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Adherence to antihypertensive treatment among African migrants and Portuguese natives: results from a primary care-based cohort study in Lisbon, Portugal

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BACKGROUND

Hypertension is a major public health problem

- **One in three** adults worldwide has high blood pressure (BP) (who, 2012)
- Affects more than **50% of the Portuguese population** above 45 years (Macedo, 2005)
- 60-80% of medicated hypertensive patients **do not achieve normal BP levels** (Mant, 2006)
- **Nonadherence** is a significant, often unrecognized, **risk factor** that contributes to **inadequate control of BP** (Morgado, 2012)

BACKGROUND

Medication Adherence

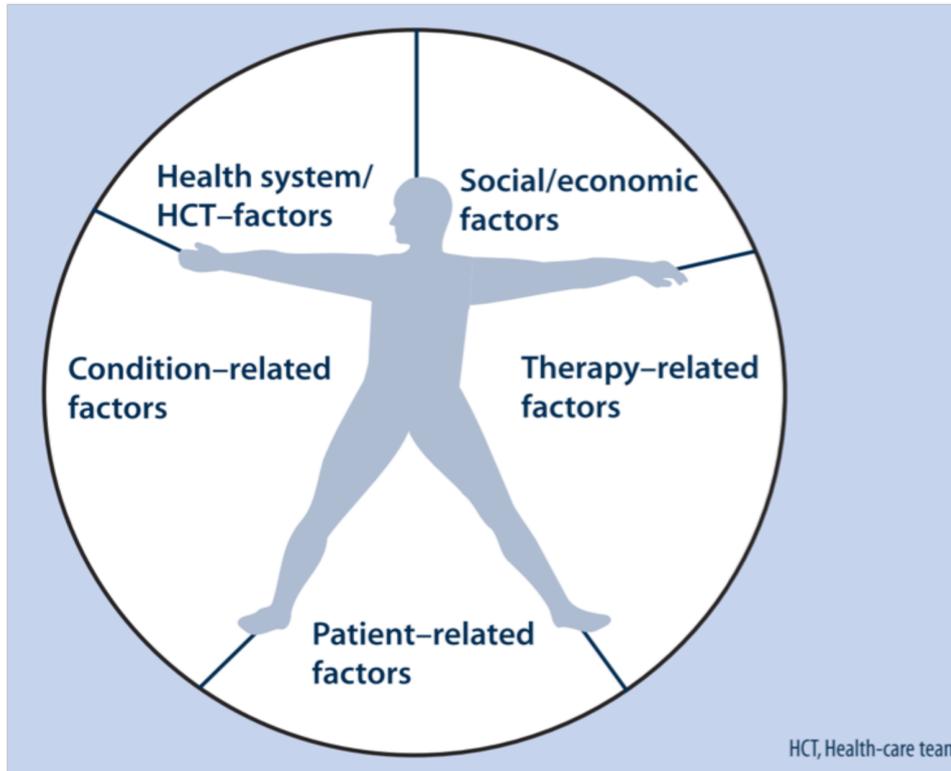


Figure 1. The five dimensions of adherence¹

HYPERTENSIVE IMMIGRANTS
Higher risk of non-adherence?

- Social integration
- Migration phenomenon
- Self-designated race/ethnicity

¹ Adherence to Long Term Therapies: Evidence For Action. Geneva: World Health Organization, 2003.

OBJECTIVES

This study aims to answer the following questions:

1. Are there differences in patient adherence to antihypertensive medication between African migrants and Portuguese natives?
2. Which are the associated factors?

