



# Hypertension: comparison of self-reported information and objective measures from the first Portuguese National Health Examination Survey (INSEF)

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## INTRODUCTION

Self-reported hypertension (HTN) is often used in epidemiological studies, however its validity is often questioned due to report bias.

Undiagnosed disease and misunderstanding of medical terms used in questionnaire are major sources of measurement error associated with self-report (1). HTN is often asymptomatic, particularly at earlier stages of the disease, adding extra complexity to the use of self-reported information.

This study aims to compare self-reported and examination-based HTN prevalence in Portugal and to identify factors associated with measurement error in self-report.

## METHODS

**Study design:** Portuguese National Health Examination Survey (INSEF) is a cross-sectional prevalence study.

**Target population:** individuals aged between 25 and 74 years old, living in Portugal for more than 12 months, non-institutionalized and able to follow an interview in Portuguese.

**Sample:** two-stage stratified cluster sampling, n=4911.

**Fieldwork:** February 2015 – December 2015.

The survey combines blood pressure measurement performed according to the European Health Examination Survey procedures (2), blood collection and a general health interview.

**Definitions:** **Self-reported prevalence** of HTN was defined as the proportion of participants who reported medical diagnosis of HTN.

**Examination-based prevalence** of HTN was defined as the proportion of participants whose systolic blood pressure was at least 140 mmHg or diastolic blood pressure was at least 90 mmHg or who reported taking prescribed antihypertensive medication in the 2 weeks before the interview among all the survey participants.

**Statistical analysis:** Self-reported and examination-based prevalence of HTN were estimated stratified by sex, age, region, education, income and general practitioner (GP) visit in the previous year. Logistic regression was used to estimate odds ratios (OR) of incorrect HTN self-report (any type of misclassification considering examination-based data as the gold standard).

## RESULTS

Examination-based prevalence of HTN was 36.0% [CI<sub>95%</sub>:34.3-37.7] and self-reported prevalence was 25.7% [CI<sub>95%</sub>:23.9-27.5].

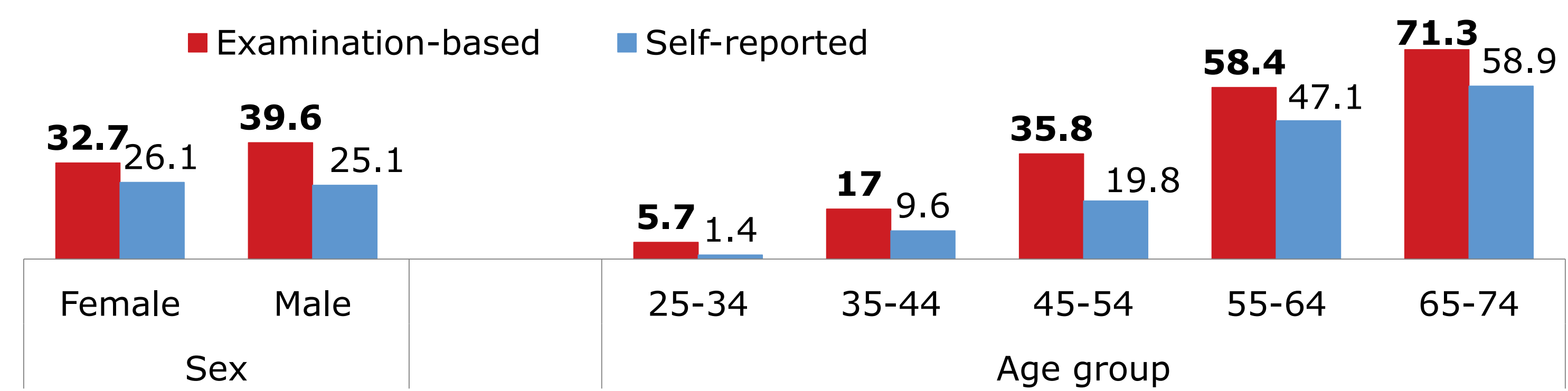


Figure 1. Prevalence of HTN by sex and age group

Self-reported HTN prevalence in male was 14.5 percentage points (pp) lower than the examination-based. In female, the self-reported prevalence differ from the examination-based by 6.6pp.

