



# Factors associated to repeated influenza vaccination in the Portuguese adults with chronic conditions

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## INTRODUCTION & OBJECTIVES

In Portugal, annual vaccination against seasonal influenza is recommended to the elderly people, with underlying chronic conditions, pregnant women, health professionals and caregivers<sup>1</sup>. Notwithstanding, in our country the vaccine coverage in these groups is still low, namely in people with chronic conditions, where the coverage has been below 35%<sup>2</sup>. In addition, the proportion of chronically ill individuals that are vaccinated against influenza in consecutive seasons is unknown.

This study aimed to identify the factors associated to influenza vaccination (IV) uptake in consecutive seasons in adults with chronic conditions.

## METHODS

**Study design:** cross-sectional study.

**Data source:** Portuguese National Health Examination Survey (INSEF 2015) of non-institutionalized 25-74 years old (yo) resident in Portugal able to follow an interview in Portuguese.

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

**Target population:** The target population was restricted to individuals who self-reported at least one of the following chronic conditions: respiratory (asthma; chronic obstructive pulmonary disease); diabetes; cardiovascular (stroke, myocardial infarction and arrhythmia); liver and kidney disease. Individuals were considered as belonging to the risk group for the 4 seasons in analysis (2011/12 to 2014/15) if age and the reported date of diagnosis was before 2011.

**Dependent variable:** Self-reported vaccination status in 4 consecutive seasons was categorized in 3 levels: unvaccinated (unvaccinated in all 4 seasons), occasional vaccination (vaccinated 1-3 times over 4 seasons) and regularly vaccinated (vaccinated in all 4 seasons).

**Independent variable:** age, sex, marital status, cohabitation, education, self-reported tobacco smoking, general practitioner or other medical specialist visits in the 12 months previous to the interview and specific chronic conditions were tested for their association with the IV uptake (repeated or occasional).

**Statistical analysis:** A multinomial logistic regression was applied to estimate odds-ratio (OR) of influenza vaccination according to sociodemographic factors, health care use and status and disease specific.

## RESULTS

From the total INSEF sample, 807 participants (corresponding to a population estimate of 1 039 577 individuals; 95%CI: 883 491 to 1 195 663) reported at least one of the health conditions relevant for influenza vaccine recommendation.

For this group, the vaccine coverage (VC) in 2014/15 season was 33.8% (95% CI: 29.8% to 38.1%). Disease specific coverage rates indicate that the highest coverage rate was observed within individuals reporting renal disease followed by those reporting diabetes (Figure 1).