METHODS – POPULATION AND DATA COLLECTION

- Primary Care Health Centers of Lisbon and Tagus Valley Health Region
- Medicated hypertensive patients
- Aged ≥ 40 years-old and ≤ 80 years-old
- Natives : Migrants from Portuguese speaking African countries (1:1)
(Angola, Cape Verde, Guinea-Bissau, Mozambique and São Tomé and Príncipe)



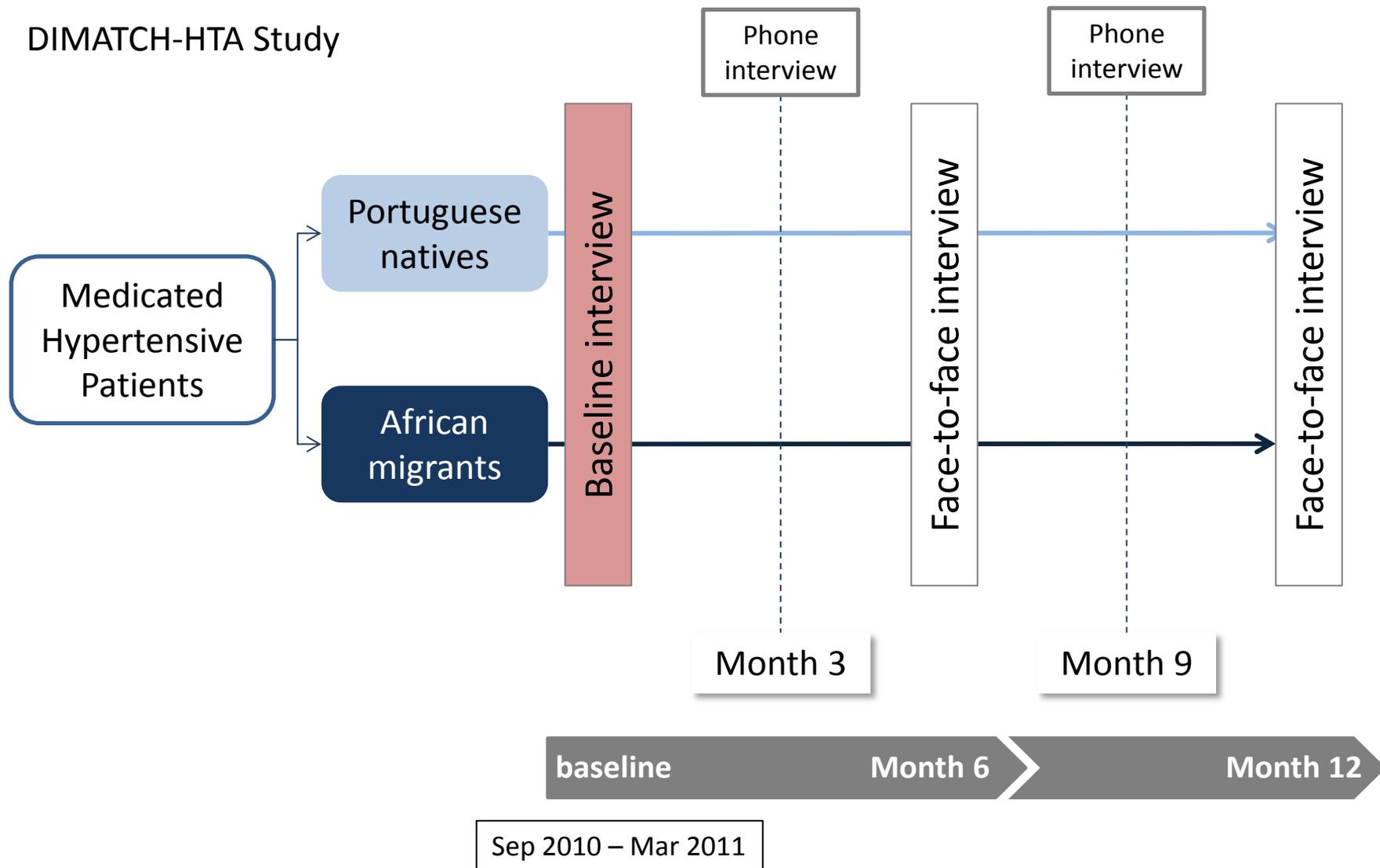
Random sample of
787 subjects

Data collection (face-to-face interviews)

- Demographic characteristics
- Disease-related variables
- Self-reported adherence to aHT drugs
- BP measurements

STUDY DESIGN

DIMATCH-HTA Study



ADHERENCE

Intentional nonadherence - all patients who answered “yes” to at least one question from 3 to 7.

