loaded onto one factor (RMSEA = 0.048). Respondents with higher MMAS scores had a higher percentage of INRs within the therapeutic range during the past 2 weeks (p = 0.02), higher adherence to diet recommendations (p = 0.01), and less perceived difficulty in taking all medications (p <0.01). Respondents with higher scale scores were also more likely to take warfarin at the same time every day (p < 0.001) and follow the prescribed dosage (p = 0.04). The hypotheses regarding the association between the scale score and the time within the therapeutic INR range, however, were not met. **CONCLUSIONS:** The 8-item MMAS had a good validity and moderate reliability in patients taking warfarin. Future research requires investigation of the scale's reliability and psychometric properties in other patient populations and clinical settings.

PRM22

TESTING THE EQUIVALENCE OF THE LABEL WORDING FOR EQ-5D-5L RESPONSE OPTIONS ACROSS DIFFERENT LANGUAGES IN SINGAPORE

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OBJECTIVES: The EQ-5D-5L questionnaire describes a person's health using five 5-point Likert scales (i.e. no/slight/moderate/severe/extreme problems), with one scale for each of its five dimensions including mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. The purpose of this study was to assess the equivalence of the response options of the EQ-5D-5L scales across the three major languages (English, Chinese and Malay) in Singapore. **METHODS:** Visitors to 9 government-run polyclinics were interviewed face-to-face according to participants' language preference. Participants' perception of the severity of health problems represented by the response labels of the EQ-5D-5L was measured using a 0 (no problems) to 100 (the worst problems) visual analog scale. The participants were also asked to use the response labels to describe 25 predefined scenarios of health states. Severity ratings and choice of labels were analyzed using multiple linear and logistic regression models, respectively. **RESULTS:** A total of 743 participants (54% ethnic Chinese, 35.3% Malays and 6.6% Indians, age ranged 19 - 83 years) rated the severity of the EQ-5D-5L response labels in English (n=257), Chinese (n=256) or Malay language versions (n=230). Using English labels as reference, the Chinese response labels perceived were similar in severity of health problems. Higher severity scores of 'slight problems' and lower scores of 'extreme problems' however were assigned to Malay response labels. When asked to describe hypothetical health states, users of the Chinese labels tended to use mild wording while users of the Malay labels tended to use more severe wording. **CONCLUSIONS:** The interpretations of the labels for some EQ-5D-5L response options differ between Malay and other languages in Singapore. Future research is needed to improve the equivalence of the EQ-5D-5L response options so that the questionnaire can be used to compare the health status of culturally different populations in Singapore.

PRM23

DISCRIMINATIVE PROPERTIES OF SF36V2 HEALTH SURVEY IN GENERAL POPULATION OF PENANG STATE (MALAYSIA) USING NORM BASED SCORING ALGORITHMS

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OBJECTIVES: To obtain population norms (using norm based algorithms) of SF36v2 health survey and association of SF36v2 summary component scores with demographic and socioeconomic variables in Penang general population. This study also aimed to find out effect size difference between United States and Penang specific summary scores. **METHODS:** A cross-sectional study was carried out among 398 residents randomly selected from 10 grids in Penang Island during January 2011 using the official translation of SF-36v2 Health Survey questionnaire in Malay, Mandarin, Tamil and English. 0-100 scoring of questionnaire was done by scoring software version 4 for SF-36v2 and then these scores were transformed into norm based scores by using means and standard deviations derived from Penang general population. PCS and MCS scores were derived from Penang specific z-scores of eight health domains and factor coefficients derived from U.S standard population. Penang specific scores considered measurement equivalence, if the effect size difference was <0.5. **RESULTS:** Mean (±SD) norm based scores for PF, RF, BP, GH, VT, SF, RE and MH were 49.6±10.6, 50.0±9.9, 50.0±9.9, 50.0±10.0, 50.0±10.0, 50.0±9.9, 49.9±10.1, 50.0±9.9, respectively. Penang specific PCS and MCS were 49.9±9.2, 50.0±9.2, respectively. Physical health was determined by age group, marital status and level of education whereby, Malay ethnicity, un-employment and lower level of education & monthly income was associated with poor mental health. The effect size difference between U.S standard and Penang specific PCS and MCS scores were <0.5. **CONCLUSIONS:** Since norm based means scores for SF-36v2 health survey were not available for Malaysian population, therefore these findings can serve as a baseline for comparisons in future surveys looking at HRQoL in general and diseased population. The high level of measurement equivalence of the PCS and MCS between U.S and Penang populations suggests that data pooling between two populations could be possible.

