

Asthma Control in Puerto Rico, 2011-2012

Puerto Rico Asthma Program
Division for the Control and Prevention of Chronic Diseases
Puerto Rico Department of Health
Eliseo Acevedo-Díaz

June, 2015



Objectives

- Compare asthma prevalence among adults by covariates in Puerto Rico and United States
- Use NAEPP guidelines' control algorithm to establish and identify uncontrolled asthma among asthma patients
- Compare of Asthma Call-Back variables with NAEPP guidelines
- Present data related to uncontrolled asthma among adults in Puerto Rico

Asthma

- Is a complex chronic disorder characterized by episodes of airflow obstruction, bronchial hyper-responsiveness, and an underlying inflammation, which are often reversible either spontaneously or with treatment (NAEPP, 2007).
- Represents a load to government, health care systems, caregivers, and patients (Masoli, 2004)
- Patients with asthma have impaired quality of life (Ford, 2003)

Data Source

Puerto Rico Behavioral Risk Factor Surveillance Survey (BRFSS)

- World's largest Random Dial Telephone Survey
- Complex Sampling Survey for extrapolation
- More than 7,000 interviews per state/territory per year

Data Source

BRFSS: Asthma Call-Back

- Comprehensive asthma health survey in adult's with lifetime and current asthma
- 2011-2012 data aggregation
- 800 participants in Puerto Rico for the aggregated period

Measures

Health Measures

Current asthma prevalence: Do you still have asthma?

Asthma control: Classified as uncontrolled asthma

- National Asthma Education and Prevention Program (NAEPP) is a national organization that establishes baseline treatment and interventions to patients with asthma
- Expert Panel Review 3 (EPR-3) was developed by an expert panel commissioned by the NAEPP
- The EPR-3 organized the literature review and final guidelines report around four essential components of asthma care:
 - assessment and monitoring
 - patient education
 - **control of factors contributing to asthma severity**
 - pharmacology treatment
- An algorithm to identify patients with different levels of asthma control was established in these guidelines

NAEPP EPR-3 asthma control algorithm

Components of Control	Well Controlled	Not Well Controlled	Very Poorly Controlled
Symptom	≤ 2 days/week days	> 2 days/week but not through the day	Every day in the past 30 days and throughout the day
Nighttime awakenings	≤ 2 days/month	1-3 days/week	≥ 4 days/week
Rescue medication use	≤ 2 days/week	> 2 days/week	≥ 2 uses per day
Forced Expiratory Volume (FEV ₁)	$> 80\%$ predicted	60%-80% predicted	$< 60\%$ predicted
Asthma Control Test (ACT)	≥ 20	16-19	≤ 15

ACB variables

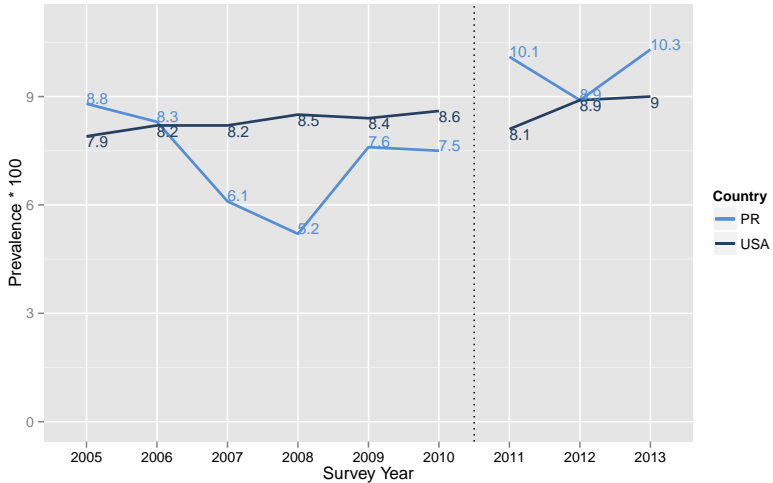
- Extract the symptom category from SYMP_30D and DUR_30D
- Nighttime awakenings was obtained from ASLEEP30
- Short-Acting Beta Agonists (SABA) usage was calculated using all the SABA medications from the ILP08_# list
 - Divided weekly usage by 7 to get daily usage
 - Calculated daily usage was added to the original daily usage (now we have "the" daily usage)
 - Instead of evaluating a days/week variable, a times/day variable was evaluated
- **FEV₁** and **ACT** variables are not available in ACBs