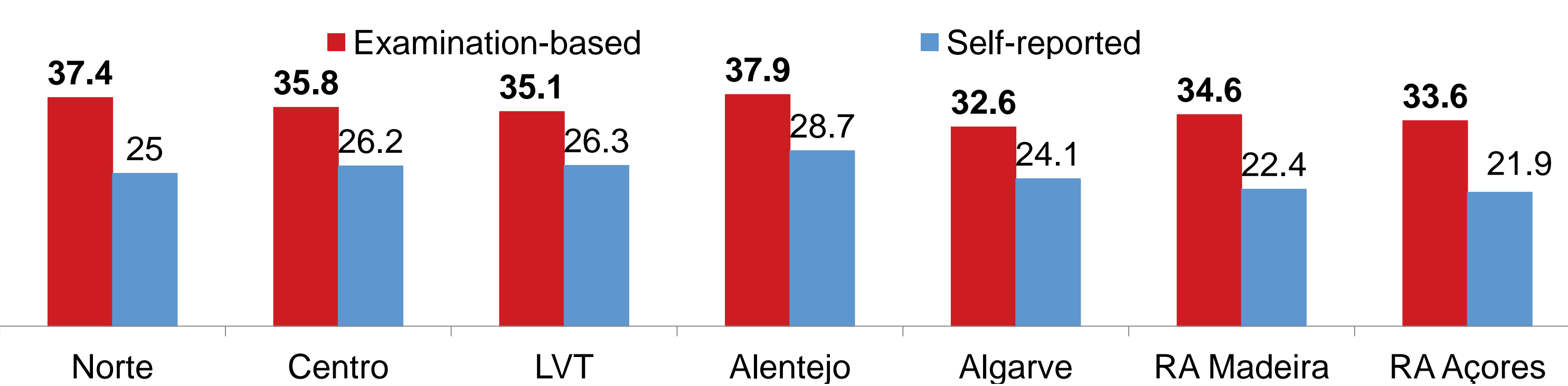


Figure 2. Prevalence of HTN by region

The difference between self-reported and examination-based HTN prevalence varied from 8.5 pp in Algarve to 12.4 pp in Norte.

