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Background: The management of epilepsy among older adults is challenging given the high prevalence of multiple comorbidities, poly-pharmacy, limited health literacy, and poor adherence. Adhering to anti-epileptic drug regimen is essential to achieve the desirable outcomes; therefore, using the right measure to assess medication adherence is crucial.

Objectives: The aim of this study was to examine the association between medication possession ratio (MPR) and the Morisky Medication Adherence Scale-8 (MMAS-8) among a sample of older adults (> = 60 years of age) with different seizure disorders and on single antiepileptic drug regimens in two tertiary care hospitals in Riyadh, Saudi Arabia.

Methods: This study was a retrospective patient charts review in which patients, who are 60 years of age or above, with seizure disorders, and on single antiepileptic drug regimens were included in the first phase of the study to assess their MPRs of antiepileptic drugs throughout the last 12 months. The second phase consisted of a phone interviews of the same patients who were included in the first phase using the MMAS-8 to assess their self-reported adherence. Patient sociodemographics (age, gender, education, etc..) and comorbidities using Charlson Comorbidity Index (CCI) were collected.

Results: Out of the 100 older adults with epilepsy who were recruited in the first phase to assess their MPRs of antiepileptic drugs, 71 responded to the phone interviews to assess their self-reported adherence to their single antiepileptic drug regimens using the MMAS-8. Almost 48% of them were male and 52% were female. The association between patients' MPRs and MMAS-8 of antiepileptic drugs was not significant ($r = -0.02014$, $P = 0.867$).

Conclusions: Although the medication possession ratio (MPR) can be a reliable instrument to assess medication adherence among different patient population, this measure might not be efficient in the assessment of medication adherence among older adults especially those with seizure disorders in which monitoring their adherence to their antiepileptic drug regimens is essential to achieve favorable treatment outcomes.

864. Influence of Medication Regimen Complexity on Adherence: A Systematic Review

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Background: Having a high medication regimen complexity has been negatively associated to health outcomes, such as hospitalizations and poor quality of life. However, its influence on adherence has not been well established.

Objectives: To systematically review and summarize the evidence regarding the association between medication regimen complexity and adherence in any pharmacotherapy.

Methods: Articles were searched using MEDLINE, LILACS, Cochrane, CINAHL, PsycINFO and included studies references. Search terms included medication regimen complexity and medication adherence. Randomized clinical trials, cross-sectional, cohort or case-control studies published before March 2016 in English, Portuguese or Spanish languages were eligible if quantitatively examined the correlation between medication regimen complexity and medication adherence in patients of any age and sex, under any type of medication therapy. All type of instruments used to assess complexity and adherence were considered. Quality assessment was conducted independently using standard scales according of the study design.

Results: Fifty-four studies met the inclusion criteria: 37 cross-sectional and 17 cohort studies. Most of them (51) were conducted in outpatient setting. Most frequently, the studies were carried out with HIV-infected individuals (10) or patients with chronic conditions: diabetes mellitus (7), epilepsy (3) and hypertension (2). Forty-two studies used only one method to assess complexity, the most frequent ones were a complexity index (18 studies), such as Medication Regimen Complexity Index and Antiretroviral Regimen Complexity Index, and the number of medications (13 studies). Among the instruments used to measure adherence, the most frequent was self-report (29). Regimen complexity was associated with medication adherence in 36 studies. Most of them (29 studies) identified that participants with more complex regimens were less likely to adhere to medication therapy; seven studies found a direct correlation, so that more complex regimens were related with higher

adherence. The other studies found inconclusive results or no correlation between complexity and adherence.

Conclusions: Although there was variability in studies' conclusions regarding the correlation between medication regimen complexity and medication adherence, most of them showed a low to moderate-quality evidence that, regardless the type of pharmacotherapy, an increased regimen complexity reduces the probability of medication adherence.

865. Reproducibility of Adherence Studies in Large Healthcare Databases

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Background: Poor adherence to prescribed medication contributes to over 100 billion in avoidable hospitalization. Adherence can be operationally defined in many ways using data from large healthcare databases. Common measures include medication possession ratio (MPR) and proportion of days covered (PDC).

Objectives: To evaluate how closely published adherence studies using commercially available EHR and claims databases can be reproduced by other investigators.

Methods: We conducted a systematic literature search to identify applied studies focused on adherence as a characteristic or a risk factor. We restricted to studies conducted in 3 data sources, CPRD, MarketScan or UnitedHealth that were published between 01/01/2011 and 05/30/2016. Studies that used supplemental data linkage, years of data outside the range available with our licenses, or used methods outside of our scope (e.g. randomized trial, simulation, Markov models) were excluded. We reproduced identified studies based on the methods reported in the publications. If the publication or appendices contained insufficient detail on one or more key design/methodologic decisions necessary to extract an analytic cohort (e.g. timing of cohort entry, inclusion/exclusion criteria, algorithm to measure adherence), we applied varied decisions to try and reproduce the original findings.

Results: After applying exclusions, we identified 26 applied adherence papers implemented in the 3 licensed databases. Of these, 24 described adherence during follow up (MPR and PDC as continuous measure and/or categories, i.e. ≥ 0.80 threshold), 2 looked at the impact of adherence on an outcome. The team had to make assumptions about key design and operational parameters behind cohort extraction for 52% of the studies due to insufficient detail in reporting for the original papers. For 26% of studies, the team had to make assumptions about how adherence measures were calculated in the original paper. The median and interquartile range for the difference in continuous measures of MPR or PDC for original papers compared to reproductions was 3.2 (1.7–7.5), for categorical measures, the difference in proportion considered adherent was 9.3 (2.3–10.0).

Conclusions: Healthcare databases contain date/time stamped information that can inform our understanding of adherence, with some investigator imposed decisions and assumptions. Applied adherence papers using such data would benefit from greater transparency in reporting on methods used to extract analytic cohorts and measure adherence.

866. Adherence to Statin Therapy and the Use of Preventive Clinical Examinations: An Investigation Using Claims Database in Japan

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Background: The healthy adherer bias can arise when patients who adhere to preventive therapy are healthier or more likely to be engaged in a variety of healthy behaviors than their non-adherent counterparts. Brookhart et al. reported that patients who adhere to statin therapy were more likely to seek out preventive health services, even after adjusted by various covariates.

Objectives: To investigate whether the healthy adherer bias arises in pharmacoepidemiology study associated with statin use in Japanese healthcare setting, we examined the association between adherence to statin therapy and the use of preventive health services.