

**Prevalence of Polypharmacy and Factors Associated with it Among Saudi Older Adults – Results from the Saudi National Survey for Elderly Health (SNSEH)**

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**Abstract:** Background and objectives: The percentage of Saudi older adults (SOA) is increasing over time. With advanced age, the prevalence of chronic diseases and multiple disabilities are increasing. This leads to increase utilization of multiple medications. The objectives of this study were to describe medication utilization, determine the prevalence of polypharmacy (PP) and factors associated with it among SOA. Methods: This cross-sectional study was conducted among community-dwelling SOA aged  $\geq 60$  years old using the Saudi National Survey for Elderly Health (SNSEH). The survey was conducted between 2006 and 2007 by the Ministry of Health on a nationally representative sample of SOA. The data included demographics, socioeconomic and health information such as diseases and medications. Polypharmacy was defined as the concurrent use of medications from  $\geq 5$  therapeutic classes. A modified Poisson multivariable regression was used to study factors associated with PP controlling for confounders. All analyses were done using STATA 14. Results: The study included 2,946 SOA; 50.4% were males, 60.9% were 60-70 years old, and 69.6% were illiterate. The most common medications used among SOA were: Paracetamol (67%), joint pain medications and NSAIDs (50% each), anti-diabetic and multivitamins and minerals (47% each). PP was identified in (51.5%) of participants. The most medication associated with PP were: Paracetamol (79.9%), multivitamins and minerals (71.6%), steroid and DMARDs (70.1%), NSAIDs (66.4%), anti-diabetic and anti-hypertensive (61.3%). Higher risk of PP was associated with diabetes (RR: 1.863; 95% CI: 1.686-2.059), hypertension (RR: 1.829; 95% CI: 1.624-2.060), having pain (RR: 2.282; 95% CI: 1.918-2.713), urinary incontinence (RR: 1.389; 95% CI: 1.238-1.560; ref: no urinary incontinence) or suggestive depression (RR: 1.379; 95% CI: 1.259-1.512). Similarly, compared to low income (<2500 SAR), higher incomes were more likely to have PP. On the other hand, compared to the central region, southern and northern regions were less likely to have PP (RR = 0.741; 95% CI: 0.652-0.843 and RR: 0.736; 95% CI: 0.596-0.908, respectively). Severe cognitive impairment was associated with a lower risk of PP (RR: 0.708; 95% CI: 0.501-1.000). Conclusion: The prevalence of PP among a nationally representative SOA was very high, i.e., 51.5%. Higher risk of PP was associated with many factors such as region, income, diabetes, hypertension, musculoskeletal pain, urinary incontinence, and depression. PP leads to many negative implications such as drug interactions, combined side effects, hospitalization, and death. Therefore, raising the knowledge of health care providers on the consequences of PP and providing medication therapy management services may help decrease the negative consequences of PP and improve therapy outcomes.