Pharmaceutical Health Services Research Symposium

Comparative Effectiveness Research: Step Forward to Improve Healthcare Delivery

March 29, 2013
University of Houston
Houston, Texas

UNIVERSITY of HOUSTON

COLLEGE OF PHARMACY

Program

Organized by GPA and ISPOR-UH Chapter

8:30 - 9:30 a.m. **Complimentary Breakfast and Poster Review/Judging Session**

9:30 - 10:00 a.m. **Welcome**

Mustafa F. Lokhandwala, Ph.D., Executive Vice Dean of Research, University of Houston College of Pharmacy

Opening Session

Rathindra Bose, Ph.D., Vice Chancellor of Research and Technology Transfer, University of Houston System, and Vice President of Research, University of Houston

10:00 a.m. -12:00 p.m. **Lecture Series**

"Aligning Clinical Practice with Best Evidence of Comparative Effectiveness" — **Carol M. Ashton**, M.D., MPH, John F. Jr. and Carolyn Bookout Professor of Surgical Quality & Outcomes Science, Department of Surgery, and Co-Director, Center for Outcomes Research, The Methodist Hospital Research Institute, The Methodist Hospital

"Comparative Effectiveness Research on Cancer in Texas: Texas Researchers Look for Best Cancer-Related Care Options" — **Catherine D. Cooksley**, Dr.P.H., Senior Biostatistician Faculty, Sealy Center on Aging, and Adjunct Assistant Professor, Internal Medicine & Preventive Medicine and Community Health, University of Texas Medical Branch in Galveston

"A Patient-Centered Approach to Comparative Effectiveness Research" — **Aanand D. Naik**, M.D., Clinical Investigator and Training Core Director, Houston Health Services and Research Center of Excellence, Michael E. DeBakey Veterans Affairs Medical Center and Baylor College of Medicine

12:00 - 12:30 p.m. **Poster Awards and Thank You Note**

12:30 - 1:30 p.m. **Complimentary Lunch**

1:30 - 2:30 p.m. **Grant Workshop on Observational Comparative Effectiveness Research**

Rajender R. Aparasu, Ph.D., and **Hua Chen**, M.D., Ph.D., University of Houston College of Pharmacy

2:30 p.m. **Closing Comments**

Opening Session

Rathindra N. Bose, Ph.D.

Dr. Rathindra Bose serves as the Vice Chancellor for Research and Technology Transfer for the University of Houston System and Vice President for Research and Technology Transfer at UH. He holds a tenured professorial appointment in the Department of Chemistry, with a joint appointment in the Department of Pharmacological & Pharmaceutical Sciences. In his administrative capacity, he has oversight responsibilities for the Division of Research (DOR), including the Office of Contracts and Grants, the Office of Research Policies, Compliance and Committees, and the Office of Intellectual Property Management. Bose's achievements include the discovery of a new class of anticancer agents – Phosphaplatins – that exhibits superior efficacy with reduced toxicity in preclinical experiments compared to existing platinum anticancer drugs. His research has been supported by the National Science Foundation, National Institutes of Health, Cancer Prevention and Research Institute of Texas, Phosplatin Therapeutics, and the U.S. Department of Education. Dr. Bose has served as a reviewer for more than 15 international journals, an ad-hoc member of the Metallobiochemistry Study Section at NIH, a panel member for the NSF, and a member of the editorial boards of three journals. He serves as chair of the Science Advisory Board of Phosplatin Therapeutics, and as a board member of BioHouston and Southern Universities Research Association.

Keynote Lecturers

Carol M. Ashton, M.D., MPH

Dr. Carol Ashton is a physician and health services researcher who has led a variety of clinical and research programs and has published widely. She is the John F. , Jr. and Carolyn Bookout Professor of Surgical Quality and Outcomes Sciences in the Department of Surgery at The Methodist Hospital in Houston. Her current research is focused on improving the scientific evidence base for surgical procedures. Along with coauthor Nelda P. Wray, she has recently written a book titled "Comparative Effectiveness Research: Evidence, Policy, and Interests," to be published by Oxford University Press in May 2013. Before joining Methodist, she held faculty positions at the University of Alabama School of Medicine and Baylor College of Medicine, and served as Director of the National VA Center for Quality of Care and Utilization Studies, Deputy Associate Chief of Staff for Research and Development at the Houston VA Medical Center, and Co-Editor in Chief of *Medical Care*. Dr. Ashton has held positions with the U.S. Agency for Healthcare Research and Quality, the VA Health Service R & D Research Enhancement Award Programs and the NIH's National Center for Complementary and Alternative Medicine. In 2004, she received the VA Under Secretary's Award for Outstanding Lifetime Achievement in Health Services Research.

Keynote Lecturers

Catherine D. Cooksley, Dr.P.H.

Dr. Catherine Cooksley currently directs the Data Management Core of the Comparative Effectiveness Research on Cancer in Texas (CERCIT) project, funded by CPRIT. Her experience and training has been focused in public health epidemiology and biostatistics, specifically disease surveillance and control at the patient and the population levels. Over the past few decades, Dr. Cooksley has worked with public health professionals in Texas at the state, city and county levels, with more recent experience in the UT academic/healthcare setting. Her expertise includes cancer registry procedures, claims data, population based survey data and database linkage strategies. The CERCIT project uses Texas databases of administrative claims and cancer characteristics for public health focused comparative effectiveness research. Application of tested and proven algorithms to these data allows research of healthcare delivery and supportive care needs related to cancer care in targeted groups of Texans. She is the editor of the *Texas Public Health Journal*, a peer-reviewed publication of the Texas Public Health Association that specializes in publishing manuscripts of public health importance and impact.

Aanand D. Naik, M.D.

Dr. Aanand Naik is a medical geriatrician and health services researcher at the Houston Health Services Research and Development Center of Excellence at the Michael E. DeBakey VA Medical Center and Baylor College of Medicine. His research interests include improving the health outcomes of older adults with multiple morbid conditions; evaluating capacity for safe and independent living in vulnerable older adults; and behavioral factors that influence decision-making within the patient-clinician relationship. His research includes over 70 peer-reviewed papers developing and testing models of patient-centeredness to improve the outcomes of multi-morbid older adults. Dr. Naik also leads an Education and Training Core in Health Services Research that mentors M.D. and Ph.D. post-doctoral fellows from a variety of medical specialties, nursing, public health, and basic social, behavioral and organizational sciences. His awards and activities include consecutive Fulbright & Jaworski L.L.P. Faculty Excellence Awards at BCM; Dan L. Duncan Cancer Center at BCM, Clinical Research Scientist – Prevention and Population Sciences Program; Doris Duke Charitable Foundation Clinical Scientist Development Award; Greenwall Foundation Bioethics Grant Award; Houston CERT member and core demonstration project director; NIA K23 Mentored Patient-Oriented Research Career Development Award; Hartford Geriatrics Health Outcomes Research Scholar; American Geriatrics Society New Investigator Award; and NIA Young Investigators Summer Research Institute.

Abstracts

1)

EFFECT OF THEORY OF PLANNED BEHAVIOR ON INTENTION TO QUIT SMOKING IN WOMEN

Liqa Athamneh, BS; Ruta Sawant, BPharm; Aylin Yucel MS, MBA; Sujit Sansgiry PhD
Department of Clinical Sciences and Administration, College of Pharmacy, University of Houston, Houston, Texas, USA.

OBJECTIVES: Smoking is one of the major causes for death and disease in women. This study examined the factors that affect women smokers' intention to quit smoking using the theory of planned behavior.

METHODS: An observational, cross-sectional study design was used, with convenient sampling data collection technique. The analysis was prepared using data from 44 women smokers from age 18 and older who completed a survey to asses intention, attitude, normative beliefs and control beliefs regarding quitting smoking and using smoking cessation therapies. The Theory of planned behavior's measures (attitude, normative beliefs and perceived behavior control) and intention to quit smoking were tested using a 7-point scale. A simple linear regression was run to see the effect of the internal constructs individually on the intention to quit smoking and Multivariate regression analysis was performed to control for demographics. All statistical analysis was conducted using the SAS version 9.3 at a significance level of 0.05.

RESULTS: The Correlation was tested between the internal constructs and the intention to quit. The Pearson's Correlation Coefficients were: Behavioral Beliefs and Outcome evaluation (r=0.55959, P=.0001), Normative Beliefs and Motivation to comply (r= 0.51070, P= 0.0005), Control Beliefs and Power of Control Beliefs (r= 0.51715, P= 0.0005). The univariate linear regression analysis indicated that women smoker's intention to quit smoking: was higher with greater attitude toward quitting (β=0.13517, p=0.0001), greater normative beliefs toward quitting (β=0.11588, p=0.0005), and greater perceived behavioral control effort toward quitting (β=0.08359, p=0.0005). Respondents age, education level, race, income and smoker type had no effect on their intention to quit.