1. did you ever forget to take your blood pressure medication?
2. are you careless at times about taking your medications?
3. have you ever stopped taking your high blood pressure medication by your initiative because you felt better?
4. have you ever stopped taking your high blood pressure by your initiative because you felt worse?
5. have you increased the dose of your high blood pressure medication by your initiative because you felt worse?
6. have you ever stopped taking your high blood pressure medication because you run out of blood pressure medication?
7. did you ever stop taking your high blood pressure medication for any other reason besides doctors indication?

STATISTICAL ANALYSIS

1. To compare the proportion of non-adherents between the two groups, assuming adherence as a dichotomized variable ($\alpha=0.05$).

→ *Bivariate Analysis*

STATISTICAL ANALYSIS

2. Binary Logistic Regression Model

→ To assess baseline factors associated with medication adherence, for each group.

Patients-related factors

- Age
- Sex
- Education
- Strategies for remembering to take the medication

Condition-related factors

- Hypertension duration
- Comorbidities
- BP control

Social/economic factors

- Number of people with whom the patient lives
- Health insurance
- Having help to control hypertension
- Financial difficulties in buying the medication

Therapy related factors

- Number of medicines at baseline
- Number of aHT medicines at baseline
- Adverse drug reaction
- Number of years under antihypertensive medication (aHT)

