJECTIVES: The new five-level version of the EQ-5D is now officially available. A pilot five-level version of EQ-5D questionnaire was successfully tested in patients with cancer. Other studies, using the official EQ-5D-5L, in moderately or severely disabled populations of patients with stroke, diabetes, injury, or psychiatric conditions are under way. Nothing is known about how EQ-5D-5L performs in relatively young and healthy populations. Aim of the study was to compare a Polish version of the three-level EQ-5D questionnaire (3L) with the five-level version (5L) in a student population. **METHODS:** In March 2010, all students from the Faculty of Pharmacy, Medical University of Warsaw were surveyed with a set of HRQoL questionnaires (5L, EQ-VAS, SF-36, and 3L). We examined percentage of reported problems, proportion and size of logical inconsistencies, ceiling effect, redistribution properties, convergent validity with SF-36 domains, and discriminatory power using Shannon's indices. **RESULTS:** Four hundred eighty-five students were approached and 443 responded to all questionnaires (5L, SF-36, and 3L). The domains with the highest and the lowest proportion of reported problems by 5L were Anxiety/Depression (57.1%) and Self-Care (0.2%), respectively. 3L and 5L responses were highly correlated in Pain/Discomfort (Pearson's Rho = 0.71), Usual Activities (0.64), and Anxiety/Depression domains (0.64). Mean rate of logical inconsistencies was 3.02%, with 93% of them being level 1 (according to Janssen et al., 2008). The ceiling effect was identified in 47% of 3L questionnaires and 34% of 5L questionnaires. Absolute informativity was higher for 5L, with similar relative informativity for both instruments. **CONCLUSIONS:** Results obtained in students support introduction of new 5-level version of EQ-5D in young and healthy populations. EQ-5D-5L appears to be more favorable in terms of ceiling effect and absolute informativity.

TESTING THE PERFORMANCE OF THE NEWLY DEVELOPED VERSION OF THE EQ-5D WITH 5 LEVELS OF SEVERITY: APPLICATION ON A COHORT OF PATIENTS WITH CHRONIC HEPATIC DISEASES

EQ2

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OBJECTIVES: To assess the performance of the EQ-5D-5L in a naturalistic context targeted to patients with hepatic diseases. Preliminary investigations suggest that the new version of EQ-5D, with five levels (5L) of severity per domain, is promising to assess individuals' QoL more appropriately than the standard version with three levels. However, further research is encouraged to investigate the EQ-5D-5L properties in different subpopulations and contexts. **METHODS:** This study was conducted within a project aimed to estimate costs and QoL related to hepatic diseases. The participants self-completed a questionnaire including the 5L descriptive system, the 3L standard descriptive system, and the VAS. The following properties were tested: *feasibility* (amount of missing answers); amount of *inconsistent* and *consistent responses* between 3L and 5L versions; *convergent validity* with the 3L version and VAS (Spearman's rank correlation coefficient); *discriminatory power* (informativity). **RESULTS:** Data from 426 patients were analyzed: 69% male, 19 to 84 (median = 57) years old. They were affected with: chronic hepatitis C (25.4%), chronic hepatitis B (22.5%), chronic hepatitis B and C (1.2%), cirrhosis (20.9%), liver transplantation (19.0%), hepatic carcinoma (4.5%), nonalcoholic steatohepatitis (1.9%), and other less frequent hepatic diseases. With the standard version (3L), patients reported some or severe problems with mobility (24.2%), self-care (10.4%), usual activities (29.0%), pain/discomfort (35.5%), and anxiety/depression (37.4%). Median VAS was 70 (15–100). Missing answers were more frequent with the 3L version (6.6% vs. 4.0% of patients). In total, 97.5% of responses were consistent. Convergent validity of 5L-VAS (from -0.35 to -0.57) was similar to the one of 3L-VAS (from -0.41 to -0.56). 3L-5L correlation coefficient ranged from 0.83 to 0.91. Informativity was similar between the two versions. **CONCLUSIONS:** The EQ-5D-5L version holds promise as a valid extension of the standard 3L version for the assessment of QoL of individuals with hepatic diseases.