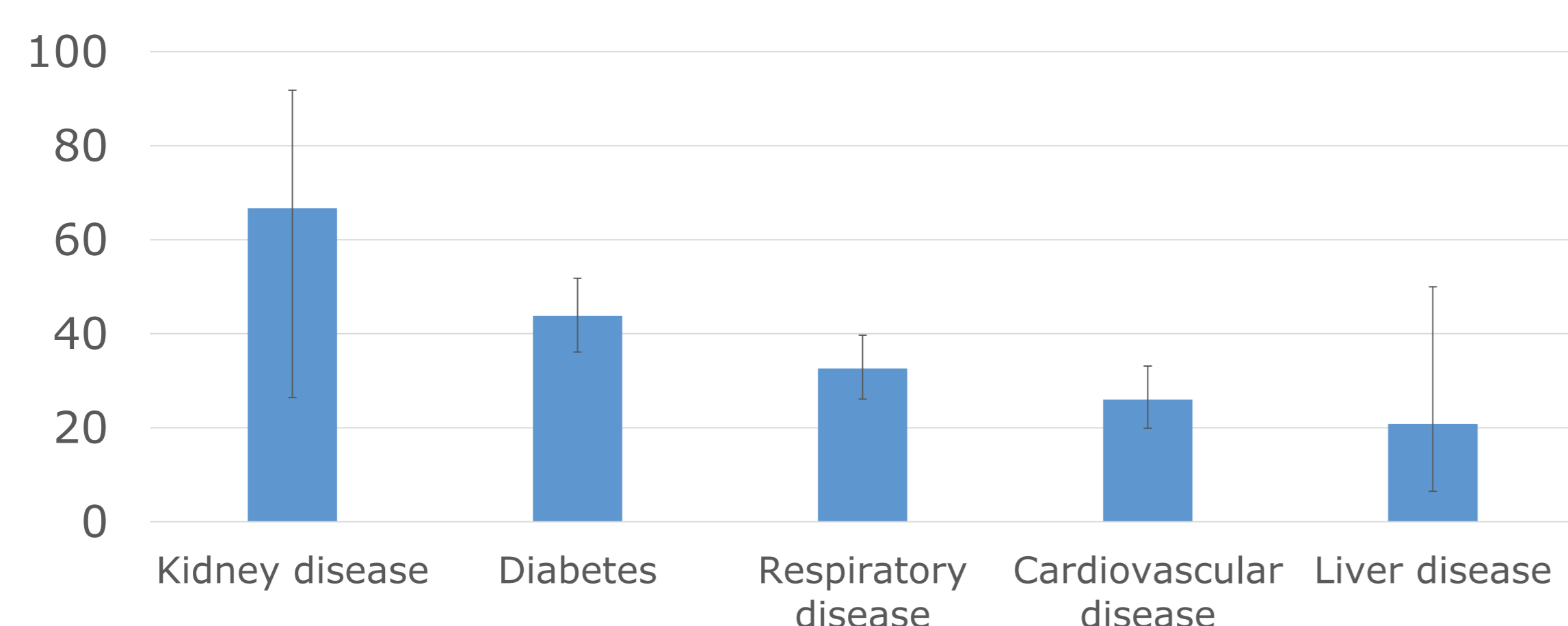


Figure 1. influenza vaccine coverage in the 2014/15 season according to the reported disease

## RESULTS (cont.)

Of the target group, the regularly vaccinated (all 4 seasons) encompassed 26.7%, but the majority reported to have never been vaccinated (53.5%) (Figure 2).

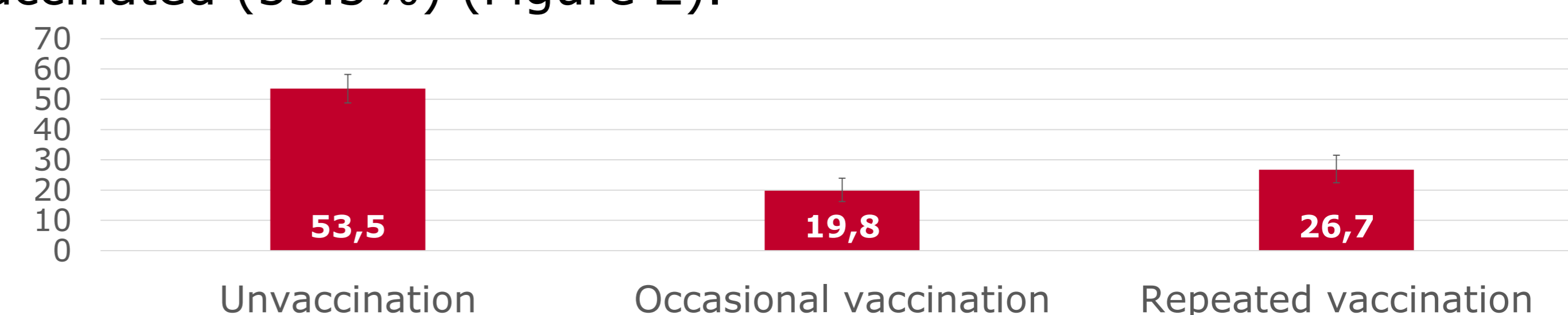


Figure 2. influenza vaccine coverage along the four seasons in analysis (from 2011/12 to 2014/15 season)

Being male, belonging to the 65 to 74 age group, having an appointment in the 12 months previous to the interview with a general practitioner (GP) or other specialized physician, with no smoking habits and reporting diabetes increased the prevalence of being regularly vaccinated when compared to never vaccinated.

