

## PRM24

## EXPLORING THE INTERRELATIONSHIP BETWEEN UNINTENTIONAL AND INTENTIONAL NONADHERENCE AMONG 24,071 ADULTS WITH CHRONIC DISEASE

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**OBJECTIVES:** The objective of this study was to explore the interrelationship between intentional and unintentional non-adherence vis-à-vis patients' medication beliefs. **METHODS:** We conducted a cross-sectional survey of adults with asthma, hypertension, diabetes, hyperlipidemia, osteoporosis, or depression from the Harris Chronic Disease Panel. A total of 24,071 adults self-identified themselves as currently persistent to prescription medications for their index disease. They answered three questions on unintentional non-adherence, 11 questions on intentional non-adherence, and 20 questions assessing their beliefs about the index medication, which generated multi-item scales assessing perceived medication need ( $k=10$ ), perceived concerns ( $k=6$ ), and perceived affordability ( $k=4$ ). The regression approach proposed by Baron and Kenny was used to test the mediational effect of unintentional non-adherence on the relationship between medication beliefs and intentional non-adherence. Bootstrapping was also employed to confirm the statistical significance of these results. **RESULTS:** It was hypothesized that the effect of medication beliefs (perceived need, concerns, and affordability) on intentional non-adherence is mediated through unintentional non-adherence. The four conditions outlined by Barron and Kenny for a variable to be considered as a mediating variable were satisfied. The three medication beliefs had a significant direct effect on unintentional non-adherence. The direct effect of unintentional non-adherence on intentional non-adherence was significant as was the total effect of medication beliefs on intentional non-adherence. The impact of medication beliefs on intentional non-adherence was reduced after controlling for unintentional non-adherence. The statistical significance of the mediational relationship was confirmed using the bootstrapping procedure with 5,000 samples. **CONCLUSIONS:** Unintentional non-adherence may appear to be a rather benign behavior; however, its importance may lie in its potential prognostic significance for future intentional non-adherence. Hence, health care providers should screen for unintentional non-adherence in patients while they are still on therapy and proactively address suboptimal medication beliefs that might ultimately lead the patient to discontinue therapy.

## PRM25

## PSYCHOMETRIC COMPARABILITY OF SINGLE ITEM AND GRID FORM ADMINISTRATION OF THE SF-36V2™ HEALTH SURVEY

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**OBJECTIVES:** Over the past two decades use of the traditional paper-and-pencil survey has waned as options for electronic data collection have been shown to be rigorous and more cost-effective. Although research supports equivalence of paper and electronic administration modes, evidence examining the impact of changes in item form required to accommodate small format electronic devices is lacking. This study examined the impact of a single item (SI) presentation versus grid display (GD) for score equivalence, measurement properties and adherence to the conceptual framework of the SF-36v2. **METHODS:** The SF-36v2 standard recall form was electronically presented as part of a US national norming study. Survey results from SI ( $N=2037$ ) and GD ( $N=2003$ ) administrations were then scored. ANCOVA models compared SI and GD scale scores. A Multi-trait Analysis Program (MAPR) and principal components analysis (PCA) were used to examine the measurement properties and test the conceptual framework of SI and GD data. **RESULTS:** Mean score comparisons revealed small differences between SI and GD on seven scales (all  $p < 0.01$ ). Mean differences (.43 to 1.42), however, failed to reach the minimally important difference of 3 points indicating relative equivalence. MAP-R analyses showed that, for both item formats, SF-36v2 items had excellent convergent validity with their hypothesized scale ( $r > 0.4$ ) and each item correlated higher with its hypothesized scale than with others (divergent validity). PCA results showed that the hypothesized two-dimensional structure of physical and mental health was evident in both formats as the pattern of correlation between scales and principal components was consistent with a priori hypotheses and the two components explained the majority of variance in the eight scales ( $>75\%$ ). **CONCLUSIONS:** Single item presentation, which separates items from the contextual cues of their traditional grid format, results in scores and measurement properties consistent with GD, and maintains the underlying conceptual framework of the SF-36v2.

## PRM26

## IMPACT OF A WEB PORTAL TOOL ON DRIVING PATIENT ADHERENCE

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**OBJECTIVES:** To determine the value of a web portal by quantifying the differences in medication adherence between web-users and non-web-users. **METHODS:** A case-control study design was employed for this study. Prescription records from a de-identified pharmacy claims database maintained by a large pharmacy benefit manager were obtained between April 1<sup>st</sup> 2009 to March 31<sup>st</sup> 2010. The test group consisted of patients who filled their prescriptions via a web-based portal. Patients who were enrolled in similar health plans but never used the web portal to fill their prescriptions comprised the control group. All eligible patients included in this analysis were continuously enrolled during the study period. Differences in medication possession ratio (MPR), defined as the sum of days that patient possessed any maintenance medication divided by the total number of days in the follow-up

period, was calculated during the observation period and compared using a paired t-test. Additionally, MPRs for the Top 10 therapeutic medication classes were computed and compared across test and control group. **RESULTS:** A total of 2,333,635 eligible patients were included in the study. Among them 53,018 patients met the criteria for test group and 2,280,617 patients were included in the control group. Overall mean MPR for the test group was found to be significantly higher (0.48 Vs 0.37) as compared to the control group ( $p < 0.05$ ). Additionally, across all the Top 10 medication classes, the test group patients' mean MPR was significantly higher than that of control group patients. **CONCLUSIONS:** Patients, who filled their prescriptions via the web portal, have higher adherence rates as compared to those who do not choose this channel to fill their scripts. Further studies aimed at evaluating key drivers for the differential adherence rate are required to gain additional insights about the importance of web-portal as a tool for refilling prescriptions.

