**METHODS**

**METHODS—Quality Of Life/Patient-Reported Outcomes/Utility Studies**

**PMD15 RELIABILITY AND VALIDITY OF THE EQ-5D SELF-REPORT QUESTIONNAIRE IN TAIWAN POPULATION**

Chang TJ, Tarn YH

National Defense Medical Center, Taipei, Taiwan

OBJECTIVE: To assess the reliability and validity of a Taiwan traditional-Chinese version of the EQ-5D instrument in general population. METHODS: The survey was conducted as a postal survey in a sample of 12,923 persons in Taiwan in December 2002 using a standardized questionnaire containing the EQ-5D, the Short Form 12 Health Survey (SF-12) and a demographic profile. To assess the validity of the EQ-5D, or visual analogue scale (EQ-VAS), the SF-12 scores and other socio-demographic variables were examined using Pearson correlation coefficient. Test-retest reliability was analyzed in a subgroup of 302 respondents measured twice within one month, using kappa and agreement method. RESULTS: The general survey response rate amounted 1647 of the total 12,923 was 12.7% (Female: 50.4%; mean age: 42.4 years). The response rate for test-retest reliability was 61.3%. Subjects reporting moderate or extreme problems for EQ-5D dimensions generally had lower SF-12 scores than those without such problems. Subjects with more chronic health problems had lower EQ-5D value and EQ-5D VAS score. The responses on EQ-5D mobility, self-care, usual activity and pain/discomfort dimension had higher correlation with SF-12 PCS than MCS; however, the responses on EQ-5D anxiety dimension had higher correlation with the SF-12 MCS than PCS. Agreement for test-retest reliability of the EQ-5D items ranged from 76% to 99% (n = 180, interval: 30 days). CONCLUSIONS: The traditional Chinese EQ-5D self-classifier appears to be a valid and reliable measure of the health status in Taiwan general population. These data provide a basis for further studies of the Chinese EQ-5D instrument.

**PMD16 INVESTIGATING THE CEILING EFFECT IN THE EUROQOL IN THE U.S. GENERAL POPULATION**

Bharmal M, Thomas III J

Purdue University, West Lafayette, IN, USA

OBJECTIVES: The presence of a ceiling effect in the EuroQol (EQ-5D) was investigated. METHODS: Data used were from the 2000 Medical Expenditure Panel Survey (MEPS) that included the 5-item EQ-5D, the EuroQol visual analogue scale (EQ-VAS), and the SF-12. Individuals ≥18 years were included in the analysis. Respondents who reported no problems on all of the EQ-5D dimensions were categorized by SF-12 physical component (PCS) and SF-12 mental component scores (MCS). Those who scored at the median and mean values, respectively. Actual results from the survey were as follows: -0.48, 1.0, 0.58, 0.88, 0.72, and 0.67, respectively. The “trained” neural network gave the following values: -0.38, 1.0, 0.53, 0.87, 0.72, and 0.68, respectively; the multiple regression model gave 0.01, 1.0, 0.47, 0.85, 0.69, and 0.67, respectively. Correlations between actual and predicted utility were 0.82 for the neural network and 0.80 for the regression model. CONCLUSION: In early analysis, the modest improvement in correlation between actual and predicted utility scores obtained via the neural network was primarily due to this class of model being more reliable in mapping lower utility values (<0.5). The bimodal distribution of EQ5D data (UK scoring algorithm) complicates standard regression modelling, favouring the use of these more flexible, data driven neural networks. It is hypothesised that these latter methods are more appropriate.

**PMD17 USING AN ARTIFICIAL NEURAL NETWORK TO PREDICT UTILITY SCORES FROM SF-36 DATA**

McEwan P1, Kind P2, Dixon S3, Currie CJ4

1Cardiff University, Cardiff, Wales, United Kingdom; 2Outcomes Research Group, York, United Kingdom; 3Sheffield University, Sheffield, South Yorkshire, United Kingdom; 4University of Wales College of Medicine, Cardiff, Wales, United Kingdom

OBJECTIVES: Preliminary studies have generated utility scores from SF-36 data using linear regression models, providing variable results. Of particular importance is the ability of these models to overcome floor effects. The objective of this study was to determine if an improvement in the accuracy of this modeling could be achieved using neural networks. METHODS: Data on 12,268 subjects were abstracted from the Health Outcomes Data Repository (HODaR) in Cardiff, UK, and split into training, validation and test sets. A single layer, feed-forward neural network was constructed and trained using data from 6268 respondents. A validation set containing data from 3000 respondents was used to find the optimal network structure. For comparative purposes, a linear regression model was then fitted to the same data, and both the regression model and neural network were evaluated using the independent test set data containing 3000 respondents. RESULTS: The following results related to the minimum and maximum utility scores, lower and upper quartiles, and median and mean values, respectively. Actual results from the survey were as follows: -0.48, 1.0, 0.58, 0.88, 0.72, and 0.67, respectively. The “trained” neural network gave the following values: -0.38, 1.0, 0.53, 0.87, 0.72, and 0.68, respectively; the multiple regression model gave 0.01, 1.0, 0.47, 0.85, 0.69, and 0.67, respectively. Correlations between actual and predicted utility were 0.82 for the neural network and 0.80 for the regression model. CONCLUSION: In early analysis, the modest improvement in correlation between actual and predicted utility scores obtained via the neural network was primarily due to this class of model being more reliable in mapping lower utility values (<0.5). The bimodal distribution of EQ5D data (UK scoring algorithm) complicates standard regression modelling, favouring the use of these more flexible, data driven neural networks. It is hypothesised that these latter methods are more appropriate.

**PMD18 REAL-LIFE PATIENT REPORTED OUTCOMES: DATA MINING OF CONSUMER SPONTANEOUS REPORTS FOR TWO STATINS**

Reynolds MW, Ross S, Fahrbach K, Frame D, James K

Metaworks, Inc, Medford, MA, USA

OBJECTIVE: The objective of this study was to examine how consumer spontaneous Medwatch reports can be used to