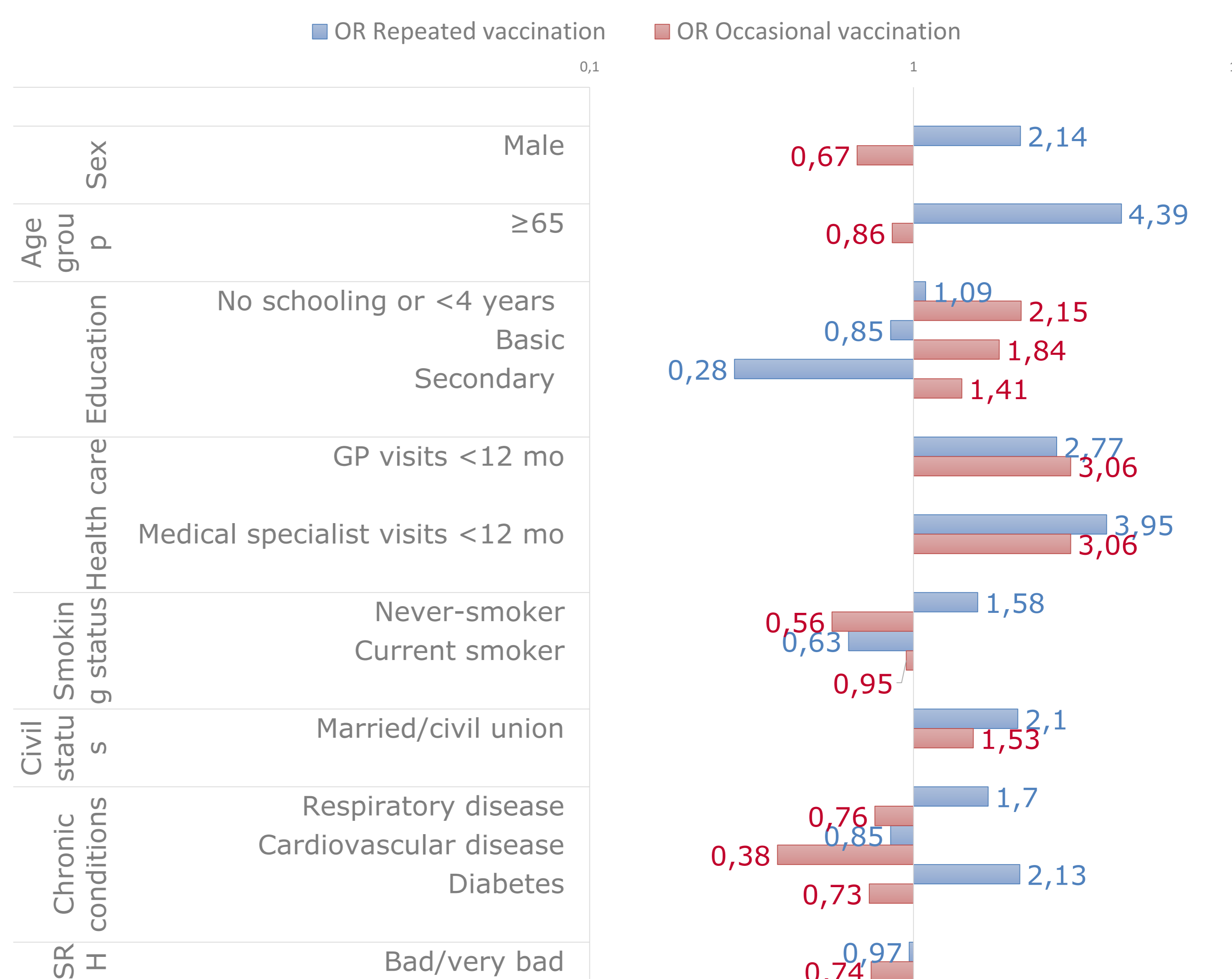


Figure 3. Associated factors to regular and/or occasional IV uptake

Finally, having a self-reported cardiovascular condition decreased the likelihood of being either occasionally (OR= 0.55; 95%CI=0.32 to 0.95) or regularly vaccinated (OR= 0.77; 95%CI: 0.46 to 1.31).

## CONCLUSIONS

- Yearly influenza vaccination (IV) is recommended to individuals with chronic conditions yet only 26.7% of adults with chronic conditions reported being vaccinated from 2011 to 2014.
- Younger age, female and having a cardiovascular condition reduced the likelihood of being repeatedly vaccinated in 4 consecutive seasons.
- Health professional recommendation was positively associated with both occasional and repeated IV.
- Future vaccination programmes should be focus for the previous identified population subgroups and the medical recommendation of the influenza vaccine uptake should continue and be reinforced particularly in individuals with a cardiovascular condition.

## REFERENCES

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