CONCLUSIONS: Theory of Planned Behavior is a good fit to measure the factors that affect the intention to quit smoking and there are a number of key attitudes, subjective norms and control beliefs that may be useful in designing future smoking cessation programs.

2)

PREDICTING CONSUMER INTENTION TO USE GENERIC DRUG DISCOUNT PROGRAMS: STRUCTURAL EQUATION MODELING APPROACH

Harshali K Patel, MS; Sujit S. Sansgiry PhD
Department of Clinical Sciences and Administration, College of Pharmacy, University of Houston, Houston, Texas, USA.

OBJECTIVE: To validate the applicability of constructs of theory of planned behavior in predicting intention to use generic drug discount programs.

METHODS: A self-administered questionnaire was distributed to consumers filling a prescription at pharmacies in Houston (Texas, USA) that offered GDDPs (CVS, Walgreens, Wal-Mart, Kroger, Target, Randalls, and H-E-B stores). Constructs of TPB, namely, consumer's attitude towards GDDPs, perceived behavioral control (PBC), subjective norms (SN), and intention to use were measured using a pre-validated 5 point likert scale. The questionnaire also measured consumer awareness, attitude towards generic drugs in general along with demographic data. Structural equation modeling (SEM) using AMOS v18 was used to test the proposed model.

RESULTS: Response rate of 59.46% was obtained (n = 389). Scales developed to measure all the domains were reliable (α = 0.72-0.89). Majority (68.4%) of respondents were aware of GDDPs. Mean attitude towards GDDPs (4.08 ±0.83) and intention to use (4.33 ±1.01) scores were high. The SEM best fit model was the one where association of awareness with intention was mediated by attitude towards GDDPs as there was no direct relationship (CMIN/df = 3.29; p=<.001; CFI=0.904; RMSEA=0.077). Further, attitude towards generics was retained in the model and exerted a higher indirect effect on intention via attitude towards GDDPs. The effect of PBC on intention was very low and SN was not retained in the model.

CONCLUSIONS: Constructs of TPB, specifically attitude and PBC, along with awareness predicted intention to use GDDPs. As pharmacy stores develop prescription drug plans using GDDPs to increase utilization and increase store loyalty, strategies to improve consumer attitude towards generics and GDDPs will be useful. Continuous information regarding these programs may increase awareness of such programs leading to a positive attitude and increased use.

3)

GEOGRAPHIC VARIATION IN ASTHMA ADMISSION RATES AMONG PRIVATE INSURANCE POPULATION IN TEXAS

Suthira Taychakhoonavudh, MS; Rohan Parikh, MS; Luisa Franzini, PhD; Cecilia Ganduglia, MD, DrPH
Division of Management, Policy and Community Health, University of Texas, School of Public Health, Houston, Texas, USA.

OBJECTIVES: To explore the geographic variation in asthma admission rates among private insurance population between 2008 and 2010

METHODS: All Hospital admissions for asthma during the period of 2008 to 2010 were identified from the Blue Cross Blue Shield of Texas claims data using criteria specified in the Agency for Health Care Research and Quality's prevention quality indicators and pediatric quality indicators for asthma. BCBS covered lives by Hospital Referral Region (HRR) were extracted to calculate the HRR asthma admission rate. Index of variation (each HRR admission rate compare to overall Texas means) and coefficients of variation (CV; standard deviations from the Texas means) were calculated to examine the variation in asthma admission rate.

RESULTS: 5,594 asthma admissions were identified. Texas overall asthma admission rates were 56.19(2008), 57.99(2009), and 48.16(2010) per 100,000 beneficiaries. Adult (18 years and older) admission rate were 50.47(2008), 47.69(2009), and 42.79(2010) per 100,000 adult beneficiaries while the Pediatric (2-18 years old) admission rate were 81.77(2008), 99.94(2009), and 68.79(2010) per 100,000 pediatric beneficiaries. Results indicated that variation in pediatric asthma admission rate (CV=0.31(2008), 0.48(2009), 0.50(2010)) is higher compare to adult asthma admission rate (CV=0.27(2008), 0.27(2009), 0.32(2010)).

CONCLUSIONS: Substantial variations in asthma admission rates were found among HRRs in both adult and pediatric Texas population. Further investigation on factors contribute to this variation will provide insights for better policies and programs intervention on preventable asthma admission.

4)

PREDICTORS OF INTENTION TO PERFORM PROTECTIVE BEHAVIOR WITH RESPECT TO THE USE OF OVER THE COUNTER ACETAMINOPHEN PRODUCTS

Ruta Sawant, BPharm; Ravi Goyal, MS; Harshali Patel, MS; Sujit Sansgiry, PhD
Department of Clinical Sciences and Administration, College of Pharmacy, University of Houston, Houston, Texas, USA.

OBJECTIVE: Consumers are likely to misunderstand label warnings for over-the-counter (OTC) products leading to difficulty in performing appropriate product use behavior. This study assessed relationship between consumers' risk cognition of liver damage associated with inappropriate use of OTC acetaminophen products and their intention to perform protective behavior.

METHODS: A within-subject experimental study design was employed to recruit adults visiting selected pharmacy stores in Houston. Respondents were randomly exposed to labels containing organ-specific warnings for OTC acetaminophen products. Risk cognition measures (perceived severity, perceived vulnerability, response efficacy, and self-efficacy) and intention to perform protective behavior (always read warnings, use with more caution, and consult a pharmacist/physician) were recorded using a 7-point Likert scale where 1=strongly disagree and 7=strongly agree. Spearman correlation analyses and multiple linear regression were performed controlling for demographics, usage characteristic, and attitude towards the use of OTC products, at an a priori significance level of 0.05 using SAS 9.3.

RESULT: A total of 200 completed surveys were obtained. Items measuring intention to perform protective behavior showed strong internal consistency (Standardized Chronbach's alpha=0.8). Mean intention towards protective behavior (4.9 ± 1.3) was positively correlated with risk cognition measures: perceived severity ($r=0.46288$, $p<.0001$), perceived vulnerability ($r=0.35052$, $p<.0001$) and response efficacy ($r=0.30650$, $p<.0001$). Regression analysis showed that a unit increase in perceived severity significantly increased the intention to read the warnings carefully ($\beta=0.28092$, $p<0.0001$) and consult a pharmacist/physician ($\beta=0.30071$, $p<0.0001$). A unit increase in perceived vulnerability significantly increased the intention to be more cautious by 0.38 units ($\beta=0.30381$, $p<.0001$) when using acetaminophen OTC products.

CONCLUSION: Consumers having higher risk cognition of liver damage showed greater intention to perform protective behavior when using OTC acetaminophen products. Educational interventions about using OTC products as per label warnings should include measures to improve risk cognition, and thus intensify consumer intention to perform protective behavior.

5)

CONCEPTUAL FRAMEWORK FOR PATIENT REPORTED OUTCOMES AND PHARMACOGENOMICS IN PHASE II CLINICAL TRIALS

Charles S. Cleeland, PhD[1]; Emre Yucel[2]
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OBJECTIVE: Clinical trials need a conceptual framework to use best practices in demonstrating better efficacy and effectiveness, better efficiency and less toxicity. Both cancer symptom research, application of patient-reported outcomes and use of pharmacogenomics work towards similar goals, but in exclusion from each other. Our aim was to develop a conceptual framework of PROs for combining with pharmacogenomics during clinical trials to arrive at higher efficiencies during drug development.

METHODS: Phase II Clinical Trials conducted specifically for drug development are identified as to whether they used pharmacogenomics, patient-reported outcomes or both in their evaluation. A systematic review using key words "pharmacogenomics, patient reported outcomes, toxicity, phase II, clinical trial" and others are used to determine scientific articles in PubMed (Medline), EMBASE, Clinical Trial database at National Cancer Institute, Clinical Trial database at clinicaltrials.gov.

RESULTS:Preliminary results did not find any study that used both pharmacogenomics and patient reported outcomes to increase efficiency and decrease toxicity while monitoring symptoms. The investigation is ongoing.

CONCLUSION: Findings will be used to propose a conceptual framework of PROs for use in combination with pharmacogenomic testing during Phase II clinical trials to increase efficiency of using new drug candidates before they are discarded due to problems of toxicity and efficacy. Secondarily, such a framework could be helpful to identify and focus on newly defined targets for drug research.