Asthma Call-back asthma control algorithm

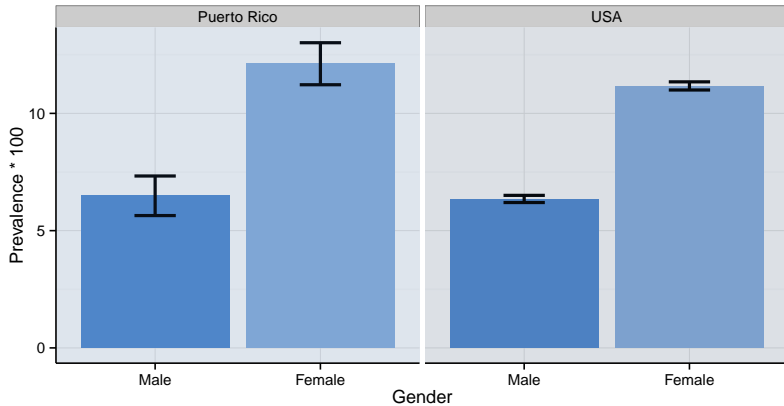
Components of Control	Well Controlled	Not Well Controlled	Very Poorly Controlled
Symptom (SYMP_30D and DUR _{30D})	≤ 8 days in past 30 days	> 8 days in the past 30 days but not through the day	Every day in the past 30 days and throughout the day
Nighttime awakenings (ASLEEP30)	≤ 3 times in past 30 days	≥ 3 and ≤ 12 times in the past 30 days	≥ 13 times in the past 30 days
Rescue medication use (ILP08-#)	≤ 0.29 uses per day	> 0.29 and < 2.00 uses per day	≥ 2.00 uses per day

