VALIDATING LIKERT-TYPE MEASURES USING NONPARAMETRIC AND PARAMETRIC ITEM RESPONSE THEORY
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Objective: Item response theory (IRT) is one of measurement models used for evaluating the quality of rating scale measures. In the current study, Rasch and regression on item response theory (KIRT) is a nonparametric IRT alternative to common approaches derived from classical test theory and parametric IRT (e.g., Rasch) models. The objectives of this study were to identify and compare the agreement and discrepancy in item quality assessment using nonparametric and parametric IRT.

Methods: KIRT and Rasch approaches were utilized to examine psychometric properties towards Likert-type measures assessing pharmacists’ performance of patient counseling in general (PC-G) and counseling on herbs and dietary supplements (PC-HDS), in a large-scale validation study. Agreement and discrepancy of item performance assessment were examined based on the underlying attributes of models, corresponding analysis techniques and assessment criteria (e.g., examining violations of unidimensional psychometric assumptions for KIRT, examining the undesired discrepancy between observed and model expected values for Rasch model). Results: Seven out of 10 PC-G items (70%) and six out of seven PC-HDS items (86%) were good quality items based on both approaches. Two good quality items in the KIRT model did not fit the Rasch model well (i.e., outliers ZSTD, d,n,b 2, whereas the three good fitting items in the Rasch model were recognized as poor quality items in the KIRT model (violated monotonicity or local independence).

Conclusions: There was fair amount of agreement between the two approaches with retrospect to validate performance measures. The discrepancy of two approaches resulted from the differences between corresponding measurement models and the prescribed criteria of quality assessment. In general, the KIRT tended to identify more poor quality items that didn’t intuitively match unidimensional psychometric properties, but the Rasch approach tended to identify poor quality items which might belong to a second construct.

FACTORS AFFECTING CHOICE OF ANTIBIOTIC USE IN ACUTE BACTERIAL RESPIRATORY TRACT INFECTIONS: A SURVEY IN THAI PHYSICIANS

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Objective: To examine physicians’ attitude towards factors and their relative importance affecting antibiotic prescribing for ambulatory adult patients with acute bacterial RTIs; acute rhinosinusitis (ARS), community acquired pneumonia (CAP), pharyngitis (P), exacerbation of chronic bronchitis (B). Methods: The Internal medicine, ENT, Chest medicine, and Infectious physicians were selected to be our respondents. Based on a list of registered medical practitioners we only selected those who worked in Bangkok (251 physicians). During August-September 08, we went to see them in their practical settings and asked them to participate in the study. Finally, there were only 121 physicians who participated in our survey. Results: Total respondents were internal medicine (28.9%), ENT (27.3%), Chest medicine (26.4%), and infectious (17.5%). Most of them were male (74.4%) and worked in private hospitals (53.7%). Among the 4 diseases, they reported that the highest volume of patients were seen in the P followed by B, and CAP. Drug efficacy was reported to be the most important factor affecting the physicians’ decision on antibiotic choice across all specialties, followed by drug safety, drug side effect, total treatment cost, and ease of use, respectively (mean rank = 1.28, 2.64, 3.60, 5.31, 5.44). Drug resistance and experience of use were viewed similarly as the subsequent imperative aspects for antibiotic selection (mean rank = 5.7 and 5.8). Conclusions: In acute bacterial RTIs, the drug efficacy and disease severity were found to be the most important factors affecting the physicians’ choice of antibiotic, whereas drug resistance was reported less significant. To ensure effective use of antibiotic in acute bacterial RTIs infection, the drug knowledge and evidence in varied severity stages are essential, the local recent data on drug resistance should be more well noted for practicing physician in order to increase their awareness on this issue.

DRUG UTILIZATION PATTERNS AND COSTS OF ANTIBIOTIC THERAPY AMONG PATIENTS WITH OR WITHOUT CANCER IN A 2000-BED MEDICAL CENTER IN TAIWAN

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Objectives: Inappropriate antibiotic consumptions in hospitals persists as one of patients’ safety concerns in Taiwan despite many efforts and health policies to address this problem. We performed a secondary data analysis to describe and compare the utilization and cost of systemic antibiotic therapy in the management of patients among with (CAPT) or without cancer (NCAPT) for quality improvement of medical care. Methods: The claim data of antibiotic prescription and corresponding cost from the 2000-bed medical center affiliated to a medical university in Taiwan were analyzed. Examining the trends and differences of antibiotic cost among CAPT and NCAPT during hospitalizations in years of 2005 and 2006, the 95% confidence intervals of antibiotic cost and relative weight of diagnosis-related group for NCAPT were compared monthly. In the first half of year 2007, the months with average cost of antibiotics greater than the breakpoint, which was derived from the prior two-year analysis, were selected to further identify the principle diagnoses and antibiotics needed to have special attention. Results: There were statistically significant higher average antibiotic costs of CAPT, in July, August, and October, 2005 and in January, April, May and July, 2006. Given the NT$ 15,500 (USD = $435) was recognized as breakpoint of average antibiotic cost for cancer patients in 2007, visits hospitalized in May due to receiving radiotherapy, chemotherapy, management for acute myeloid leukemia, cervical cancer and so on should be paid more attention on infection management. Ten parental antibiotics (e.g., Tazocin, Targocid), accounted for 89.64% of total antibiotic costs in May, were selected for rigorous controlled dispensions in the second half of year 2007 and later. Conclusions: Sustained control on item quality assessment of those visits receiving radio- and chemo-therapy and using specific spectrum antibiotics during hospitalizations are necessary to improve antibiotic use and infection control in hospitals.

SMOKING CESSATION AND ITS PREDICTORS: RESULTS FROM COMMUNITY BASED PHARMACY TOBACCO CESSATION PROGRAM IN NEW MEXICO

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Objective: 1) To assess tobacco quit rates among a convenient sample of current smokers who participated in the community pharmacist-based smoking cessation intervention and to identify the predictors of quitting over a 6-month period among the study population.

Methods: Each year approximately 200 patients were enrolled across 15 pharmacies throughout New Mexico. Pharmacists, who had received the Rx for Change training, provided the cessation program with administrative and clerical support from the Pharmacy Technicians. Patients were provided counseling services at no charge and, if necessary, received medications without charge. Patients did not receive any monetary compensation for participation. Data on patient’s demographic information, smoking status, and readiness for quitting was collected at the beginning of the program and on smoking status was collected at 1, 3, and 6 months. Statistical Analysis: Missing data on follow-up was imputed using the last observation carry forward method. Smoking cessation rates were calculated at 1, 3, and 6 months. Multiple Logistic regression analysis was performed to assess predictors of quitting. Standard errors were adjusted for repeated observation. Results: Final sample size was 346 participants. The average quit rate at the end of 6 months was 25%. Significant predictors of quitting were high confidence levels in quitting at baseline (OR = 2.628, p = 0.000), individuals who had their first cigarettes at least 30 minutes after waking up, first cessation attempt, and non-white patients were more likely to quit. Conclusions: Smoking cessation program delivered through trained community pharmacists is an effective approach in reducing smoking. Future research should be conducted to compare the effectiveness of pharmacists with other providers of tobacco cessation services.