6)

ASSESSMENT OF INTERPRETATION OF U.S.P. PICTOGRAMS BY ADULTS OF ASIAN INDIAN, CHINESE AND ARABIC ETHNIC ORIGINS IN U.S.A.

Shalak S.Gunjal, BPharm; Navneet P. Upadhyay, BPharm; Archita H. Bhansali, BPharm; Sujit S. Sansgiry, PhD
Department of Clinical Sciences and Administration, College of Pharmacy, University of Houston, Houston, Texas, USA.

OBJECTIVE: To compare the readability of 6 U.S.P. pictograms and to assess the effect of race (Asian Indian, Arabic, Chinese) on their comprehensibility, interpretation and their effectiveness in communicating the intended message.
METHODS: 183 adults of Arabic, Chinese and Indian origin were interviewed at various locations in Houston. A questionnaire with 6 pictograms in black and white was designed. The individuals were asked to interpret these pictograms. Their comprehensibility was determined on a 5 point Likert scale. A MANOVA test was conducted and the findings were analyzed using SAS® v9.3 (SAS Institute Inc. Cary, NC)

RESULTS: Interpretations of the 6 pictograms were significantly different from each other. (7.41% - 91%, p-value 0.02) There was no significant difference in the comprehensibility of the pictograms with respect to the three races. (Wilks' Lambda 0.94 -0.98, F test: p-values > 0.05) Further these pictograms interpretations were not affected by age, sex, profession and education level. (R2=0.0314, p-value 0.04)

CONCLUSIONS: Some of the existing pictograms were highly misunderstood and some were even misleading. This could lead to poor adherence and medication error. The results suggest that race is not a factor influencing pictogram readability. Also the pictograms accompanied with text were found out to be the most efficient way for label communication.

7)

IMPACT OF OVER-THE-COUNTER MEDICATION USE ON QUALITY OF LIFE OF THE ELDERLY

Shivani Mhatre, MS; Sujit Sansgiry, PhD
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OBJECTIVE: Use/misuse of over-the-counter (OTC) medications may cause adverse drug events (ADEs), more so ever in the elderly population. The study evaluated the direct and indirect effects of OTC medication use/misuse and associated ADEs on Health related quality of life (HRQoL) in elderly using a Structural Equation Modeling (SEM) approach.

METHODS: A cross-sectional study was conducted using retrospective data, collected from elderly patients in Houston, Texas. Cronbach's' alpha and principal factor analysis was used to evaluate internal consistency and factor validity, respectively, for HRQoL (measured using SF-12 version 2) in terms of physical component summary score (PCS) and mental component summary score (MCS). SEM was used to simultaneously evaluate the effect of OTC medication use and misuse on associated ADEs and the effect of OTC medication misuse and associated ADEs on HRQoL.

RESULTS: Of the 153 respondents, 17.8% misused OTC medications and 22.9% experienced ADE due to OTC medications. The SEM best fit model indicated that OTC medication misuse, rather than use, was a significant predictor of experiencing an ADE ($\beta=0.2$, $p<0.05$). While OTC medication misuse was not a direct predictor of HRQoL, ADEs associated with OTC medication misuse were responsible for decrease in PCS ($\beta=-3.8$, $p<0.01$) and MCS ($\beta=-3$, $p<0.05$).

CONCLUSION: Misuse of OTC medications leads to ADEs. ADEs arising due to OTC medication misuse have the potential to reduce patients' HRQoL. Understanding which OTC medications lead to ADEs and reduction in HRQL would help improve patient's health.

8)

CHANGES IN FINE MOTOR CONTROL WITH MEDICAL MANAGEMENT AND DEEP BRAIN STIMULATION IN PARKINSON'S DISEASE

Stacey L. Gorniak[1-3], Jay L. Alberts[4-6]
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OBJECTIVE: Medical management (MM) and deep brain stimulation of the subthalamic nucleus (STN-DBS) has been shown to improve gross motor function of Parkinson's disease (PD) patients. Studies of simple bimanual actions similar to activities of daily living (ADLs) are currently lacking in evaluating fine motor control and manual dexterity in both MMPD and STN-DBS-PD patients. Using a novel device, we have investigated basic time and force characteristics of a bimanual rotation task that translates well to regular ADLs in PD patients.

METHODS: This task involved connecting two independent objects together using one of two methods: (a) by simply placing one object on top of another, and (b) by using a slight rotation of one hand while the other hand is used as a stabilizer. Bimanual function was evaluated in MMPD patients both on and off anti-parkinsonian medication. In the same manner, STN-DBS-PD patients were evaluated in three DBS conditions while off anti-parkinsonian medication: off stimulation, on clinically derived stimulation parameters, and on settings derived from a patient-specific computational model.

RESULTS: Our results indicate that both medical management and DBS stimulation state does affect aspects of fine motor control in ADL-like tasks. In the absence of treatment (off-states of medication and programming), patients exhibited significant grip force asymmetry between the two hands. Further, overall increased grip force production in DBS patients experiencing clinically derived stimulation parameters may be attributed to the overflow of current across the STN, thereby affecting both motor action and perception of bimanual action. While both MM and STN-DBS have been shown to alleviate gross motor dysfunction in PD, these results indicate that both treatment types may not provide the same magnitude of benefit to fine motor coordination as shown in gross motor tasks.

9)

PRODUCTIVITY AND EFFICIENCY: PHARMACIST TIME SPENT ON COMPUTERIZED PRESCRIBER ORDER ENTRY (CPOE) VERSUS A PAPER-BASED MODEL IN AN INPATIENT PHARMACY

Mark D. Hatfield, MS[1]; Rodney Cox, PharmD, MS[2]; Shivani K. Mhatre, MS[1]; Sujit S. Sansgiry, PhD[1]; W. Perry Flowers, RPh, MS[3]
[1]Department of Clinical Sciences and Administration, College of Pharmacy, University of Houston, Houston, Texas, USA. [2] Memorial Hermann Memorial City Medical Center [3] Kaiser Permanente

OBJECTIVE: This study seeks to identify the distribution of an inpatient pharmacist's time using a CPOE versus a non-CPOE system.

METHODS: A time and motion study was conducted in two centralized inpatient pharmacies within the same hospital system, one with CPOE and the other without CPOE. Each pharmacy was observed for 24 randomized hours. A database instrument captured pharmacist tasks, grouped into four categories: Clinical, Distributive, Administrative, and Miscellaneous. Order actions data were also collected. SAS version 9.2 was used to analyze the data, with statistical significance set at 0.05.

RESULTS: A total of 23 hours at the CPOE setting and 24 hours at the non-CPOE setting met the inclusion criteria. The mean number of minutes for each recorded hour were, by category (mean ± SD for CPOE versus non-CPOE, p-value): Clinical (7.38 ± 4.27 versus 4.22 ± 3.26, p=0.006); Distributive (43.37 ± 7.74 versus 48.07 ± 8.61, p=0.037); Administrative (8.57 ± 5.59 versus 5.72 ± 6.99, p=0.020); and Miscellaneous (0.93 ± 1.17 versus 1.63 ± 1.92, p=0.314). The total number of order actions conducted by each pharmacy were 6494 and 3497 for the CPOE and the non-CPOE setting, respectively.

CONCLUSIONS: The amount of time spent by an inpatient pharmacist in a CPOE versus a non-CPOE setting was more for the Clinical and Administrative categories, and less for the Distributive category. These findings were statistically significant. More order actions were conducted at the CPOE setting versus the non-CPOE setting.

10)

UTILIZATION OF POLYPILL FOR MANAGEMENT OF MYOCARDIAL INFARCTION

Parul Gupta, MS; Rajender R. Aparasu, PhD
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OBJECTIVE: Past literature recommends varied combinations of 2 or more anti-hypertensive drugs as polypill therapy for Myocardial Infarction (MI). This study assessed the determinants of the probability of utilizing a most commonly recommended combination of polypill for MI patients.

METHOD: Data from 2009 Medical Expenditure Panel Survey (MEPS) was employed to examine the use of anti-hypertensive drug combinations among MI patients, defined by ICD-9-CM code '410'. Using MEPS sampling weights, descriptive analysis and survey logistic were conducted to derive national estimated prevalence of utilizing 2 or more combinations and assessing their predictors, respectively.

