### Introduction

According to some recent studies, African natives seem to have higher blood pressure (BP) values and lower medication adherence rates than Caucasian individuals. On the other hand, beliefs about medication and perceptions about hypertension (HT) seem to have an impact on medication adherence, which is a major determinant of BP control. Nevertheless, there is no scientific consensus about the potential effect of beliefs and perceptions on BP control, neither on its racial disparities.

### Aims:

To explore the impact of medication beliefs and illness perceptions on BP control and medication adherence.

### Methods

**Participants**

Cross-sectional study with Portuguese natives and African migrants from Lisbon's Region Primary Health Care Centers. Hypertensive medicated subjects aged between 40-80 years were randomly selected.

**Data collection**

Face-to-face interviews were conducted between September 2010 and March 2011, regarding sociodemographic and clinical variables, and the beliefs about medicines (BMQ) and the Revised Illness Perception (IPQ-R) questionnaires were applied.

**Statistical analysis**

Principal Component Analysis (PCA) was used to explore associations between BMQ dimensions, IPQ-R dimensions, BP values, Adherence and sociodemographic variables.

### Variables

- **Mean Arterial Pressure (MAP):** Average values of 3 BP measurements taken during the interview, and the following formula: 
  \[ \text{MAP} = \text{DBP} + \frac{1}{3} \left( \text{SBP} - \text{DBP} \right) \]
  Uncontrolled BP: ≥140/90 mmHg

- **Adherence:**
  - Sum of “yes” responses at seven questions of the Portuguese version of the Morisky self-report scale.
  - Adherent was defined by score=0.
  - Non-adherent was defined by scores between 1 and 7.

- **BMQ dimensions:**
  - General BMQ: general harm, general overuse.
  - Specific BMQ: specific necessity, specific concerns.
  - Likert scales between 1 (completely disagree) and 5 (completely agree).
  - Scores were obtained from the sum of all items of the scales (varying between 5 and 25).

- **IPQ-R dimensions:**
  - Time, cyclical timeline, consequences, personal control, treatment control, emotional representations.
  - Likert scales between 1 (completely disagree) and 5 (completely agree).
  - Scores were obtained from the average of all items of the scales (varying between 1 and 5).

### Results

#### Sociodemographic characteristics

- Of the 121 participants, 70.2% were natives and 53.7% were women, with a mean age of 60.4±10 years.
- Medication adherence was verified in 52.1% and BP control in 72.7%.
- MAP was 102.7±13.8 mmHg, mean Systolic Blood Pressure (SBP), 138.2±20.1 mmHg, and mean Diastolic Blood Pressure (DBP), 84.9±12.7 mmHg.

#### Bivariate Analysis

- **Africans** were younger (p<0.01) and had similar BP values compared to Portuguese natives.
- **Subjects with ≤ 64 years old** had fewer perceptions about chronicity of HT, more perceptions about personal control of HT and less necessity to take anti-hypertensive medication (all p<0.05).
- **Women** presented less beliefs about medication overuse than men (p<0.05).
- **Patients with more than one prescribed medicine** had more beliefs on concerns about anti-hypertensives (aHT) and more perceptions about consequences of HT (all p<0.05).
- **Diabetic subjects** had more beliefs on concerns about aHT, had more beliefs on harm of general medications, relatively to non-diabetic participants (both p<0.05).

#### Results of PCA

- **General BMQ** was associated with adherence, ethnicity and education years.
- **Specific BMQ** was associated with IPQ-R and age.
  - **Specific necessity** was associated with number of aHT and age.
- **Adherence** was associated with specific concerns, general harm, general overuse, education years and ethnicity.
- **MAP** and BP values weren’t associated with BMQ, IPQ-R or other variables.

### Discussion and Conclusions

This study confirms the impact of attitudes towards medicines in general on medication adherence, but find no effect on BP values. Ethnicity and education seem to be related to medication adherence. Plus, age, sex, ethnicity, number of aHT, and the presence of diabetes were related factors to beliefs and perceptions. These results must be confirmed with larger samples. There is a need to understand how wrong attitudes can be demystified in order to develop interventions to improve medication adherence and BP control, specially in specific populations.

### References


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