



## Non-Adherence in the Hypertensive Patient: Can Nursing Play a Role in Assessing and Improving Compliance?

Jackie Jayasinghe, MN, RN-NP, CCN(C)

According to the Canadian Hypertension Society (Canadian Hypertension Education Program, 2008), hypertension remains a significant health problem that is projected to become a greater global burden in the next 20 years. Internationally, the estimated total number of adults with hypertension in 2000 was 972 million; 333 million in economically developed countries. Current trends suggest that the number of adults with hypertension will increase by about 60% to a total of 1.56 billion by 2025.

Despite the availability of effective treatment, more than half of patients treated for hypertension drop out of care entirely within a year of diagnosis. Fifty per cent of patients who remain under medical supervision take only 80% of their prescribed medications. As a result, 75% of patients with a diagnosis of hypertension do not achieve optimum blood pressure control due to poor adherence to anti-hypertensive treatment.

Thirty to 50% of prescriptions fail to produce the desired therapeutic results in patients with chronic medical conditions due to non-adherence (World Health Organization, 2003). Non-adherence causes unnecessary hospital admissions, resulting in a \$25-billion burden on the health care system annually in the United States (Berg, Dischler, Wagner, Raia, & Palmer-Shevlin, 1993). Within one year, approximately 50% of patients discontinue prescription medicines with an additional 35% discontinuing treatment within two years (National Council on Patient Information and Education, 1997).

Several Canadian studies have examined non-adherence. Gregoire, Moisan, Guibert, Ciampi, and Milot (2006) examined noncompliance among those

Nurses represent a formidable force in improving adherence and care outcomes by understanding the dynamics of compliance, and employing techniques in assessing and monitoring the problems of non-adherence. Nurses are well positioned to effectively use sustained strategies to improve adherence, thereby decreasing the global burden of hypertension. Using a case study approach, this author explores the dynamics of adherence and reviews techniques for assessing, monitoring, and improving compliance in hypertension therapy.

**Address for correspondence:** Jackie Jayasinghe, Specialty Nurse Practitioner, Hypertension Clinic, Capital District Health Authority, 4129 Dickson Building, 5820 University Ave., Halifax, NS B3H 1V8. Phone: (902) 473-4309, E-mail: [Jacquelyn.Jayasinghe@cdha.nshealth.ca](mailto:Jacquelyn.Jayasinghe@cdha.nshealth.ca)

who were prescribed antihypertensive therapy. Approximately 23% reported noncompliance with their prescribed medications. Noncompliance was significantly associated with the belief that hypertension is not a risk factor for cardiovascular diseases. Another Canadian study by Perreault et al. (2005) examining persistence with treatment in newly treated middle-aged patients with hypertension revealed that persistence with antihypertensive therapy fell to 75% in the first six months and continued to decline over the next three years to 55%.

Adherence is defined as the collaborative involvement of patients working together with clinicians in planning and implementing a treatment

regimen to produce a desired therapeutic result. Compliance refers to the extent to which patients' behaviours coincide with health care professionals' medical and health advice (e.g., in terms of taking medication, following changes in lifestyle, engaging in health-protective behaviour) (Patel & Taylor, 2002). The term adherence is preferred because "compliance" suggests that patients are passively following health care providers' treatment plans rather than actively participating through collaboration.

A review of the literature revealed factors that contribute to adherence, including number and cost of medications, adverse effects of medications and sociodemographic characteristics (age, race, education, marital status and gender) (Elliott, 2003; Patel & Taylor, 2002; Ren, Kazis, Lee, Zhang, & Miller, 2002). More recent studies have begun to focus on other aspects of adherence such as health care provider characteristics, proactive decision-making by patient, patients' perceptions of health beliefs and the degree of behavioural change required (Elliott, 2003; Patel & Taylor, 2002; Ren et al., 2002; Ross, Walker, & MacLeod, 2004).

Male or older physicians were associated with decreased adherence among patients. The reasons for this are unclear, but further investigation into treatment and communication styles between older and younger doctors in dealing with patients are warranted. Findings have also indicated that nurse practitioners and physician assistants tend to spend more time with patients and, therefore, have patients who are more compliant than physicians. Patients who were proactive in their treatment decisions had increased adherence (Ren et al., 2002). The greater the degree of behavioural change required resulted in decreased adherence (Patel & Taylor, 2002).

A cross-sectional study of 324 patients from four chronic illness groups (asthma, renal, cardiac and oncology) to quantify the relationship between patients' personal beliefs about the necessity of their prescribed medication versus their concerns about taking it revealed considerable variation in reported adherence and beliefs about medicines within and between illness groups (Horne & Weinman, 1999). Higher necessity scores correlated with higher reported adherence and higher concerns correlated with lower reported adherence. Medication beliefs were more powerful predictors of reported adherence than clinical (type of illness and number of prescribed medicines) and sociodemographic factors (age, gender, and educational experience). Horne and Weinman (1999) maintain that these findings are consistent with the hypothesis that many patients

engage in an implicit cost-benefit analysis in which beliefs about the necessity of their medication are weighed against concerns about the potential adverse effects of taking it and that these beliefs are related to medication adherence.