RESULTS: An estimated 5.91million patients (1.93%, 95%CI: 1.70%-2.15%) were diagnosed with MI in 2009. Of these, 5.03 million patients (85.92%, 95%CI: 82.62%-89.22%) were using atleast 1 anti-hypertensive and 3.60million patients (60.87%, 95%CI: 56.19%-65.55%) were using a combination of ≥2 anti-hypertensives. Most frequently utilized combination of ≥2 anti-hypertensives was of Angiotensin inhibitors or Angiotensin receptor blockers (ACEARB) and Beta-blockers (BBS) with a prevalence of 2.41million patients (40.86%, 95%CI: 36.35%-45.36%). Multivariate analysis revealed Hypertension (OR 2.43: 1.49 – 3.96), Congestive Heart Failure or CHF (OR 3.05: 1.33 – 7.00), and Chronic Atherosclerosis (OR 2.08: 1.32 – 3.29) as its statistically significant predictors. The frequency of most prevalent combination of ≥3 anti-hypertensives was 1.19 million (20.11%, 95%CI: 16.52%-23.70%) for a combination of ACEARB, BBs and Diuretics. The statistically significant predictors for probability of utilizing this latter combination were Presence of any limitation (OR 3.47: 1.69 – 7.13), Hypertension (OR 2.22: 1.08 – 4.58), CHF (OR 6.10: 2.92 – 12.73), and Chronic Atherosclerosis (OR 2.03: 1.12 – 3.70).

CONCLUSION: Combinations of ACEARB and BBs with or without Diuretics were the most commonly recommended Polypill combination. Hypertension, CHF and Chronic atherosclerosis were the statistically significant predictors of these combinations. Additionally, Presence of any limitation was a statistically significant predictor for the combination of ACEARB, BBs and Diuretics.

11)

PREVALANCE OF INAPPROPRIATE MEDICATION USE IN ELDERLY IN A COMMUNITY PHARMACY

Aylin Yucel, MS, MBA[1]; Philip M. Clark; Latif Ozbay; Emre Yucel[2]
[1]Department of Clinical Sciences and Administration, College of Pharmacy, University of Houston, Houston, Texas, USA. [2] University of Texas, School of Public Health, Houston, Texas, USA.

OBJECTIVE: Turkish Government Planning Organization (DPT) reports, population rate is expected to reach 17.6% in 2050 for 65 and older. Aging population translates into increase in drug use. Medication Management is challenging with elderly patients because of geriatric pharmacology. The objective of this study to find the prevalence of dispensed inappropriate medications (according to Beers'2002 criteria) to elderly from a community pharmacy.

METHODS: Prescription repository from a community pharmacy (downtown Yalova, Turkey) with diverse socio-economic demographic patient profile was retrospectively monitored to identify IMU (Inappropriate Medication Use). We used Social Security Institution (SGK)-Medula system's claim database for patients who dispensed at least one prescription in the month of October 2011 at this pharmacy. Any patient, who was dispensed with prescription in October 2011 was tracked back from September and until November 2011 for their prescriptions. SGK-Medula prescriptions for 192 elderly patients (≥60 years-old) were identified (108 female and 84 male).

RESULTS: We detected 424 cases of IMU. Each patient encountered on average 2.2 IMUs. 61.8% of all IMU cases are non steroidal anti-inflammatory drugs (NSAID). Average use for NSAID per patient was 1.36. There is no statistical significant difference between the female and male IMU of NSAIDs. The second most IMU was chlorpheniramine usage with 9% of all IMU cases and no statistically significant difference was found between females and males. Third most observed IMU was nitrofurantoin in males (13.1%), and hydroxyzine in females (10.2%). Ferrous sulphate (4.0%) is ranked the third most observed IMU regardless of the gender. Stimulant laxatives, alprazolam, doxazosin , and ticlopidine were the most seen IMU cases in this study.

CONCLUSION: Prescriptions of the elderly should be systematically evaluated to control for IMU. NSAIDs, chlorpheniramine, nitrofurantoin, hydroxyzine, and ferrous sulphate are especially worrisome due to high prevalence of exposure.

12)

PSYCHOTROPIC MEDICATION USE PATTERNS IN OLDER FOSTER YOUTH

Sarah C. Narendorf, PhD
Graduate College of Social Work, University of Houston, Houston, TX

OBJECTIVES: While it has been established that rates of psychotropic medication use are high among older foster youth, we know little about the nature of this medication treatment over time and whether subgroups exist. This study examined psychotropic medication use patterns by month between ages 17-18 for a group of older foster youth preparing to exit state care.

METHODS: Data come from the Voyages study of youth leaving foster care in Missouri between 2001-2005. Structured interviews were conducted at age 17 in person, then quarterly by phone to collect information on medication use by month until age 18 (n=294). Analyses examined: rates of use across the study period and by medication class, length of medication treatment, medication changes over the year, and number of medications each month. Latent growth mixture modeling identified subgroups of medication users by number of medications used each month. Multinomial logistic regression examined the characteristics of these classes.

RESULTS: Rates of medication use began at 34.7% and declined to 27.9% with declines in all types of medications except stimulants. Over 80% who were on medications had at least one medication change over the study year. Four medication use subgroups emerged: low/no use (74%), medium stable use (14%), declining use (4%), and high stable use (9%). Those in the medication using groups had higher rates of congregate care, mental health diagnoses and symptoms, and histories of psychiatric hospitalization. Youths in the high use group were more likely to meet criteria for behavioral disorders and more likely to be taking anti-psychotic and stimulant medications.

CONCLUSION: Most youths demonstrated patterns of relative stability in the number of medications used over the study year, though changes within medication regimen were common. Meaningful subgroups of medication users did emerge. Practitioners can use this information for transition planning specific to medication treatment.

13)

COMPARISON OF RISK OF TIME TO DEVELOPING DIABETES OF SMOKING CESSATION MEDICATIONS AMONG OBESE SMOKERS

Susan Abughosh, PhD[1]; Mo Yang, MS[1]; Hua Chen, MD, PhD[1]; Michael L. Johnson, PhD[1]; E James Essien, MD, DrPH[1]; Ronald J. Peters, DrPH[2]
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OBJECTIVE: Recent literature suggests an increased risk of diabetes following smoking cessation. Our objective was to compare the risk of developing diabetes among obese smokers using bupropion vs. varenicline as well as other predictors during the first 3 years post-cessation.

METHODS: A population-based retrospective cohort study was conducted using the General Electric (GE) electronic medical record database (2006 – 2011). The cohort consisted of obese adult smokers newly initiating use of a smoking cessation medication: bupropion vs. varenicline without a diabetes diagnosis at baseline. The outcome variable was time to developing diabetes following first prescription with a 3-year follow up. Chi-square tests were conducted to assess the frequency distribution of sample characteristics and association with diabetes development. Univariate survival analyses using Kaplan-Meier survival curve were conducted and log-rank test was used to assess significance. Cox Proportional Hazard (PH) regression model was carried out after evaluating PH assumption by Schoenfeld residual test. Interaction terms were included in the PH regression model if assumption was violated.

RESULTS: The sample comprised of 91,899 individuals. A total of 3,668 (crude diabetes incidence rate: 13.3 per 1,000 person-years) obese smokers developed diabetes in 3 years. Abstinence at 12 months did not meet the PH assumption and interaction was created for this variable in the final Cox model. There was no statistically significant difference in diabetes risk using bupropion vs. varenicline (Hazard Ratio: 1.408 95% Confidence Interval: 0.963 - 2.058). Non-primary care group (1.271 [1.069 – 1.511]), male (1.174 [1.004 – 1.373]), non-white (1.197 [1.015 – 1.410]), age group (40 – 64) (0.803 [0.656 – 0.984]), abstinence at 12 months (0.758 [0.604 – 0.952]), hypertension (1.239 [1.017 – 1.509]), lung cancer (2.023 [1.024 – 3.999]), and interaction time and abstinence at 12 months (1.023 [1.004 – 1.042]) were significant predictors of developing diabetes.

CONCLUSIONS: There is no significant difference in the diabetes risk three years post-cessation among obese adults using varenicline vs. bupropion.

14)

COMPARATIVE EFFECTIVENESS OF SMOKING CESSATION MEDICATIONS AMONG OBESE SMOKERS

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OBJECTIVE: To compare abstinence rates of different Food and Drug Administration (FDA)-approved smoking cessation medication strategies among obese smokers.

METHODS: A population-based retrospective cohort study was conducted using the General Electric (GE) electronic medical record database (2006 – 2011). The cohort consisted of obese adult smokers newly initiating use of an FDA-approved smoking cessation medication (bupropion vs. varenicline). The outcome variable was abstinent vs. not at 3, 6, or 12 months following first prescription. Descriptive analyses and chi-square tests were conducted to assess the frequency distribution of sample characteristics and their association with smoking cessation medication use. Multivariate logistic regression models were carried out to identify predictors of abstinence at 3, 6 and 12 months after assessing co-linearity between independent variables. Backward elimination was used to arrive at the final models.