## RESULTS

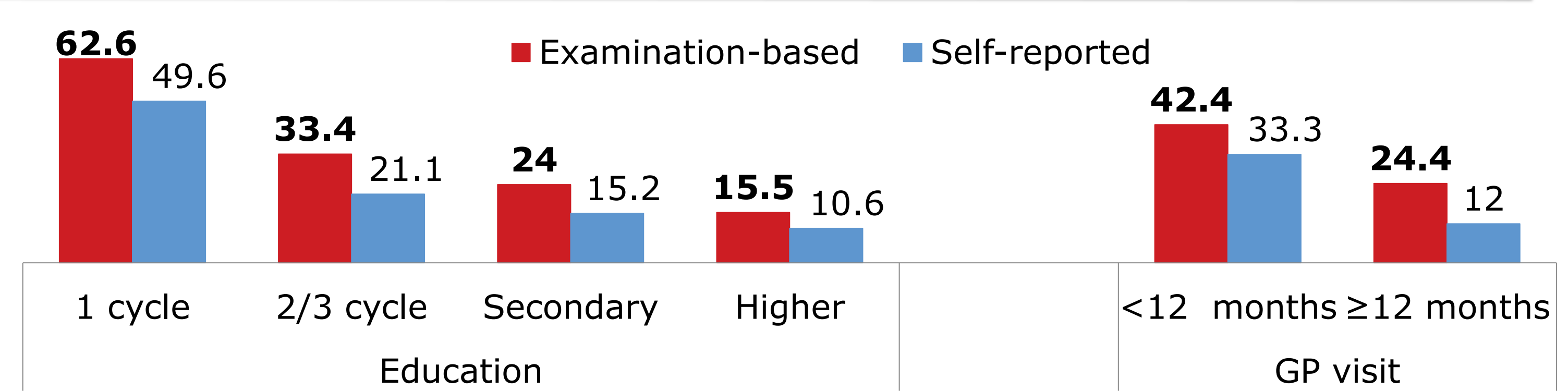


Figure 3. Prevalence of HTN by level of education and GP visit

The difference between self-reported and examination-based HTN prevalence varied from 4.9 pp for those with higher education to 13 pp for those with the 1st cycle of basic education.

The self-reported HTN prevalence was 12.4 pp lower for those who had last visited their GP more than 12 months ago.

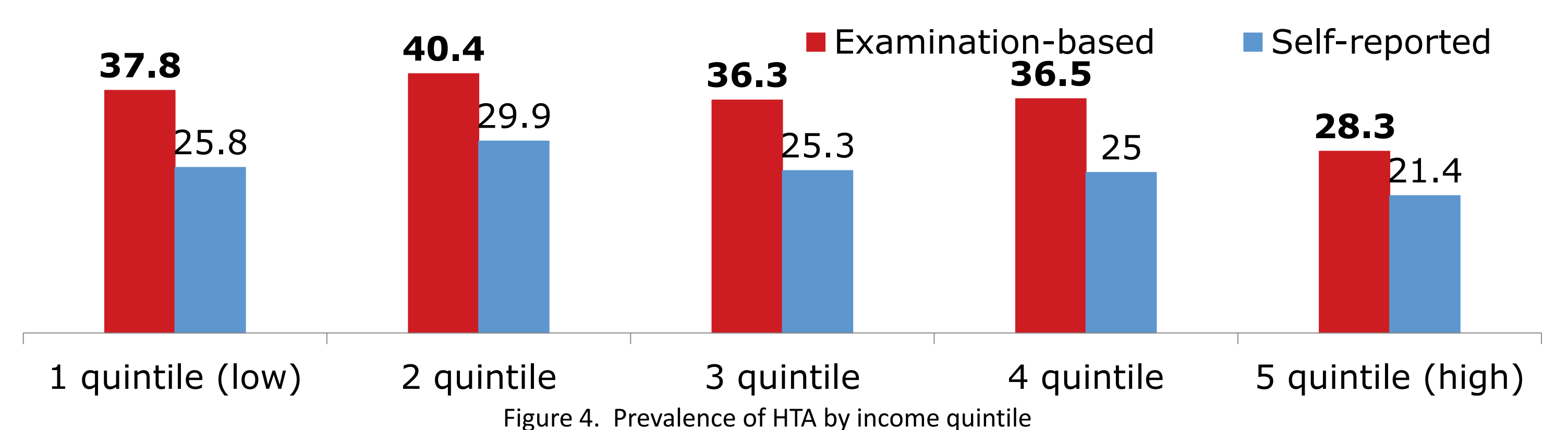


Figure 4. Prevalence of HTA by income quintile

The self-reported HTN prevalence was lower than examination-based, with 6.9 pp difference observed for those in 5<sup>th</sup> income quintile and 12 pp difference for those in the 1<sup>st</sup> income quintile.