Nursing can play a key role in assessing adherence. This can be done using direct or indirect methods. Examples of direct methods are asking patients if they have been taking their medication regularly, measuring blood levels (e.g., monitor thiazide diuretics with potassium and uric acid level), and using direct observed therapy. Indirect methods include calling the patient's pharmacy, assessing the patient's clinical response (e.g., no change in blood pressure), using electronic medication monitors and measuring of physiologic markers (e.g., heart rate in patients taking beta blockers).

The Canadian Hypertension Education Program (CHEP) (2008) recommendations for improving adherence include teaching patients to take their pills on a regular schedule associated with a routine daily activity, simplifying medication regimens using long-acting, once-daily dosing, using fixed-dose combination pills, and encouraging unit-of-use packaging (e.g., blister-pak). The CHEP also suggests that we assist patients to get more involved in treatment by educating patients and families about their disease/treatment regimens verbally and in writing. Encourage greater patient responsibility/autonomy and regular monitoring of their blood pressure. Management of the hypertensive patient can also be improved by assessing for adherence to non-pharmacological and pharmacological therapy at every visit, encouraging adherence to therapy through telephone contact support, particularly over the first three months of therapy, and coordinating with work-site health care givers, if available, to improve hypertension management and monitoring (CHEP, 2008).

The following examples from practice will help to illustrate factors that contribute to non-adherence. Strategies for addressing these factors are also included.

**Case #1:** Mary is a 56-year-old female with uncontrolled hypertension on four anti-hypertensive medications, who also has a history of severe osteoporosis. On checking with her pharmacy regarding clarification of her medications, it was discovered that she had not had several medications filled. Mary's concerns regarding her medications were greater than her perceived necessity to take them. Mary believed this because she had a fear of becoming lightheaded and falling with a potential for fracture as she had severe osteoporosis. Monitoring and managing

Mary's situation involved using low-dose anti-hypertensive medication and titrating very slowly according to Mary's side effects, paying particular attention to lightheadedness and postural drop in blood pressure. Providing ongoing support through health care provider-based telephone contact was also beneficial in the monitoring and management of Mary's situation.

**Case #2:** Joe is a 48-year-old male with severe hypertension on five anti-hypertensive medications. All investigations for secondary causes of hypertension are negative. Despite having five medication prescriptions for hypertension, his blood pressure is still elevated at 170/120. When discussing medication adherence, Joe insists that he is taking all of his prescribed medication on a regular basis. When two of his prescribed medications were administered in clinic, his blood pressure reduced to 130/80 in three hours.

Joe is currently off work due to his hypertension. Monitoring and managing Joe's situation involved exploring his health beliefs regarding his hypertension and its management. Obviously, Joe did not believe in the necessity of taking his blood pressure medication. His reasons for believing this were not disclosed. However, it is suspected that his reasons for non-adherence may have been economically related. Education regarding the long-term impact of hypertension was reviewed with Joe. Unfortunately, his blood pressure remains uncontrolled.

**Case #3:** Susie is a 26-year-old woman with severe hypertension on four medications including a beta-blocker. Her heart rate is still poorly controlled with a

pulse rate of 100. Investigations for secondary causes revealed right renal nephropathy exacerbating her hypertension. She was gradually weaned off her prescribed medications with no change in her blood pressure. Susie wanted her right kidney removed and did not take her blood pressure medication. She believed there was more benefit to her health to not take the medications, as she thought her kidney would be removed more quickly if her blood pressure remained uncontrolled.

Monitoring and management of Susie's situation involved explaining to her that her kidney could not be removed with her blood pressure so high. Her medications were then re-introduced slowly and when her blood pressure was at a more acceptable level, she proceeded to have a nephrectomy. Currently, Susie's blood pressure is well controlled on two medications.

There appears to be no magic recipe for improving patient adherence. Patients' reasons for non-adherence are varied and individual. It is through exploring and understanding the individual patient's needs and health perceptions that adherence can be successfully addressed. Of course, adherence will not be attained in every situation.

Nursing is ideally situated to have a positive impact on improving patient adherence, as nurses are able to spend more time with patients, allowing more accurate assessment of patient's health perceptions. Education and ongoing support such as telephone contact are two key strategies to promote adherence. Ideally, collaborative relationships between patients and health care providers will result in improved adherence, thus making anti-hypertensive therapies much more cost-effective. ♥

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