RESULTS: The abstinence rate of using any smoking cessation medications among obese smokers was 17.72% at 3 months, 20.61% at 6 months, and 22.51% at 12 months, respectively. While previous literature among adults reports higher abstinence rates with varenicline compared to bupropion, our findings among obese smokers indicate slightly higher abstinence rates for those using bupropion compared to those using varenicline (bupropion vs. varenicline: 20.51% vs. 16.85% at 3 months ($p = 0.01$); 22.87% vs. 20.45% at 6 months ($p = 0.09$); 25.00% vs. 22.84% at 12 months ($p = 0.10$)). Significant predictors of successful abstinence included: demographic characteristic factors (age, race, region, payment type, and specialty group), diseases (hypertension, lung cancer, depression, and alcohol dependent), utilization (weight control drug use and number of cigarettes smoke per day), smoking counseling, and baseline Body Mass Index (BMI) value.

CONCLUSIONS: Abstinence rates were higher among obese smokers taking bupropion vs. those taking varenicline. Predictors identified in this study should be considered when designing smoking cessation interventions among the high risk population of obese smokers.

15)

COMPARATIVE EFFECTIVENESS RESEARCH OF SELECTIVE SEROTONIN RE-UPTAKE INHIBITORS (SSRI'S) VERSUS COGNITIVE BEHAVIORAL THERAPY (CBT) FOR PANIC ATTACKS BY THE RE-AIM MODEL

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OBJECTIVES: Panic disorder (PD) affects about six million American adults, as well as many more who suffer from sub threshold PD. Psychotherapy and pharmacotherapy can help in achieving symptoms remission of PD. We have focused our efforts on comparing the efficacies of two popular therapies employed in panic attack management: SSRI's (Selective Serotonin Reuptake Inhibitors) and CBT (Cognitive Behavioral Therapy). We compared the two therapy options on basis of the REAIM Model.

METHODS: We began by delineating our research question, defining our target population, and defining our literature review methods. Literature reviews were divided into 1) Pharmacotherapy 2) CBT. We chose to use the RE-AIM model (Reach, Effectiveness, Adoption, Implementation, and Maintenance) in order to scrutinize each study considered for inclusion in this review.

RESULTS: Both rapid and long-lasting treatment effects can be obtained through a combination of both the therapies, and such an approach does not interfere with the efficacy of cognitive-behavioral therapy.The SSRI studies fail to address the issue of adoption. Adoption and maintainence of pharmacotherapy are not well tested in a randomized-controlled trial since it does not address these issues. SSRI side effects and withdrawal effects negatively impact maintenance. The maintenance is low for CBT therapy, as no follow up therapy is needed and the results are long-lasting. Once acquired, the skills ideally remain for the duration of the patient's lifetime.

CONCLUSION: According to our RE-AIM analysis, CBT outshines SSRIs in each category, primarily due to its long-term results, absence of side effects, and greater effectiveness. While pharmacotherapy aims at short-term symptomatic relief for patients with panic disorder, CBT aims at understanding and treating the underlying cause of the disorder.

16)

COMPARATIVE EFFECTIVENESS OF BREAST CANCER RISK REDUCTION AGENTS: COMPARING TAMOXIFEN, RALOXIFENE AND EXEMESTANE

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OBJECTIVE: The objective of the study was to assess the comparative effectiveness of tamoxifen, raloxifene and exemestane in chemoprevention of breast cancer in postmenopausal women in the United States from third party payer perspective.

METHODS: A hypothetical cohort of 1000 women with 5 year predicted breast cancer risk / (≥ 1.66) based on the Gail et al. model, history of lobular carcinoma in-situ and history of atypical hyperplasia was simulated using the Markov model. A Markov model was developed comprising of 5 health states (Healthy, Adverse Event, Breast Cancer, Death Due to Breast Cancer and Death Due to Other Causes) to calculate incremental costs per quality-adjusted life year (QALY) gains for all three risk reduction agents. Annual transition probabilities were derived from NSABP P-2 trial (for tamoxifen and raloxifene) and MAP.3 trial (for exemestane). Direct costs and utilities were literature-based. Costs and benefits were discounted at 3% annually. Two-way sensitivity analyses were performed by varying values for key parameters (QALYs and costs) in the model.

RESULTS: Under base-case scenario, gain of QALYs per patient associated with exemestane was 20.51 compared with raloxifene (27.39) and tamoxifen (26.43). The cost of gaining one QALY was found to be lowest with exemestane ($5,538.64) compared with raloxifene ($26,696.12) and tamoxifen ($34,906.24). These results were robust to the two-way sensitivity analyses performed.

CONCLUSION: Exemestane was found to be cost effective alternative compared to tamoxifen and raloxifene in the chemoprevention of breast cancer. Hence, introduction of chemoprevention with exemestane in the target population may be justifiable.

17)

COMPARATIVE EFFECTIVENESS OF THE CURRENT FDA DRUG FACTS PANEL TO A PROTOTYPE LABEL ON WARNINGS INFORMATION PLACEMENT: EFFECT ON PURCHASE INTENTION AND EASE OF USE

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OBJECTIVE: Order in which warning information is presented on the over-the-counter medication Drug Facts panel could enhance patient safety. This study assessed the effect of placement of warning information on OTC Drug Facts panel to provide guidance to the FDA in enhancing appropriate product use.

METHODS: Two experimental labels (current and new) were developed from an existing marketed drug product by varying the sequence of information to- uses, directions, other information and warnings (new) vs uses, warnings, directions and other information (current). In this repeated measure experimental study, each participant evaluated labels on ease of use and purchase intention using an eleven point scale with appropriate scale anchors. The order in which participants viewed the label was randomized. Mean score for ease of use and purchase intention was contrasted between labels using match paired t-test.

RESULTS: Of the 297 study participants (71% response rate), majority were males (60.4%) with a mean (±SD) age of 21.3 (±1.8) years. More than half (55%) indicating they often read labels, while 70% were currently not on any medications. The mean (±SD) scores were significantly ($p<0.0001$) higher for ease of use for the new (8.0 ± 1.2) as compared to the current label design (6.8 ± 1.2). Similarly the mean purchase intention were also significantly ($p<0.0003$) higher for the new label design (7.8 ± 1.4) compared to current label (7.4 ± 1.2).

CONCLUSION: The prototype new label developed with congruent information where uses and directions were clustered and were followed by warnings was perceived better. This information can help guide the FDA to conduct more studies and develop policy changes as necessary to improve information comprehension from OTC Drug Facts panel.

18)

STEREOSCOPIC RECONSTRUCTION OF THE BREATHING FUNCTION

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OBJECTIVE: Waveforms extracted via nasal thermistors are the most common signals used to study breathing function in sleep studies. In recent years, unobtrusive alternatives have been developed based on thermal imaging. Initially, the research aimed to produce a measurement on par with the clinical standard (the thermistor), but at a distance. This work presents a development of the obtrusive study via elaborating the use of multidimensional data found exclusively in thermal imaging. The extraction of multidimensional breathing information sensed by a thermal camera enables significant diagnostic value.

METHODS: Nostril tracking and localization is via Computer Vision. Visualization is via Computer Graphics.

RESULTS: Stereoscopic reconstruction of human breathing function presents observable part of nasal airway continuously affected by thermal airflow. The reconstruction reveals a local pathological pattern which was absorbed by classical waveform methods.

CONCLUSIONS: Stereoscopy is a development in reconstructing breathing function at distant where thermal imaging meets clinical needs. Extracted multidimensional information potentially enables many diagnostic values of respiratory upper airway.

19)

ASSESSMENT OF CORRELATION BETWEEN MULTIVITAMIN CONSUMPTION AND ADOPTION OF OTHER HEALTHY LIFESTYLE CHOICES IN UNIVERSITY OF HOUSTON STUDENTS

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OBJECTIVE: To compare multivitamin usage status in University of Houston students to determine if there is a correlation with taking a multivitamin and adoption of other healthy lifestyle choices.

METHODS: Using an observational, co-relational study design, lifestyle habits of multivitamin users and non-users were analyzed. Online self-administered questionnaire was conducted among university students (n=167). A proc t-test method was used to compare the two groups to see if there was a difference in healthy lifestyle behaviors between the groups.

RESULTS: Consumption of soda was the only statistically significant variable (t-value=2.24, Pr>t=0.0268) where a difference exists between the two groups wherein the multivitamin consumers were drinking less soda thus following healthy habits compared to non multivitamin takers. All other dependent variables used for analysis were statistically insignificant between multivitamin users and nonusers.

