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## Research paper

# Patterns of use of medications, herbal products and nutritional supplements and polypharmacy associating factors in Palestinian geriatric patients



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## ABSTRACT

**Aims:** This study aimed to estimate the prevalence of polypharmacy, polyherbacy and nutritional supplement use and to determine the factors affecting polypharmacy in geriatric patients from Palestine. **Methods:** A prospective cross-sectional study of a group of hospitalised patients was carried out at Al-Wattani governmental hospital, Nablus, Palestine. This was a descriptive and comparative study that involved specially designed data collection forms. Some variables were collected by face-to-face interviews of a convenient sample of patients aged  $\geq 65$  years from May to November 2012. Participant demographics and information about the current use of prescribed medications, herbal products and nutritional supplements were collected. All collected data were analyzed using statistical package for social sciences (SPSS) version 15.0.

**Results:** Three hundred participants (mean age:  $73.4 \pm 7$  years) were interviewed. The prevalence of polypharmacy (patients who take  $\geq 5$  medications) at hospital discharge was 51%. Eighty participants (26.7%) reported taking two or more herbal products (polyherbacy). Thirty-six participants (12.1%) reported taking two or more vitamins/mineral supplements. Binary logistic regression analysis revealed that patients living with their family (OR = 4.06; 95% CI = 1.39–11.83;  $P = 0.01$ ), diabetes mellitus (OR = 2.67; 95% CI = 1.40–5.08;  $P = 0.003$ ), heart failure (OR = 2.57; 95% CI = 1.25–5.28;  $P = 0.01$ ), general weakness (OR = 3.82; 95% CI = 1.60–9.14;  $P = 0.003$ ), and joint pain (OR = 8.02; 95% CI = 1.88–34.17;  $P = 0.005$ ) were significantly associated with an increased risk of exposure to polypharmacy.

**Conclusions:** About half of elderly patients are exposed to polypharmacy at Al-Watani hospital. Also, a portion of geriatrics used herbal product and nutritional supplements. The factors that were associated with patient's exposure to polypharmacy were: living with family, diabetes mellitus, heart failure, general weakness, and joint pain. Interventions to reduce the high-level polypharmacy in the elderly during their stay in a government hospital in Palestine should focus more on patients with diabetes mellitus, heart failure, and joint pain.

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## 1. Introduction

The concurrent use of multiple medications, herbal products or nutritional supplements indicates a specific problem of pharmacological therapy in elderly patients [1,2]. Elderly people are the largest consumers of medications because most of them, up to 80%,

suffer from chronic diseases [3]. The rise in the number of medications, herbal products or nutritional supplements may cause a considerably increased risk of adverse effects, drug–drug/herbal or drug/herbal–disease interactions [4,5]. In addition to the risk of serious adverse reactions, economic consequences should also be considered [5–8].

Although there is no consensus on the definitions of ‘polypharmacy’ and ‘polyherbacy’, these terms have been defined as the concurrent use of many different drugs and herbal products [2,9]. Polypharmacy can also be defined as the excessive use of drugs; for

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