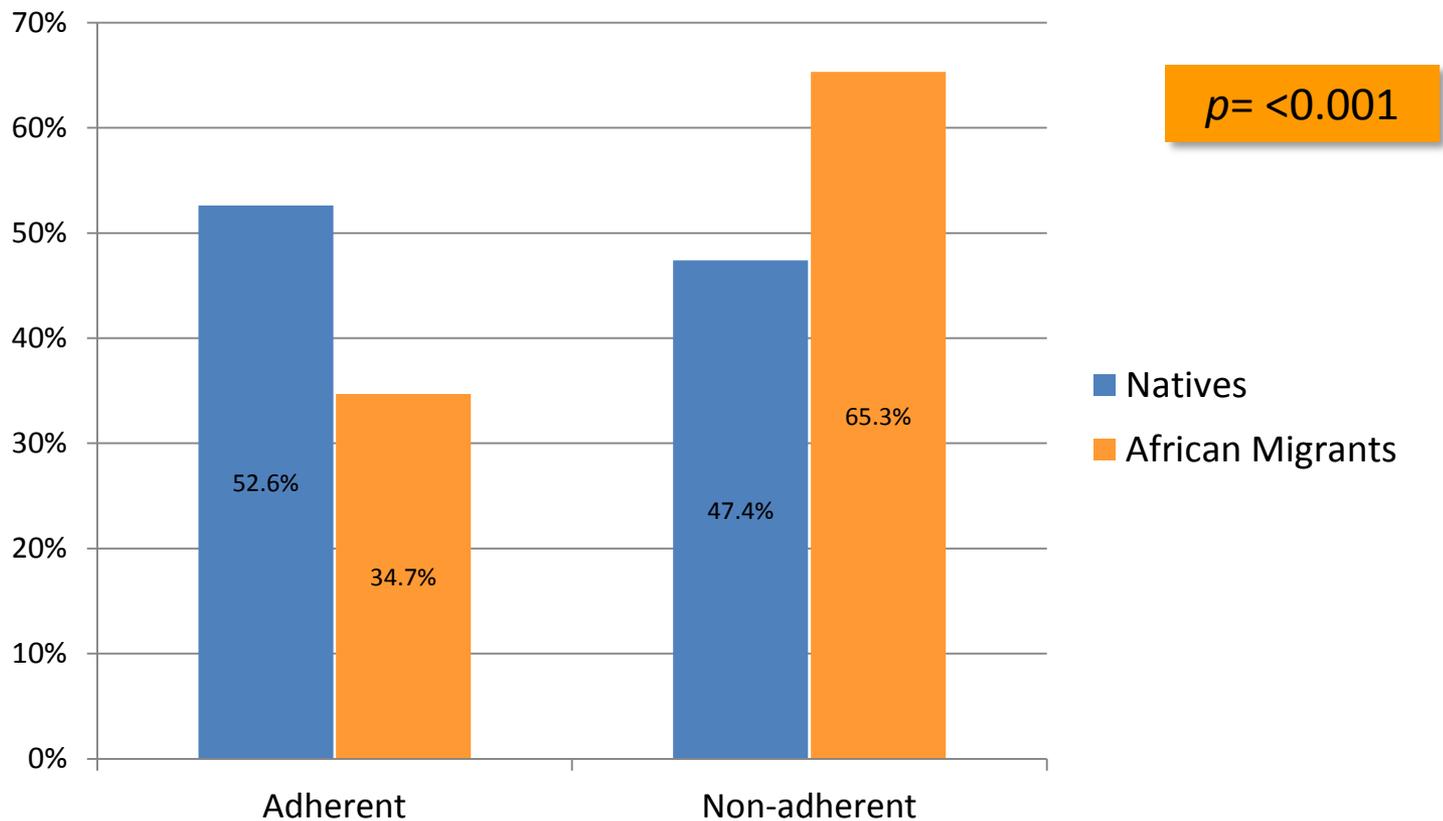
RESULTS - PARTICIPANTS CHARACTERIZATION

Variable	Natives (n= 449)	African migrants (n= 338)	Significant differences (Compared with African migrants...)	P
Age, years (mean ± SD)	64.1±9.1	56.8±10.1	<i>Natives are 7.3 yrs older</i>	<0.001
Sex, % men	48.8	33.4	More 15,4% of native men	<0.001*
Education, yrs (mean±SD)	6.76±4.1	6.46±4.5	-	0.27
Hypertension duration, yrs (mean±SD)	13.91±10.9	12.49±10.9	-	0.04
Number of aHT drug classes (mean±SD)	1.71±0.9	1.79±0.9	-	0.27
Number of baseline drug classes (mean±SD)	4.86±2.7	4.52±2.9	More 0.34 drug classes than African migrants	0.014
Diabetes, %	24.7	26.4	-	0.57*
Check blood pressure regularly, %	49.8	38.5	More 11.3% of natives that measure BP regularly	0.002*
Systolic BP, mmHg (mean±SD)	141.10±20.3	141.4±23.5	-	0.76
Diastolic BP, mmHg (mean ±SD)	83.70±11.8	88.34±13.15	Natives have a mean diastolic BP 4.6 mmHg lower	<0.001
BP control, %	47.1	45.4	-	0.64*