CONCLUSION: The study does not overall support the hypothesis that multivitamin intake is positively or negatively associated with university student healthy-behavior. There is little statistical significant difference in healthy lifestyle choices between University of Houston Students who consume a daily multivitamin and those who do not.

20)

ANTIPSYCHOTIC USE AND RISK OF PNEUMONIA IN ELDERLY NURSING HOME RESIDENTS: A PROPENSITY-MATCHED STUDY

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OBJECTIVE: Antipsychotic medications are extensively used in nursing homes for management of behavioral and psychiatric disorders in the elderly. Pneumonia is one of the common causes of antipsychotic-related mortality in the elderly population. None of the previous studies conducted head-to-head comparison of typical and atypical antipsychotics with respect to pneumonia. This study examined the risk of pneumonia with use of typical versus atypical antipsychotics in dual eligible elderly nursing home residents.

METHODS: The study involved a retrospective cohort design matched on propensity score using Medicare and Medicaid Analytical extract (MAX) data from four US states. The study population included all elderly dual eligible (Medicaid and Medicare) nursing home residents (aged > 65 years) who initiated antipsychotics anytime during July 1, 2001 and December 31, 2003. Antipsychotic users were followed for up to six months. The risk of pneumonia was modeled using Cox proportional model and extended Cox hazard model stratified on matched pairs based on propensity score, using atypical agents as the reference category.

RESULTS: Analysis of Medicaid-Medicare dual eligible data revealed that there were 49,904 antipsychotic (46,293 atypical and 3,611 typical) users in the unmatched nursing home cohort and 7,218 (3,609 atypical and 3,609 typical) users in the matched cohort. The unadjusted rate of pneumonia was 8.17% (295) for atypical antipsychotic users and 5.21% (188) for typical antipsychotic users. The results of Cox regression [average HR, 1.24; 95% CI, 0.94 -1.64] and extended regression [<50 days: HR, 1.17; 0.83-1.66 and 50-180 days: HR, 1.36; 0.87-2.14] suggest that, there was no difference in risk of pneumonia among typical and atypical users.

CONCLUSION: The study found no differential risk of pneumonia with use of typical and atypical antipsychotic use in dual eligible nursing home residents. More research is needed to evaluate other contributory factors for the differential risk of mortality with respect to these two antipsychotic classes.

21)

WHICH RISK ADJUSTMENT METHODS WORKS BEST IN PREDICTING HEALTH CARE EXPENDITURE AMONG CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER?

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OBJECTIVES: Pediatric Attention Deficit/Hyperactivity Disorder (ADHD) is associated with substantial financial burden on families, payers, and society. This study compared different risk adjustment methods in predicting health care expenditure among children with ADHD.

METHODS: This study used data from 2008 Medical Expenditure Panel Survey (MEPS) involving children from 5-17 years of age with ADHD. Patients with ADHD were identified using International Classification of Diseases, ninth revision, Clinical Modification (ICD-9-CM) code of '314'. Diagnosis based (D'Hoore version of Charlson comorbidity Index (CCI), Modified Elixhauser comorbidity Index (MECI)); pharmacy based (Chronic disease score-1 (CDS-1)); and Columbia Impairment scale (CIS) were used to risk adjust total healthcare expenditures. Performance of each of the comorbidity measures was compared after adjusting for baseline factors (age, sex, race, region, metropolitan statistical area, family income, and health insurance coverage) using regression model statistics (adjusted R2).

RESULTS: The overall prevalence of pediatric ADHD was 2.47% (n = 5.82 million). Most of the children were boys (68%), White (84%) and had private health insurance (62%). Overall mean annual expenditure was $ 4,145.87. Adjusted R2 for the baseline model was 0.1130. When different comorbidity measures were added to the baseline model the adjusted R2 increased to: 0.1230 (CIS), 0.1566 (D'Hoore version of CCI), 0.1534 (MECI), and 0.1372 (CDS-1). Among different combinations, a model consisting of patient baseline characteristics, MECI, and CIS explained the most variation in healthcare expenditure (adjusted R2 = 0.1618).

CONCLUSIONS: Models that include comorbidity and functional status measures performs best in risk adjusting health care expenditure in pediatric ADHD. There is a greater need to evaluate the use of CIS as a potential risk adjustment tool in mental and behavioral problems.

22)

AGREEMENT AMONG ESTIMATORS OF GLOMERULAR FILTRATION IN CHILDREN WITH CANCER

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OBJECTIVES: The glomerular filtration rate (GFR) is the most useful indicator of kidney function in children and adolescents. GFR may be measured by various means including a highly sensitive and specific method using 99mTc-DTPA. GFR can also be estimated using one of several mathematical equations with differing abilities to accurately predict the actual GFR. There are no studies that evaluate the relationship between measurements and estimates of GFR in children with cancer We hypothesize that there is lack of agreement between estimators and measurements of GFR in children with cancer treated at Texas Children's Cancer and Hematology Center. The primary objective of this study is to compare the estimated GFR to the measured GFR in children with cancer treated at Texas Children's Hospital and Cancer Center.

METHODS: This study is a retrospective review of existing data (January-2009 to May-2012) from Texas Children's Hospital, a children's specialty hospital in the Texas Medical Center. An electronic query of the hospital's electronic medical record will be performed to identify eligible subjects (pediatric oncologic patients <18 years of age). For inclusion, subjects must have received at least one serum creatinine (IDMS-traceable) and one GFR measurement (by 99mTc-DTPA) within 72 hours of each other. For each patient, the measured radioisotope GFR will be compared to the estimated GFR as per the following equations: Schwartz, Bedside Schwartz (IDMS traceable), Cockcroft-Gault, and Modification of Diet in Renal Disease (MDRD; IDMS traceable). Only the first matched pair for each patient will be used. Bland-Altman analyses will be performed to compare the estimated to measured GFR.

RESULTS: To be presented

CONSLUSIONS: To be presented

23)

WHICH COMORBIDITY INDEX PERFORMS BETTER IN PREDICTING 30-DAY MORTALITY? – A SYSTEMATIC REVIEW

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OBJECTIVE: This study examines the literature to evaluate the relative performance of comorbidity indices that predict 30-day mortality.

METHODS: Databases including Medline, PubMed, and PsycINFO were searched for studies that compared comorbidity indices. The outcome was defined as all-cause mortality within 30 days of admission. A meta-analytical approach was used to summarize all the studies. A c-statistic cutoff point of ≥ 0.02 was used for detecting the statistical significance of the performance between two comorbidity indices. Scaled Ranking Score was used to estimate the relative superiority of any given comorbidity indices. Hypergeometric test was carried out to examine which indices perform statistically significantly better than other comorbidity measures.

RESULTS: Out of 2,805 studies identified, 23 studies met the eligibility criteria. Main risk adjustment indices used for comparison included Acute Physiology and Chronic Health Evaluation (APACHE), Sequential Organ Failure Assessment score (SOFA), Charlson Comorbidity Index, Model for End-Stage Liver Disease Score (MELD), and Simplified Acute Physiology Score (SAPS). Based on Scaled Ranking Score, SAPS performed best (score .510) among all the comorbidity indices. However, based on hypergeometric test, the five measures performed equally well.

CONCLUSIONS: Although all the selected comorbidity indices perform equally well, SAPS seems better than other indices for short-term mortality based on Scaled Ranking Score.

24)

PREDICTING IN-HOSPITAL MORTALITY AND HOSPITAL LENGTH OF STAY IN DIABETIC PATIENTS

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OBJECTIVES: As compared to non-diabetics, diabetic patients are more likely to be hospitalized with longer hospital stay. A variety of risk adjustment (RA) measures are available, which makes it difficult to select the best performing measure to predict outcomes. The aim of this study is to compare performance of risk adjustment measures to predict in-hospital mortality and length of stay (LOS) in diabetic patients.

METHODS: A retrospective cross-sectional study was conducted using the HCUP Nationwide inpatient Sample (NIS)-2009 data. All adults (age >18 years) diagnosed with Diabetes were included in the study. Charlson-Deyo Adaptation and Elixhauser Co-morbidity Index were constructed using the International Classification of Disease, 9th Revision, Clinical Modification (ICD-9-CM). Two proprietary measures (APR-DRG & Disease / Staging) were compared with comorbidity measures for predicting in-hospital mortality and LOS. Logistic regression was used to predict in-hospital mortality and c-statistics were used to assess the comparative performance of different models. Adjusted R2 from Linear regression models was compared to do the same for the continuous outcome, LOS.