Current Asthma Prevalence

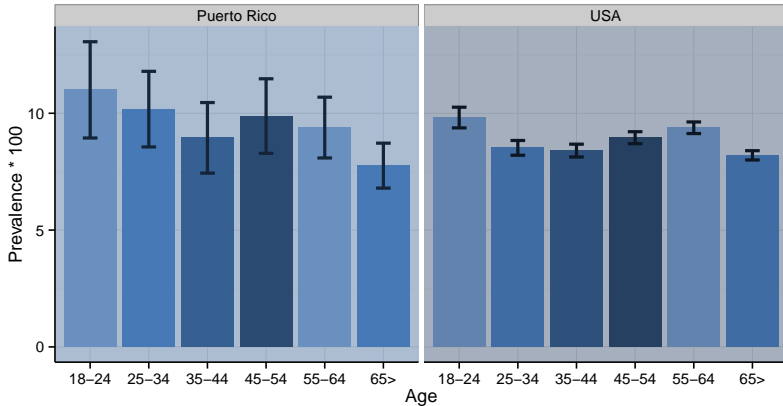
Current Asthma Prevalence



Current Asthma Prevalence by Gender and Country, 2011-2012

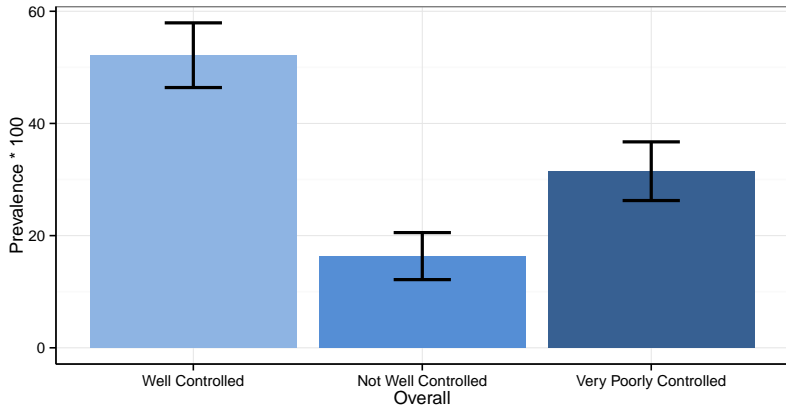


Current Asthma Prevalence by Age Group, 2011-2012



Asthma Control

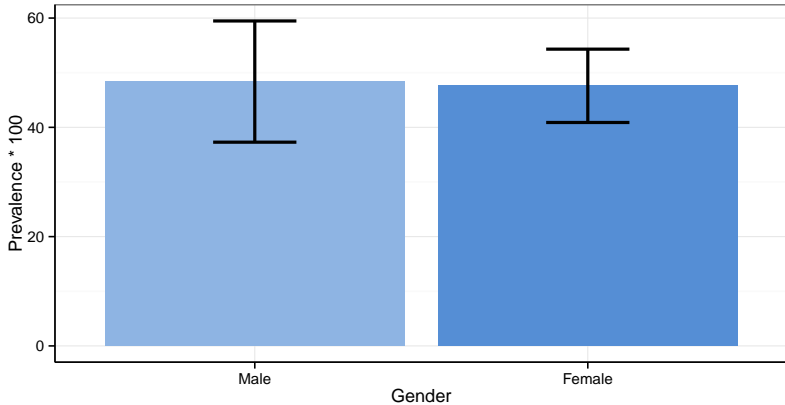
Overall Asthma Control Distribution, 2011-2012



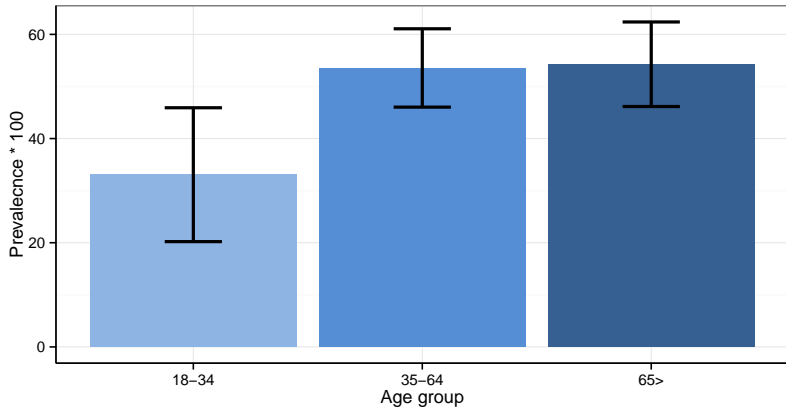
Uncontrolled asthma

For a better analysis and comprehension of the asthma control, we have aggregated those within the "Not Well Controlled" category with the "Very Poorly Controlled" and called this the "Uncontrolled" Asthma.

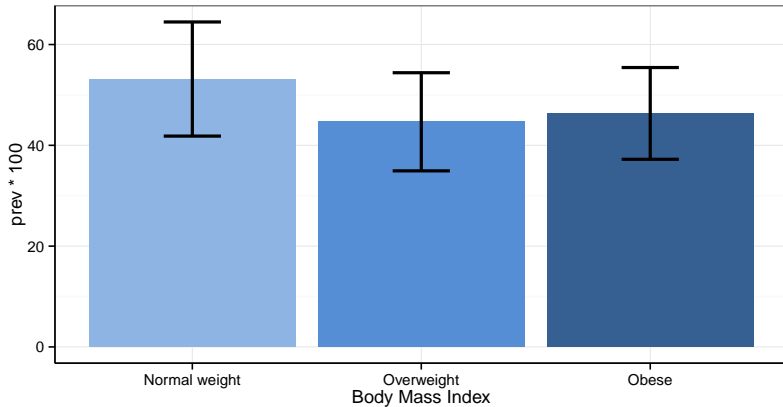
Uncontrolled Asthma Prevalence by Gender, 2011-2013



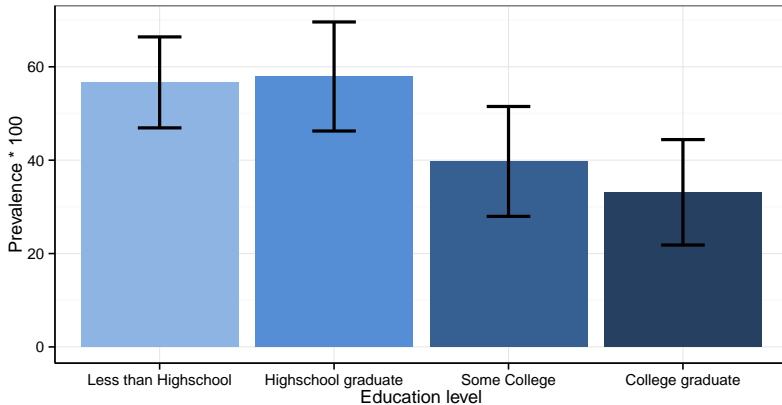
Uncontrolled Asthma Prevalence by Age, 2011-2013



