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# Adherence to medications and associated factors: A cross-sectional study among Palestinian hypertensive patients



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#### **KEYWORDS**

Adherence; Hypertension; Forgetfulness; Palestine **Abstract** *Objective:* To assess adherence of Palestinian hypertensive patients to therapy and to investigate the effect of a range of demographic and psychosocial variables on medication adherence.

*Methods*: A questionnaire-based, cross-sectional descriptive study was undertaken at a group of outpatient clinics of the Ministry of Health, in addition to a group of private clinics and pharmacies in the West Bank. Social and demographic variables and self-reported drug adherence (Morisky scale) were determined for each patient.

Results: Low adherence with medications was present in 244 (54.2%) of the patients. The multivariate logistic regression showed that younger age (<45 years), living in a village compared with a city, evaluating health status as very good, good or poor compared with excellent, forgetfulness, fear of getting used to medication, adverse effect, and dissatisfaction with treatment had a statistically significant association with lower levels of medication adherence (P < 0.05).

Conclusions: Poor adherence to medications was very common. The findings of this study may be used to identify the subset of population at risk of poor adherence who should be targeted for interventions to achieve better blood pressure control and hence prevent complications. This study should encourage the health policy makers in Palestine to implement strategies to reduce non-compliance, and thus contribute toward reducing national health care expenditures. Better patient education and communication with healthcare professionals could improve some factors that decrease adherence such as forgetfulness and dissatisfaction with treatment.

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#### 1. Introduction

The World Health Organization defines adherence as "the extent to which a person's behavior-taking medication, following a diet, and/or executing lifestyle changes corresponds with agreed recommendations from a health-care provider" [1]. Generally, adherence to a medical regimen is most likely to be a problem in chronic diseases such as diabetes, hypertension, coronary artery disease, osteoporosis, and asthma, and is responsible for suboptimal clinical outcomes, decreased quality of life, and increased expense to the health-care system [1-3]. Poor adherence to treatment of chronic diseases is a worldwide problem of striking magnitude. According to the World Health Organization adherence to long-term therapy for chronic illnesses in developed countries averages 50%. In developing countries, the rates are even lower [1].

Hypertension is a significant public health problem in many countries. It remains an important public health challenge and one of the most important risk factors for coronary heart disease, stroke, heart failure and end stage renal disease [4,5]. Lowering blood pressure by antihypertensive drugs reduces the risks of cardiovascular events, stroke, and total mortality [6,7]. Lack of compliance with blood pressure-lowering medication is a major reason for poor control of hypertension. Patients with high blood pressure may fail to take their medication because of the chronic nature of the disease and the absence of overt symptoms [8]. In Palestine, hypertension is among the leading causes of death: it is the eighth cause of death and is a risk factor for cardiovascular and cerebrovascular diseases which represent the first and second causes of death [9].

Factors that affect medication adherence are complex; low adherence was reported among younger individuals, men, and black persons. Other factors that were reported to negatively impact adherence to prescribed therapies include beliefs about illness and treatment, forgetfulness, side effects of medications, complexity of treatment regimens, lack of knowledge regarding hypertension and its treatment, financial difficulties, psychological factors, social support, quality of the relationship between patient and physician and poor quality of life [5,10–16].

Studies related to medication adherence are very limited in Palestine. Compared with other variables being considered in therapeutics, adherence to medications has long been given minor attention although it affects every aspect of medical care. This study appears to be the first to

investigate the rate of medication adherence and its associated factors in hypertensive patients from the West Bank. The objectives of this study are to measure the rate of medication adherence, to investigate the factors associated with this adherence and the reasons for poor adherence. This study could be helpful to health policy makers in Palestine to implement health education strategies to reduce poor adherence and thus to reduce complications of the disease and national health costs.

#### 2. Methods

#### 2.1. Patient selection

The study was a questionnaire-based cross-sectional descriptive study. It was conducted between September and December 2011. It included a simple random sample from patients visiting outpatient clinics of governmental primary healthcare centers in addition to a group of private clinics and pharmacies in the West Bank. Approval to perform the study was obtained from the Palestinian Ministry of Health (MOH) and the Institutional Review Board (IRB) committee at An-Najah National University. The study complied with the Declaration of Helsinki and did not endanger the well-being of the patients. Patients who met the following criteria were invited to participate in this study: (1) Patients  $\geq$  18 years; (2) Those who had been diagnosed with hypertension; and (3) Those who were on prescribed antihypertensive medications for at least one month. Patients who agreed to participate were explained the nature and the objectives of the study, and informed consent was formally obtained.

Since there was no available literature showing the prevalence of adherence among the Palestinian community in general, a 50% expected prevalence was used; minimum sample size was calculated to be 384, so 500 patients were asked to participate in the study.

#### 2.2. Data collection

The data collection tool was a questionnaire, designed-based on an extensive literature review of similar studies [2,5,17]. The questionnaire included information regarding patient demographics and clinical characteristics such as: sex, age, education, insurance, income, medical history, and co-morbidities. Patients were asked about their prescribed medication regimen, including the number of their antihypertensive drugs and other medications — if present — frequency per

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