RESULTS: The prevalence of diabetes was found to be 28.2% with mortality rate of 2.09% and median LOS of 2.77 ± 0.01 days. Hospital stays were predominantly by white females (<65 years). Models containing APR-DRG measure outperformed all other measures for both outcomes (in-hospital mortality, c-statistics=0.91-0.90 and; LOS, adjusted R2=0.172-0.163). The model containing all demographic variables along with APR-DRG and Elixhauser comorbidity index outperformed all other models for predicting in-hospital mortality (c-statistics=0.91) and LOS (Adjusted R2=0.172).

CONCLUSIONS: The APR-DRG, being a clinical model, is superior to other comorbidity measures for risk-adjusting in-hospital mortality and LOS. Addition of comorbidity measures to APR-DRG improves the model performance when predicting in-hospital mortality and LOS.

25)

CRITICAL APPRAISAL OF SYSTEMATIC REVIEWS OF INTERACTIONS WITH PROTON PUMP INHIBITORS

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OBJECTIVES AND METHOD: The recent discussion surrounding proton pump inhibitors and adverse reactions related to their interactions has resulted in a number of systematic reviews along with other observational and experimental studies. This study aimes to critically evaluate the systematic reviews that focused on proton pump inhibitors interactions by the AMSTAR method.

RESULTS: The results demonstrated that out of the 20 articles that fit within the inclusion criteria for critical appraisal by the AMSTAR method, half provided a priori design, 4 (20%) complied with the duplicate study selection, data extraction and agreement among at least two independent reviewers, 12 (60%) conducted a comprehensive literature scan, 11 (55%) reported publication status as inclusion criteria, 9 (45%) reported a complete list of articles by inclusion and exclusion criteria, 11 (55%) assessed and documented the scientific quality of the included research, 12 (60%) used the scientific quality of the included studies appropriately in formulating conclusions, 13 (65%) used appropriate methods to combine studies, 4 (20%) of the systematic reviews assessed publication bias for the studies included, and 8 (40%) reviews declared any conflict of interest. 3 (15%) systematic reviews out of total 20 fulfilled all conditions of the AMSTAR method for conduct of systematic reviews.

CONCLUSIONS: More investigation is needed to evaluate whether the above results are representative of the overall quality of systematic reviews. Clinical pharmacists and all clinicians must be aware that systematic reviews, similar to all other research methods, must comply with established rules of methodology. Therefore, clinical pharmacists and clinicians should be cognizant and aware of scientific scrutiny and adherence to rules of conducting systematic reviews before they evaluate their findings.

26)

FACTORS ASSOCIATED WITH SMOKING BEHAVIOR AMONG MALE UNIVERSITY STUDENTS IN THE KINGDOM OF SAUDI ARABIA

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OBJECTIVE: Identifying predictors of smoking in male students in three universities in the Kingdom of Saudi Arabia (KSA).

METHODS: A non-experimental cross-sectional study was conducted in a three universities in KSA. A pre-tested validated questionnaire was used to evaluate predictors of smoking such as academic performance, socio-demographics, peers smoking, and presence of a smoker within the family. A participant was considered a smoker if he smoked one or more cigarettes within the last 30 days. Data was collected from December 2011 to January 2012. Descriptive statistics and bivariate analysis was used to identify the predictors of smoking. A multiple logistic regression model was performed to determine the predictors of smoking.

RESULTS: A total of 467 out of 920 surveys were received with net response rate of 50.76%. Of the 467 participants, 31% were smokers. The mean age of respondents + SD was 22.2 + 2.15 years. The vast majority of them were singles (97%) and having income less than $3200/year (79%). About 77% of participants reported that they had at least one smoking friend. Lower academic performance (OR: 2.29, 95% CI: 1.018–5.167), peer smoking (OR: 4.14, 95% CI: 1.525–11.25), and presence of other smokers in the family (OR: 2.77, 95% CI: 1.35–5.638) were the significant predictors of smoking status identified using a multiple logistic regression model.

CONCLUSION/IMPLICATION: These findings emphasize the need and importance of developing antismoking educational programs for the youth of KSA highlighting the influence of family and peer pressure to reduce initiating cigarette use.

27)

PREDICTORS OF BEING PRESCRIBED WITH SMOKING CESSATION AGENTS AMONG MENTAL DISORDERS PATIENTS

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OBJECTIVES: Psychiatric disorder patients made up to one third of the smoking population and consumed almost half of all cigarettes consumed in the United States. The objective of this study was to examine predictors of being prescribed with smoking cessation agents among mental disorder patients during their doctor's visits using NAMCS 2009 data.

METHODS: Retrospective cross-sectional study design. Smokers with a visit of mental disorder were included in the cohort. Among the cohort, we identified patients who were being given drug category "smoking cessation agents". Descriptive statistics and chi-square analyses were used to determine the frequencies and associations of patient characteristics with the outcome being prescribed with smoking cessation agents. Multivariate logistic regression with significant variables ($p<0.2$) in the chi-sq was then conducted to determine predictors of being prescribed with the cessation products.

RESULTS: In the 2009 NAMCS data, a total of 7.646 million smokers had a mental disorder visits, but only 1.099 million of them got smoking cessation agents (14.38%). Patients who were older (OR=2.72), had private health insurance plans, and with a higher median household income (OR=3.43) were more likely to receive the smoking cessation agents. Physicians who were in the psychiatry specialty, and whose offices are in the non urban area (OR=6.01) were more likely to give the cessation agents to their patients.

CONCLUSIONS: There is definitely a need for interventions to target this health hazard among this subpopulation. Future studies should investigate the reasons for this discrepancy and develop effective interventions to aid mental disorder smokers in quitting.

28)

SPANISH FOR THE HEALTH PROFESSION

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OBJECTIVES: When vocabulary is not enough, the role of cultural understanding in the L2 classroom for the professions. The health professional will demonstrate knowledge and understanding of the cultural perspectives surrounding health and disease, health practices for different cultural groups.

METHODS: Readings, in class discussion, role playing scenarios.

RESULTS: In class assessments and evaluations.

CONCLUSION: A preliminary assessment based on class results and student feedback posits the need for inclusion of these materials in the language classroom, whereas most of the courses for this purpose have focused solely on the target vocabulary. Further research is needed as well as opportunities to apply this cross cultural knowledge to real life situations.

29)

RURAL - URBAN DIFFERENCES IN FATALISTIC BELIEFS ABOUT CANCER PREVENTION

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OBJECTIVES: Prior literature showed that people holding fatalistic beliefs, defined as events are controlled by external forces and humans are powerless to influence them, are less likely to engage in cancer preventive behavior such as smoking and exercising. The study aimed to assess rural-urban difference in fatalistic beliefs about cancer prevention.

METHODS: The Health Information National Trend Survey (HINTS)–2007 data was used in this study; it is conducted biennially by National Cancer Institute to collect cancer related information from non-institutionalized adult population. Three fatalistic beliefs were captured in the database: (i) it seems like everything causes cancer (ii) there are so many different recommendations about preventing cancer, it is hard to know which ones to follow and (ii) there is not much you can do to lower your chances of getting cancer. All survey participants were included in the cohort. Multivariable logistic regression was used to assess rural-urban differences in three fatalistic beliefs adjusting for age, gender, race, region, education, employment status, income, health insurance, marital status, cancer history and cancer seeking information. All analyses were carried out using jackknife weights to account for survey design enabling us to extrapolate results at national level.

RESULTS: Of 7,674 participants, 54.59% agreed that everything causes cancer, 76.7% agreed that it's hard to know which recommendations to follow and 28.29% agreed that they cannot do much to lower chances of getting cancer. Compared to urban residents, rural residents were 35% (OR: 1.35; 95% CI: 1.12-1.60), 36% (OR: 1.36; 95% CI: 1.10-1.68) and 31% (OR: 1.31; 95% CI: 1.07-1.60) more likely to hold fatalistic beliefs (i), (ii) and (iii), respectively.

CONCLUSIONS: A substantial proportion of Americans hold fatalistic beliefs about cancer prevention. Programs or interventions should be specifically designed for rural population to reduce fatalistic beliefs that might improve cancer prevention behaviors.

30)

RACIAL AND ETHNIC DISPARITY IN SMOKING CESSATION MEDICATION USE AMONG ADULT SMOKERS IN THE UNITED STATES

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OBJECTIVE: To examine racial/ethnic disparity in smoking cessation medication use among adult smokers in the United States.