PRM24

ECONOMIC VALUATION OF INFORMAL CARE – TASK BASED APPROACH

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OBJECTIVES: The cost of informal care is often ignored in economic evaluation. For certain conditions, such as palliation or patients with long-term chronic conditions, informal care costs may be substantial. Previous studies have suggested a limited framework for valuing informal care. The aim of this study was to investigate whether different tasks provided by informal carers are quantified and valued differently. **METHODS:** Sixty adults in New South Wales (Australia) with traumatic brain injury or spinal cord injury that required long-term 24-hour care were recruited into the study. The amount of care provided to each patient (divided into tasks, such as: personal care, food preparation, organisational and social support) was recorded using diary and recall methods. Informal care was valued using contingent valuation, with carers being asked how much they would be willing to accept from the Government to provide an extra hour of care. Respondents were asked to value each task separately. **RESULTS:** The estimates of informal care provided differed between recall and diary methods (61 hrs/week versus 29 hrs/week; p<0.01). There were good correlation for some tasks (outdoor journeys) and large disparities for other tasks (personal care, food preparation and cleaning). Social support was considerably under reported using the diary method (3 hrs/week vs. 15 hrs/week; p<0.01). In terms of task valuation, personal care ($46/hr) was valued more highly than household tasks ($29/hr) and social support ($29/hr). **CONCLUSIONS:** The method used to estimate the amount of informal care provided is important. Our findings suggest that informal carers have different valuations for different tasks. Consequently applying a single monetary value for informal care in economic evaluations may not be appropriate, since it does not accurately reflect the heterogeneity of informal care.

PRM25

FIRST DRIVE-THROUGH PHARMACY SERVICE IN TAIWAN

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OBJECTIVES: Drive-Through is a very convenient service in many fast food restaurants. Our hospital is newly opened in the middle 2008. Due to growing numbers of drug refill visits and limited parking space, pharmacy aims to establish a convenient service for patient to refill their prescriptions. **METHODS:** We visited many hospitals of drug refill process. Several meetings were held to design the optimal system in our institution. We divided the process into two steps; first, make an appointment, second, pick up medicine. After one month constructing facilities and training related staffs and pharmacists, the first Drive-Through Pharmacy Service in Taiwan was grand opened in Taipei Medical University Shuang-Ho Hospital on July 1st 2011. We assess the efficacy of this device by utility rate and patient satisfaction. **RESULTS:** After starting the Drive-Through service, the utility rate raised from 17.7% to 47.4% dramatically. More than 80% of patients were satisfied with this innovate service. Patients needn't to park vehicles, and wait in line for payment and receiving medication. Significant time and cost-savings benefits for patients by making an appointment of prescription refill via the internet or telephone and by picking up medications in three minutes on that day. Comparing with traditional method that takes at least forty minutes to complete the whole process, the new service not only save patient's time but also the parking fee. From pharmacist prospective, pharmacists dispense those ordered medication during midnight. In the day time, usually busier than midnight, we can then create more time to provide more advanced clinical service. Consequently, both patient and pharmacist are benefit from our Drive-Through Pharmacy service. **CONCLUSIONS:** Our innovate service, Drive-Through Pharmacy, provide patient a much easier, convenient, and cheaper way to pick up their medication. At the same time, pharmacist has more time to provide more valuable pharmaceutical service.

PRM26

COMPARISON OF THREE MEDICATION ADHERENCE MEASURES IN PATIENTS TAKING WARFARIN

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OBJECTIVES: Assessments of adherence to warfarin therapy help improve patients' warfarin-taking behavior and reduce mortality. This study aimed to compare three medication adherence measures, i.e., the 8-item Morisky Medication Adherence Scale (MMAS), the 100-point Visual Analogue Scale (VAS), and pharmacy refill rates, in patients taking warfarin in Singapore. **METHODS:** A cross-sectional survey was conducted in a convenient sample of 174 patients taking warfarin at an anticoagulation clinic in Singapore in 2011. Respondents completed the MMAS and the VAS in Chinese or English depending on their preference. Pharmacy refill rates for warfarin and International Normalized Ratio (INR) values were retrieved from hospital pharmacy databases. The associations among the three measures were examined by the Spearman correlation. Their associations with INR values were examined by the Spearman correlation and Mann-Whitney U test. **RESULTS:** The mean (SD) of the MMAS, the VAS and pharmacy refill rates were 7.0 (1.1), 91.9 (10.8) and 0.9 (0.1), respectively. Using an 80% refill rate as the cut-off point, 85.1% of the respondents were adherent to their warfarin therapy. The MMAS scores were associated with VAS scores and pharmacy refill rates (r_s = 0.23 and 0.18; p <0.01 and 0.02, respectively). No association was found between the VAS scores and pharmacy refill rates. The MMAS and pharmacy refill rates were associated with the percentage of INRs within range in the past 2 weeks (p = 0.02 and 0.03, respectively). Moreover, pharmacy refill rates were associated with the percentage of time within the therapeutic INR range in the past 3 months and 2 weeks (r_s = 0.21 and 0.16; p = 0.01 and 0.05, respectively). **CONCLUSIONS:** Most of the patients on warfarin were adherent. Pharmacy refill rate may be a better measure for assessing adherence to warfarin and shows a stronger correlation with INR control than MMAS and VAS.