Introduction: Potential inappropriate prescribing (PIP) is a major health problem affecting the elderly persons. And they are related to negative clinical outcomes.

Objectives: To determine the prevalence and factors associated with PIP in elderly patients at hospital discharge.

Methods: It was a cross-sectional study conducted at three hospitals, (Al-Watani Governmental Hospital, Rafedia Surgical Hospital, and An-Najah National University hospital) in the West Bank, Palestine, between August 2017 and January 2018. Data collection was completed by reviewing patients' medical records and interviewing them. PIP was identified using screening tool of older persons' prescriptions (STOPP) (STOPP) and screening tool to alert to right treatment (START) tool. And the data were analyzed using Statistical Package for the Social Sciences (SPSS) version 16.

Results: The study included 330 patients aged 60 years old and more with 171 (51.8%) of them were females. Patients were with a mean ± standard deviation (SD) of 3.13 ± 1.49 with hypertension (HTN) and diabetes mellitus (DM) as the most common identified co-morbidities with frequency of 250 (75.8%) and 168 (50.9%) respectively. Patients were prescribed 0 - 14 medications on discharge with a mean ± SD of 5.88 ± 2.69; and 23 (37.3%) patients of them were prescribed 4 – 6 medications. Aspirin, Atorvastatin, Bisoprolol, Furosemide were the most frequently prescribed medications with frequency of 228 (69.1%), 204 (61.8%), 146 (44.2%), 158 (57.9%), respectively. 242 (73.3%) of patients were identified to have at least one potentially inappropriate medications (PIM), the most frequent PIMs were medications with inappropriate indications 126 (38.1%); medications without indication and therapeutic duplication followed by proton pump inhibitors for peptic ulcer, Loop diuretics for HTN, Aspirin plus clopidogrel for stroke prevention or cardiac stent more than one year and long-acting sulonylureas for DM type 2 with frequency of 103 (31.2%), 55 (16.7%), 40 (12.1%), 52 (15.8%), respectively. All patients were with at least one PPO, the most frequent PPOs were pneumococcal and trivalent influenza vaccines with frequency of 329 (99.7%), angiotensin-converting-enzyme inhibitors (ACEIs) with systolic heart failure and/or documented coronary artery disease (CAD), statins therapy with vascular disease, and beta-blockers (BBs) with ischemic heart diseases (IHD) with frequency of 81 (24.5%), 37 (11.2%), and 29 (8.8%), respectively. Age and multiple diseases were associated with PIMs and PPOs while residency, polypharmacy, DM, and HTN were associated PIMs, as well as IHD and hospital stay were associated with PPOs (p < 0.05 for each).

Conclusion: The prevalence of PIMs and PPOs among elderly patients is very high. PIMs were associated with age, multiple diseases, residency, polypharmacy, DM, and HTN while PPOs were associated with age, multiple diseases, IHD, and hospital stay. Interventions such as current medical conditions and medications review by a clinical pharmacist, keeping up with currently updated STOPP/START criteria are essential to minimize inappropriate prescriptions and reduce the negative outcomes.