METHODS: A retrospective cross-sectional study was conducted using the Medical Expenditure Panel Survey (MEPS) data (2009). The study included adults aged ≥ 18 years who self-reported currently using tobacco. The outcome variable was receiving smoking cessation medication use vs. not. Andersen's Behavioral Model of Health Services Utilization was used as the conceptual framework. The independent variables were categorized into predisposing, enabling, and need characteristics, including age, gender, race, marital status, education, insurance status, family income, region, urban residence, usual source of health care, general health status, comorbidity, obesity, activities of daily living. Descriptive statistics and chi-square tests were used to examine group differences. Multivariate logistic regression analysis was performed to investigate racial/ethnic disparity in smoking cessation medication use.

RESULTS: Total sample was 39,900,131and mostly comprised of Non-Hispanic Whites (73.38%), followed by Non-Hispanic Black (12.20%), Hispanics (9.53%), and others (4.88%). Race was a significant predictor of smoking cessation medication use. The findings indicated that Non-Hispanic Blacks were less likely to use smoking cessation medication compared to Non-Hispanic Whites (odds ratio [OR]: 0.39, 95% confidence interval [CI]: 0.19-0.80). Smokers who live in South were less likely to use smoking cessation medication compared with those who live in Northeast (OR: 0.43, 95% CI: 0.20-0.93). Obese people were more likely to use smoking cessation medication compared to non-obese smokers (OR: 2.68, 95% CI: 1.69-4.27). Additionally, urban residence was a significant predictor of smoking cessation medication use (OR: 2.26, 95% CI: 1.17-4.39).

CONCLUSIONS: While smoking cessation remains highly recommended for all smokers, Black smokers are less likely to use smoking cessation medications compared to White. Further research is needed to understand the reasons for this disparity and find ways to eliminate it.

31)

GEOGRAPHIC VARIATION IN CESAREAN SECTION RATES ACROSS HOSPITAL REFERRAL REGIONS IN TEXAS: A 2008-2010 ANALYSIS

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OBJECTIVE: With more than one-third of births delivered by cesarean section (C-section) in the U.S. and a substantial variation across states, the study assessed the rate of C-section's performed across hospital referral regions (HRR's) within Texas.

METHODS: The study used 2008 – 2010 inpatient claims data from Blue Cross Blue Shield (BCBS) of Texas, the largest commercial insurance provider in Texas. Of the 5,398,020 members enrolled in BCBS, about 51% were females. Delivery procedures were identified using diagnosis related groups (C-section: 765,766; Vaginal: 767, 768, 774, 775) and only females of child bearing age (15-44 years) at the time of admission were included in the study. Claims were mapped to twenty two Texas HRR's using the billing provider zip codes.

RESULTS: A total of 88,717 delivery procedures were performed among BCBS insured females across Texas from 2008-2010. The weighted average rate of C-sections for Texas was found to be 39.57% (median: 40.53%); with the lowest rate observed for Wichita Falls at 27.19% and the highest for El Paso at 53.19%. Based on the index of variation calculations, El Paso was 34.42% higher than the state's average while Wichita Falls was 31.29% below the state's average.

CONCLUSIONS: Overall, Texas is nearly 6% above the national average of births by C-section for commercial plans but considerable variation exists across HRR's. Further exploration is required in understanding factors that lead to such variations and high rates of C-section procedures.

32)

FACTORS ASSOCIATED WITH PRESCRIPTION DRUG EXPENDITURE IN PATIENTS WITH DIABETES MELLITUS: A CROSS-SECTIONAL STUDY OF MEDICAL EXPENDITURE PANEL SURVEY, 2005-2009

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OBJECTIVES: To determine the factors associated with prescription drug expenditure in patients with Diabetes Mellitus in the United States (US).

METHODS: A retrospective cross-sectional study was conducted using the 2005-2009 Medical Expenditure Panel Survey (MEPS) data, a nationally representative data on non-institutionalized US population. The study sample included diabetic patients identified using the diabetes diagnosis variable reported in the MEPS data and the ICD-9CM code: 250. Descriptive statistics were performed on the weighted sample to estimate the average prescription drug expenditure for patients with Diabetes. The Anderson Behavioral Model was used as the theoretical framework to identify factors associated with prescription drug expenditure and Ordinary Least Square regression was used for analysis. The prescription drug expenditure was log transformed to address skewed nature of cost data.

RESULTS: An estimated 97 million patients were diagnosed with Diabetes Mellitus during 2005-2009. The average prescription drug expenditure for these patients was $3088 per year (95% CI: 2977-3199). The linear regression revealed that predisposing (age, race, marital status and employment status), enabling (region, health insurance coverage, prescription insurance coverage and usual source of care) and need (Charlson comorbidity index and general health status) characteristics were significantly associated with prescription drug expenditure. One year increase in age increased expenditure by 1.1%. Non-Hispanic blacks had 33% higher expenditure than other races. Patients with health insurance coverage, prescription insurance coverage and usual source of care had 54%, 13% and 69% higher expenditure respectively as compared to those without these benefits. Charlson comorbidity index was positively associated with prescription drug expenditure. Patients with poor/fair self-reported health status had 61% higher expenditure than other patients.

CONCLUSIONS: Predisposing and enabling factors like race, employment, health and prescription insurance coverage and usual source of care had significant impact on prescription expenditure despite controlling for health status and need characteristics.

33)

HEALTHCARE ACCESS TO OBESE PATIENTS WITH AND WITHOUT HYPERTENSION USING ANDERSEN BEHAVIORAL MODEL: STUDY ON MEDICAL PANEL EXPENDITURE SURVEY (2009)

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OBJECTIVES: Obesity has recently become a global epidemic in the United States and at the same time, it is the major risk factor for the development of hypertension, the incidence of which is also increasing dramatically. Literature revealed that presence of hypertension in obese patients affected healthcare cost and primary access to care. The objective of this study was to assess the relationship of access to health care for obese patients with and without hypertension.

METHODS: Medical Expenditure Panel Survey (MEPS) 2009 data was analyzed for obese patients with and without hypertension. Access to health care was measured as patients who reported to have usual source of care (USC) provider. Logistic regression and goodness of fit tests were conducted to get the best fit model. All analysis was performed by using STATA 11.

RESULTS: A total of 6286 (26.14%) adult patients were obese; whereas 3016 (48.04%) had obesity and hypertension while 1433 reported to have USC provider. Logistic regression analysis found that patients with both obesity and hypertension had better access to health care (OR=1.36, p=0.240) compared to only obese patients. Patients with public insurance (OR= 3.37, p=0.001), with specialist referral (OR=1.58, p=0.166), with a very high self-pay (OR=11.17, p=0.0000), who always got care when needed (OR=1.73, p=0.424) and have high-school diploma (OR=1.72, p=0.080) are more likely to report higher access to healthcare. Age was the only demographic factor found statistically significant showing older adults (54 to 85) had better access to health care (OR=2.92, p=0.002).

CONCLUSION: Co-morbidities are associated with higher access to healthcare. This could be due to higher utilization of healthcare by patients with co-morbid conditions, older age and providers focusing more on treatment of diseases than prevention.

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Special Thanks to Chip Lambert

About GPA and ISPOR-UH Chapter

The Graduate Students and Alumni in Pharmacy Administration (GPA), founded in 2001, is an organization of the Students and Alumni of the Department of Clinical Sciences and Administration at University of Houston, College of Pharmacy. The aim of the GPA is to bring together the students and alumni of the pharmacy administration graduate program in order to engage in various academic, research, professional, and extra-curricular activities and projects.

Founded in 2002, the International Society for Pharmacoeconomics and Outcomes Research - University of Houston Student Chapter (ISPOR-UH) is dedicated:

- To provide an environment where students can share knowledge in Pharmacoeconomics and health outcome research;
- To represent students need and wants in regard to pharmacoeconomics and health outcome research;
- To promote interest and awareness about pharmacoeconomics and health outcome research to various disciplines across University of Houston;
- To increase student's knowledge about pharmacoeconomics and health outcome from a global prospective;
- To act as a resource for new students interested in pharmacoeconomics and health outcome research;
- To provide an opportunity for student chapter members to become familiar with the ISPOR as well as have representation in its affairs.

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Founded in 1946, the University of Houston College of Pharmacy combines the opportunities and experiences of the Texas Medical Center's world-class healthcare community with resources of the University of Houston, Texas' premier urban teaching and research university, to offer its students the best possible education. The UH College of Pharmacy aspires to foster a commitment to lifelong learning and an environment where students develop the knowledge, attitudes and skills consistent with the high standards of their profession and/or scientific field. The college is accredited by the Accreditation Council for Pharmacy Education and holds membership in the American Association of Colleges of Pharmacy.

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