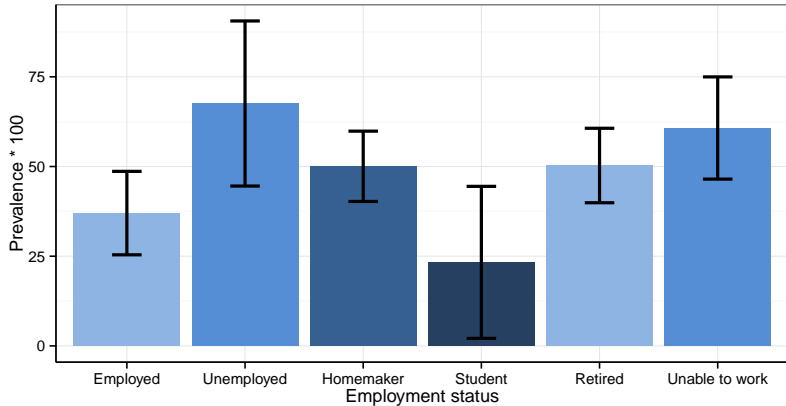
Uncontrolled Asthma Prevalence by BMI category, 2011-2013



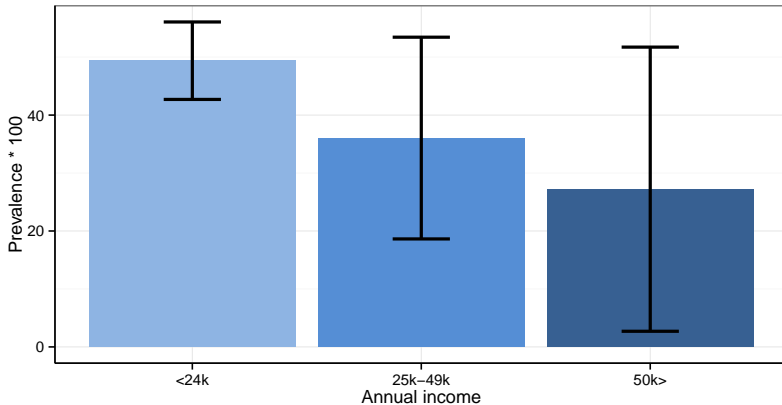
Uncontrolled Asthma Prevalence by Education Level, 2011-2013



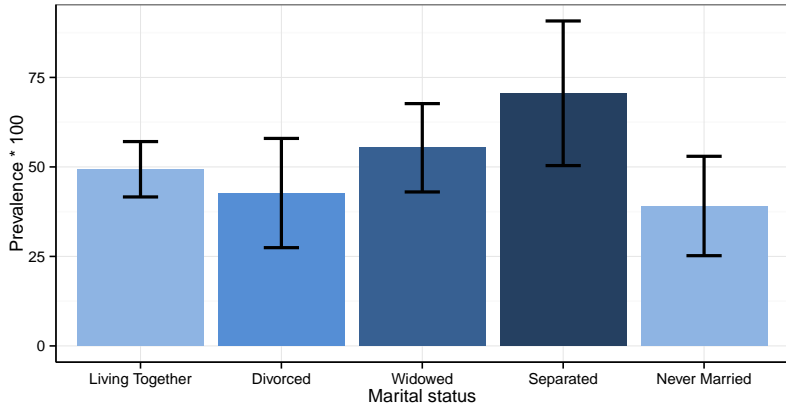
Uncontrolled Asthma Prevalence by Employment Level, 2011-2013



Uncontrolled Asthma Prevalence by Annual Income, 2011-2013



Uncontrolled Asthma Prevalence by Marital Status, 2011-2013



Results

- Asthma prevalence in Puerto Rico is higher than in the mainland
- 48% of the adults living with asthma in Puerto Rico, have their condition uncontrolled
- Socioeconomic factors, such as annual income, marital status, and employment status, are a trigger for uncontrolled asthma

Strengths

- A populational asthma control indicator can be obtained
- Results are consistent with literature
- Sample size provides stratification by covariates
- It is cost-effective

Weakness

- The information is self-reported
- Not all the variables used by NAEPP to determine the level of asthma control are collected in the survey

Next steps

- Continue the analysis of asthma control health outcomes with other data sets
- Compare and validate the information with other populational surveys
- Promote the use of Asthma Call-back survey for more comprehension use of the condition
- Disseminate the results

Asthma Group

- Mr. Eliseo Acevedo-Díaz (eliseoad@gmail.com)
- Ms. Wanda Hernández-Virella
- Dr. Jessica Irizarry-Ramos

PR-BRFSS

- Dr. Ruby Serrano

More information on our website:

www.proyectoasma.pr.com