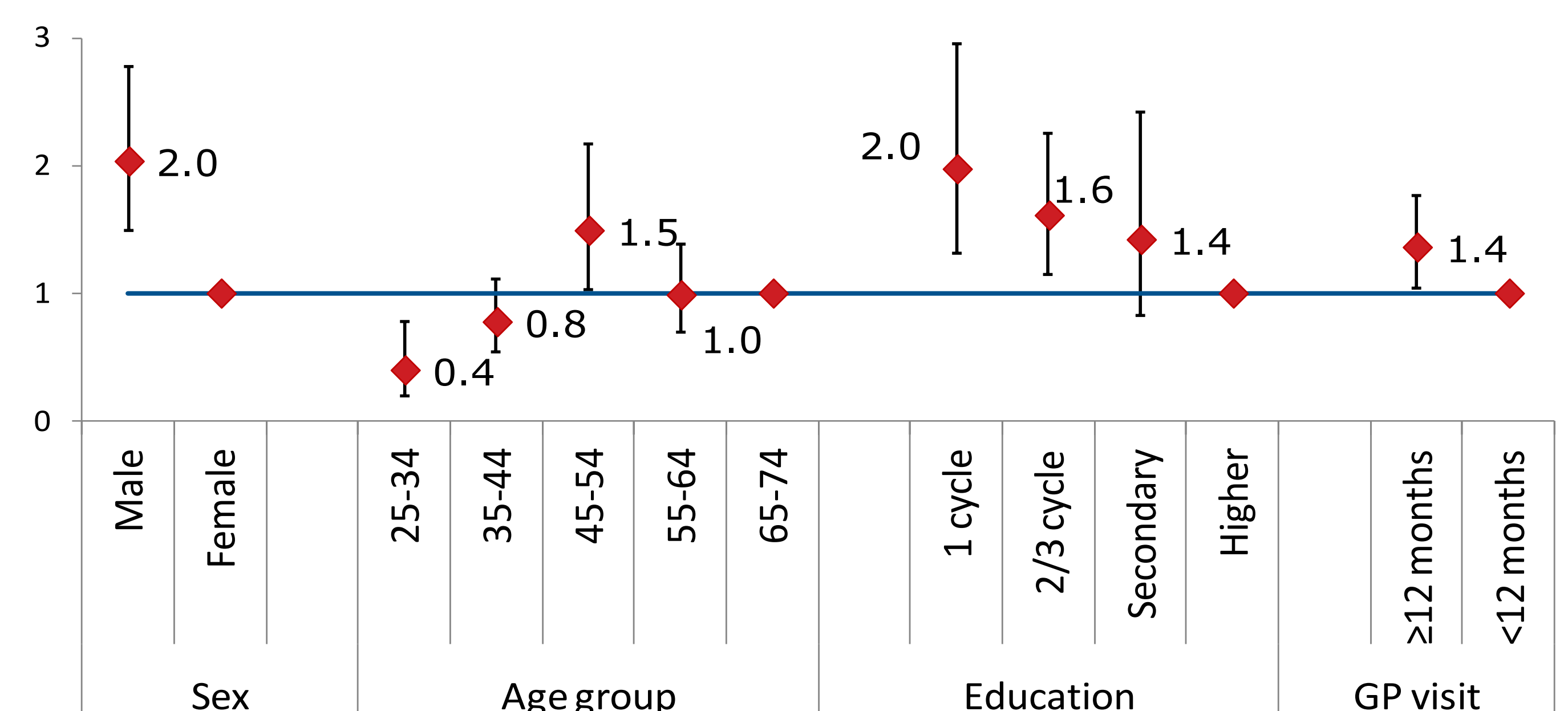


Figure 5. Odds ratios of incorrect report of HTN

Incorrect report of HTN was associated with male gender (OR=2), age between 45 and 54 years old (OR=1.5), lack of general practitioner visit in the previous year (OR=1.4) and low levels of education (1<sup>st</sup> cycle (OR=2) and 2/3<sup>rd</sup> cycle of basic education (OR=1.6).

## CONCLUSIONS

- Self-reports underestimated the prevalence of HTN.
- The accuracy of self-reports varied between population subgroups.
- When HTN is the key exposure or outcome, measured blood pressure may provide a more valid estimation of true associations than self-reports and allows better understanding of socioeconomic inequalities in health.

## REFERENCES

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