## PRM27

## SF-12 AND EQ-5D UTILITY SCORING STRATEGY: LESSONS FROM APPLYING 40 SCORINGS TO 3 LARGE DATA SETS

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**OBJECTIVES:** To comprehensively search for SF-12 utility scorings and for EQ-5d scorings that can be applied to SF-12 data converted to EQ-5d responses using Gray's (2006) algorithm. To apply quality/dominance criteria to the identified scorings, apply the scorings of good quality to 3 large US data sets that used the SF12, and examine the implications for scoring strategy. **METHODS:** A Medline search and hand search of selected journals and of reference lists in relevant articles yielded 27 EQ-5d scorings and 18 studies that provided 29 SF12/SF36 scorings. Quality/dominance criteria excluded 16 scorings from 8 studies. Data sets scored included a survey of 21,564 disabled veterans, a national probability sample of 20,048 veterans, and a longitudinal survey with 4,600 responses from 1,547 hospital-admitted burn victims. We averaged subsets of scores, weighting each component score by the number of people polled in the utility weighting exercise. We also scored 5 extreme value cases. **RESULTS:** The composite score performed quite well. Its values and distribution were similar to those in Sengupta's Health Utility Index 3 scoring and Lawrence's scoring derived from SF-12 domain scores. Much has been made of the Shaw article that purportedly shows that EQ-5d scoring needs to be country specific. That article used a different scoring equation than other EQ-5d scorings. Its scores differ as much from 4 other US scorings as from overseas scorings - and the other US scores are concordant with the overseas scores. The Gray algorithm performed extremely well, especially when supplemented by questions on use of mobility aids. SF-12 scorings are less dispersed and more prone to floor and ceiling effects than EQ-5d scorings. Time-tradeoff EQ-5d scorings have higher variance than visual-analog scorings. **CONCLUSIONS:** Some scorings are better than others, with Sengupta or Lawrence recommended. Country of origin rarely matters, with some possible exceptions (Hispanic, African American).

## PRM28

## CREATION OF A NEW PSORIASIS QUALITY OF LIFE MEASURE FROM FIVE PREEXISTENT INSTRUMENTS USING RASCH ANALYSIS: THE CALIPSO QUESTIONNAIRE

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**OBJECTIVES:** To create a new instrument to evaluate quality of life (QoL) in patients with psoriasis, from five preexistent instruments, using Rasch analysis. **METHODS:** A Rasch analysis was performed on five QoL instruments, in a group of 936 patients with psoriasis, recruited in a dermatological hospital. Two instruments were dermatology-specific [Skindex-29 and Dermatology Life Quality Index (DLQI)], and three were psoriasis-specific [Psoriasis Disability Index (PDI), Psoriasis Life Stress Inventory (PLSI), and Impact of Psoriasis questionnaire (IPSO)]. The total number of items was 85. The number of categories was reduced to three in each instrument on the basis of threshold probability curves. Having identified threshold and item performance for each scale separately, items from all five scales were analyzed together. Items were eliminated on the basis of poor fit to the model, dependencies amongst items, item location and qualitative meaning of the items, with the overall goals of obtaining a uniform and wide spread of the items as possible, and a balance among the different subscales. **RESULTS:** We obtained a final questionnaire of 30 items: 4 symptom, 9 emotion, 10 functioning, and 7 social items. Fifteen out of 29 items came from the Skindex-29, 8 from the PLSI, 3 from the IPSO, 2 from the DLQI, and 2 from the PDI. The fit of these items to the Rasch model was satisfactory. The final Person Separation Index (PSI) was 0.916. **CONCLUSIONS:** The advantages of this new instrument are that data for it fit the Rasch model, and that it summarizes information from five questionnaires (i.e., 85 items) with just 30 items. Moreover, the 30-item questionnaire is working better than the five instruments together, as the properties we analyzed show. The new instrument will be validated on a new sample of 300 patients with psoriasis.

## PRM29

## METHODODOLOGICAL DIFFERENCES IN EQ-5D SCORING SYSTEMS: A SYSTEMATIC REVIEW AND ANALYSIS

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**OBJECTIVES:** The EQ-5D is one of the most widely used instruments to estimate utility values. The scoring system of the EQ-5D was developed from valuation studies, which estimate a scoring function for all EQ-5D health states based on the general population's preference for a subset of health states. Due to the wide