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# DRUG RELATED PROBLEMS AND DETERMINANTS IN GERIATRICS: CLINICAL PHARMACIST INTERVENTIONS

**Yohannes B[1], Kebede E[2], Fikadu D[1] and Getachew M[2]**

[1]Mekelle University, Ethiopia
[2]Jimma University, Ethiopia

**Background:** Pharmacotherapy is becoming complex, and drug related problems (DRPs) might be associated with increased health care costs and hospital admissions. Prolonged hospital stays, reduced quality of life, and increased morbidity or mortality are another consequences of DRPs. Age related physiologic changes, pharmacokinetic and pharmacodynamics alteration in drug handling, and multi- morbidity associated with poly pharmacy put geriatric patients at high risk for DRPs. Furthermore, premarketing drug trials often exclude geriatric patients and approved doses may not be appropriate for older adults.

**Objectives:** To identify drug related problems and determinants among geriatric patients admitted to medical and surgical wards of Jimma University Medical Center (JUMC); and to describe clinical pharmacist intervention for treatment optimization.

**Method & Materials:** A four-month prospective interventional study was conducted among geriatric patients admitted to JUMC medical and surgical wards from April to July 2017. A clinical pharmacists reviewed drug therapy of patients in the respective clinical wards and identified DRPs. Intervention provided during rounds, morning sessions and through discussion with individual prescriber. Data analyzed by using statistical software package; SPSS version 20.0. Descriptive statistics performed to determine the proportion of DRPs by its category. Bivariate and multivariate logistic regressions analysis performed to identify the determinants of DRPs. A $p<0.05$ is considered as significant.

**Results:** We included 200 older adults (age ≥ 60) in our study. Mean age was 67.3 (SD7.5), and 67.5% of participants were male. Participants had, on average, 2.20 (SD1.2) clinical conditions and took 3.9 (SD2.1) medications per patient. 81.5% had at least one DRP. The most common DRP category was "treatment effectiveness" related (47.6 %), and the most common class of drugs involved in the problem were cardiovascular agents (38.1%), followed by antibiotics (21%). For 780 medications reviewed, 380 DRPs were recognized, 466 causes identified and 670 interventions discussed. Prescriber acceptance rate was 91.7%. Polypharmacy (OR=4.350, p = 0.020) and number of clinical conditions (OR=1.588, p = 0.037) were associated with DRPs.

**Conclusion:** Prevalence of DRPs was high among geriatric inpatients admitted to medical and surgical wards. Involvement of clinical pharmacist in routine clinical ward practice and medication review decreases medication related problems in geriatric inpatients.

berhaney24@gmail.com