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Content

Introduction: Background

Background

- Hypertension is a leading risk factor for cardiovascular diseases, affecting public health worldwide and prominently in the U.S.

Problem

- Following an initial improvement in blood pressure control among U.S. adults with hypertension from 1999-2000 to 2007-2008, there was a stagnation and subsequent decrease post-2013 (Muntner P, et al., 2020).

Introduction

Motivation

- This study is motivated by the need to investigate the reasons behind this decline and to identify factors contributing to the diminishing control of hypertension in recent years.

Study Objective

- Examining the trends, awareness, and medication use in stage 2 hypertension among U.S. adults.

- Assessing the impact of demographic factors and comorbid conditions on hypertension control.

Methodology

Methodology

1. Weighting and multiple year adjustment

2. Multiple Imputation to address missing data

3. Logistic Regression Models (Dobson, 2008):

Suppose there are n covariates $X_i, i = 1, \ldots n$, the model can be expressed as:

$$log(\frac{\pi}{1-\pi}) = X\beta = \beta_0 + \beta_1 X_1 + \ldots + \beta_n X_n$$

- π is the risk
- $\frac{\pi}{1-\pi}$ is the odds
- β_0 is the log odds for $X_i's = 0$
- β_i is the log odds ratio per unit change of X_i, holding all other covariates fixed

Results

Discussion

Discussion

References

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2. "Facts about Hypertension." Centers for Disease Control and Prevention, 6 July 2023. URL http://www.cdc.gov/bloodpressure/facts.htm/ [Accessed 22 Dec. 2023.]

3. Muntner P, et al. (2020) Trends in Blood Pressure Control Among US Adults With Hypertension, 1999-2000 to 2017-2018. JAMA 324(12):1190–1200. https://doi.org/10.1001/jama.2020.14545

4. "Nhanes tutorials - Variance Estimation module". Centers for Disease Control and Prevention, URL https://wwwn.cdc.gov/nchs/nhanes/tutorials/VarianceEstimation.aspx [Accessed 22 Dec. 2023.]

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6. Rubin, D.B. (2018). Flexible Imputation of Missing Data, Second Edition. Chapman and Hall/CRC.