ESTIMATING THE SF-6D VALUE SET FOR A POPULATION BASED SAMPLE OF BRAZILIANS

EQ3

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OBJECTIVES: The SF-6D is a preference-based measure of health developed to estimate utility values from the SF-36. The aim of this study was to estimate preference weights for SF-6D health states representing the preferences of a sample of Southern Brazilian general population. **METHODS:** A sample of 248 health states defined by the SF-6D has been valued by a sample of Southern Brazilian population using the

standard gamble (SG) method. SG responses were used to estimate regression models at the individual and mean levels to predict preference values for all SF-6D health states. The models were compared with those described in the UK study. **RESULTS:** Five hundred twenty-eight participants were interviewed, but 146 (28%) were excluded due to inconsistent SG responses. Data from 382 subjects were used to estimate the models, rendering 2224 health states valuations. All Brazilian models have a large number of significant coefficients and a mean absolute difference between observed and predicted values below 0.07. Inconsistent coefficients have been merged to produce the final recommended model. Compared to UK data, Brazilian health state values were lower, leading to a lower constant term in the models. The best model fitted to Brazilian data was a random effects model using only the main effects variables, different from the preferred British SF-6D mean model, highlighting the importance to adopt a country-specific algorithm in predicting SF-6D health states values. **CONCLUSIONS:** The results provide the first population-based value set for health states in Brazil, making it possible to generate QALYs for cost-utility studies using regional data. Utility scores based on Brazilian preferences values can be derived from existing SF-36 data sets.

DESCRIBING AND COMPARING HEALTH-RELATED QUALITY OF LIFE DERIVED FROM EQ-5D AND SF-6D IN A SWEDISH GENERAL POPULATION

EQ4

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OBJECTIVES: Measurement of health-related quality of life (HRQoL) is a crucial aspect of cost-effectiveness analysis. Two of the most widely used instruments for assessing HRQoL are EQ-5D and SF-6D. Previous studies have shown that the sensitivity of these instruments differ depending on the severity of the disease. However, few studies have systematically compared EQ-5D and SF-6D scores in a representative sample of the general population. The objective of this study is to describe and compare HRQoL derived from EQ-5D and SF-6D in a Swedish general population for age, gender, and seven disease groups (respiratory, tumor, endocrine, cardiovascular, orthopedic, mental, and rheumatic diseases). **METHODS:** The EQ-5D and SF-6D were included in a cross-sectional postal health survey in Östergötland County to a representative sample (n = 6628, age: 18–84). **RESULTS:** When comparing EQ-5D and SF-6D with regard to age, the mean HRQoL with EQ-5D across all ages was 0.81, ranging from 0.86 (18–29 years) to 0.71 (80–84 years). For SF-6D, mean HRQoL for the same population was 0.74, ranging from 0.75 (18–29 years) to 0.66 (80–84 years). With regard to gender, HRQoL was higher overall for men compared to women. Men had an EQ-5D score of 0.83 and a SF-6D score of 0.79; in contrast, women had an EQ-5D score of 0.79 and a SF-6D score of 0.73. Across disease groups, the mean EQ-5D scores ranged from 0.60 (rheumatic) to 0.75 (endocrine), mean SF-6D index values ranged from 0.64 (rheumatic) to 0.71 (endocrine). **CONCLUSIONS:** Although EQ-5D and SF-6D appear to measure similar constructs, our results show that HRQoL varies greatly among the general population depending on chosen instrument. However, when comparing our results across disease groups, differences between the instruments appear less substantial. Our findings could have serious implications for the transparency of cost-effectiveness analysis, if different studies use HRQoL measurements that are not equivalent.

PODIUM SESSION I: DEVELOPMENTS IN MODELING METHODOLOGY

STRUCTURAL UNCERTAINTY IN COST-EFFECTIVENESS MODELS OF TREATMENT FOR ALZHEIMER'S DISEASE

MO1

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OBJECTIVES: To discuss and explore important sources of structural uncertainty in a decision model for drug treatment in Alzheimer's disease. Progression in Alzheimer's disease can be modeled on various domains (e.g., cognition, function, behavior), each of which can be measured by various scales. Defining disease progression and incorporating a treatment effect can therefore be difficult, requiring many assumptions based on little or inconsistent evidence, resulting in a great deal of structural uncertainty. **METHODS:** We explored the impact of structural assumptions in a published three-state Markov model of treatment for Alzheimer's disease. This ultimately led to the development of a novel model. Elements of structural uncertainty included 1) defining the model states; 2) predicting occupancy of the states over time; and 3) allowance for disease progression within a state. **RESULTS:** Assessment of the step-by-step structural changes to the published model indicated a number of assumptions having a relatively large impact on the cost-effectiveness results, generally resulting in lower costs per quality-adjusted life-year (QALY) associated with the treatments. The cumulative impact of these assumptions was also considerable. However, there is little evidence to inform which assumptions are the most realistic. **CONCLUSIONS:** Investigation into sources of structural uncertainty has helped to identify which assumptions had the largest impact on the estimated costs per QALY. However, this does not help to reduce the uncertainty in the decision model, but does make the structural uncertainty explicit. Decision-makers are therefore forced to address this type of uncertainty as well as parameter uncertainty. Exploring structural uncertainty also helps to identify gaps in the current evidence base to help understand which assumptions may be the most credible.