p, p-value for Mann-Whitney test, except * for the chi-square test

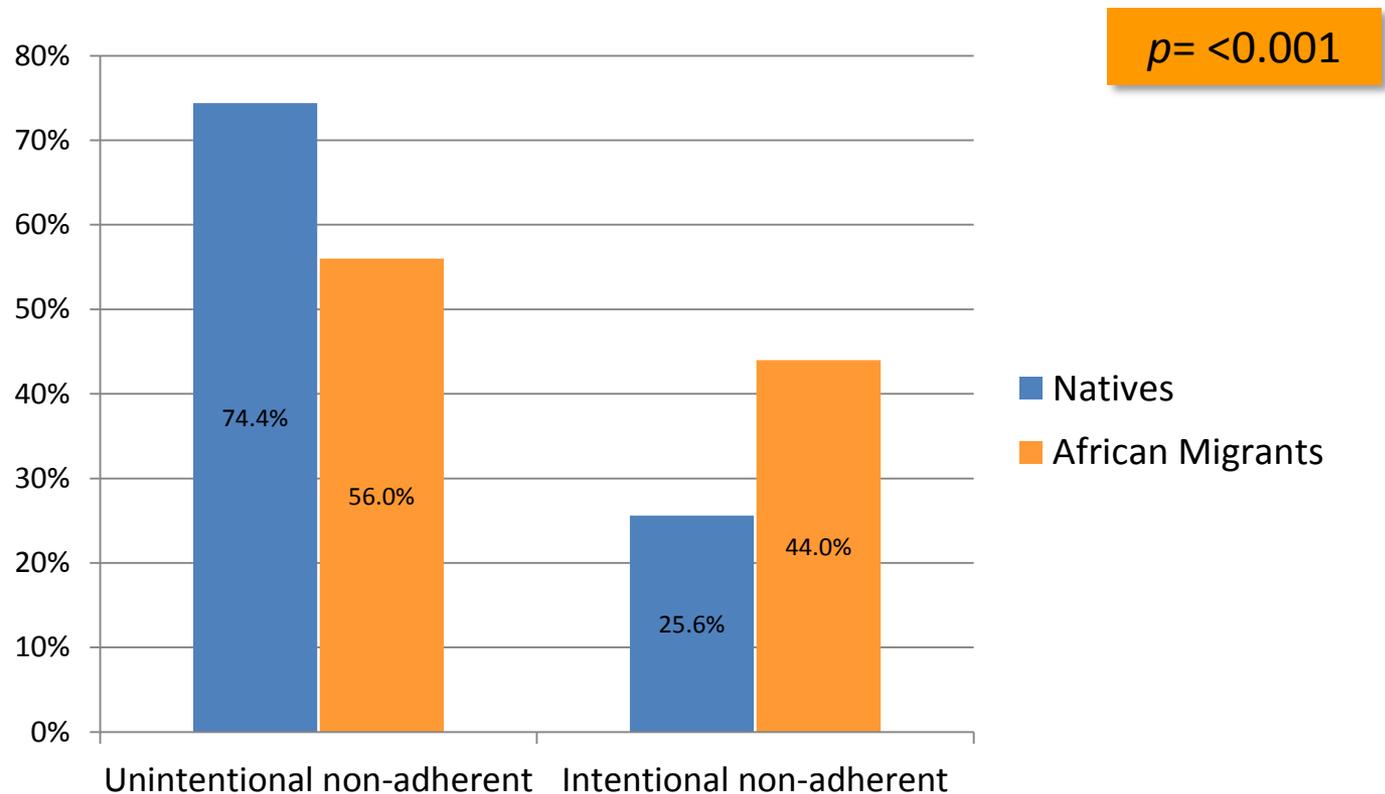
RESULTS - ADHERENCE TO ANTIHYPERTENSIVE MEDICATION

→ Proportion of adherents and non-adherents between the two groups



RESULTS - ADHERENCE TO ANTIHYPERTENSIVE MEDICATION

→ Proportion of unintentional and intentional non-adherents between the two groups



RESULTS – FACTORS ASSOCIATED WITH ADHERENCE

	Variable	OR	CI 95%	p
Portuguese natives	Female sex	1.60	(1.01-2.55)	0.05
	Main Occupation			
	Employed	1.00		0.03
	Unemployed	0.45	(0.18 - 1.14)	0.09
	Retired	1.36	(0.82 - 2.25)	0.23
	Other situation	0.35	(0.08 - 1.53)	0.16
	Financial difficulties in buying the medication			
	Not difficult	1.00		0.04
	Somewhat difficult	0.65	(0.33 – 1.29)	0.22
	Very difficult	0.41	(0.20 – 0.84)	0.02
African migrants	Have help of someone to control hypertension	0.18	(0.05 – 0.62)	0.01
	Check BP regularly	2.09	(1.22 – 3.61)	0.01

OR, odds ratio estimation by logistic regression analysis; CI, confidence interval

STRENGTHS AND WEAKNESSES

- Large and probabilistic sample study – Immigrant Cohort
- Use of validated measure to assess medication adherence

- Adherence was measured only by **self-report**:
 - **Overestimation** of adherence
 - **Social desirability** bias

- Patients who **agreed to participate** may be **more likely to be adherent** than those who **refused to participate**.
 - **Underestimation** of the true **impact of non-adherence** on outcome

CONCLUSIONS

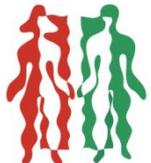
- **African migrants** seemed to be less **adherent to medication** and **more intentional non-adherent** than natives.
- Factors associated with adherence were **different between the two groups**:
 - Natives**: sex and have financial difficulties in buying the medication
 - African migrants**: Have help of someone to control hypertension and check BP regularly
- In other **studies sex, race and financial difficulties** where also related to antihypertensive medication adherence.
- Future analysis should explore and elucidate these factors

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Thank you!

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