CROSS-CULTURAL VALIDATION OF THE HILL-BONE COMPLIANCE TO HIGH BLOOD PRESSURE THERAPY SCALE IN A SOUTH AFRICAN, PRIMARY HEALTHCARE SETTING

Estelle Victoria Lambert, MS, PhD; Krisela Steyn, MSc, MD, NED; Stacy Stender, BSc; Nicholas Everage, BSc; Jean M. Fourie, BA; Martha Hill, PhD

INTRODUCTION

Effective treatment of hypertension reduces mortality and morbidity related to the end-organ damage.1,2 Despite this fact, control of hypertension has rarely been achieved in most people with hypertension, even by the most sophisticated healthcare services. The cause of this failure to achieve adequate blood pressure control in patients attending health services is often attributed to patients’ lack of compliance or adherence to prescribed hypertension treatment. The degree of compliance with medication regimes averages 50%, while compliance with recommended lifestyle modifications has been found to be as low as 10%.3,4 Complex factors related to the patient, the healthcare provider, the healthcare system and the nature and availability of services all contribute to the levels of compliance observed in a given setting.5,6

For a true understanding of the determinants of compliance to prescribed hypertension management, studies of all these factors are necessary. To date most studies have focused on compliance issues related to patient behavior. Haynes et al7 emphasized that one of the major impediments to improving compliance is the difficulty experienced in measuring compliance. A systematic review of studies on compliance suggests that asking nonresponders about the degree of compliance to treatment and pill counts will only identify ≈50% with low levels of compliance.7 Other means of measuring compliance can be costly and include measuring plasma drug levels or using electronic equipment to ascertain the number of times that drug containers have been opened in a given period of time. Most of these measures are impractical for usual clinical practice or for large, community-based studies. Thus, estimation of compliance to hypertension treatment in these settings necessarily reverts to questioning the patient or, at best, using validated instruments that elicit patients’ reported compliance-related activities.

One such questionnaire is the Hill-Bone Compliance to High Blood Pressure Therapy Scale. (HB Comp Scale).4,8 This scale was developed, in part, as a response to earlier instruments that measured patient’s self reported compliance.7,8 Morisky et al9 introduced a four-item medication compliance scale for hypertension that consisted of questions focused on forgetting or being careless in taking blood pressure pills or failing to take medication because patients were feeling either well or sick. Although this instrument demonstrated reasonable internal consistency and construct validity, it was later extended by Shea et al,10 and a fifth question, “Do you ever miss taking your blood pressure medication for any reason?” was incorporated. The internal consistency of this revised scale was

From the MRC Chronic Diseases of Lifestyle Unit, Medical Research Council of South Africa, Tygerberg (KS, JF), UCT/MRC Research Unit for Exercise Science and Sports Medicine, Department of Human Biology, Faculty of Health Sciences, University of Cape Town (EL); South Africa; School of Nursing; Johns Hopkins University; Baltimore, Maryland, USA (NE, MH, SS).

Address correspondence and reprint requests to Estelle V. Lambert; c/o MRC Chronic Diseases of Lifestyle Unit; Medical Research Council of South Africa; PO Box 19070; Tygerberg, SOUTH AFRICA 7505; 27-21-6504571; 27-21-6867530 (fax); vlambert@sports.uct.ac.za

OBJECTIVES: Hypertension is prevalent, under-diagnosed, and inadequately treated in Black South Africans. However, few studies have addressed barriers to hypertension care and control in this community. The aim of this study was to validate the Hill-Bone Compliance to High Blood Pressure Therapy Scale (HB Comp Scale) for use in a South African primary healthcare setting. This instrument consists of three subscales, medications-compliance, appointment making, and salt intake.

METHODS: A demographic questionnaire and the HB scale were translated into the first language of the subjects and then back-translated into English. Hypertensive patients (N = 98) were recruited from primary healthcare clinics in Cape Town. Blood pressure was measured with an Omron electronic blood pressure manometer, after 5 min of seated rest. Item-analysis was conducted to determine internal consistency of the HB Comp Scale; Spearman rank order correlations were used to assess the relationship between compliance scores and blood pressure.

RESULTS: A modified scale consisting of only 10 items demonstrated reasonable internal consistency (item-total correlations all > .31, and a standardized Cronbach α of 0.79), with an average interitem correlation of .26. In addition, the modified scale had significant predictive validity in that noncompliance predicted higher diastolic blood pressures (ρ = .21, P < .05) and medication noncompliance tended to predict higher systolic blood pressures (ρ = .20, P < .06). Appointment-making and dietary salt-intake subscales were not internally consistent.

CONCLUSIONS: We demonstrated criterion validity and internal consistency for a modified Hill-Bone Compliance Scale, in Black, urban, hypertensive, South African patients. Results compare favorably with those from an urban African-American setting (standardized Cronbach α = .74–.84). (Ethn Dis. 2006;16:286–291)

KEY WORDS: High Blood Pressure, Compliance, BP Treatment, Compliance

286 Ethnicity & Disease, Volume 16, Winter 2006