

# Asthma and Sleep Quality in Rural Adolescents

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## Background

- Asthma is the most common chronic illness among U.S. adolescents.
- Uncontrolled asthma is a risk factor for poor sleep quality.
- The American Academy of Sleep Medicine recommends 13- to 18-year-olds sleep 8 to 10 hours a night for optimal health and development.
- Despite this, 73% of high school students get less than eight hours of sleep on school nights.
- Insufficient sleep is associated with increased risk for obesity, suicidal ideation, poor academic performance, and depression.
- Rural communities are vastly underserved and marginalized.

## Aims

The aims of this study were 1) to characterize sleep quality among rural adolescents, 2) to test associations between sleep quality and if ever diagnosed with asthma, and 3) among those with asthma diagnosis, to test associations between sleep quality and asthma severity.

## Methods

### Sample

- Participants (n = 1101) were 9<sup>th</sup> – 12<sup>th</sup> graders in four rural public South Carolina high schools.

### Measures

- Secondary analysis of screening data from a large clinical trial testing the effectiveness of an evidence-based asthma intervention in rural adolescents with uncontrolled asthma.
- All students in each school asked to report:
  - If ever diagnosed with asthma (yes/no);
  - Frequency of asthma symptoms, which was used to characterize asthma severity based on NHLBI guidelines; and
  - Five self-reported sleep quality taken from the 2007 NHANES survey.

## Demographics

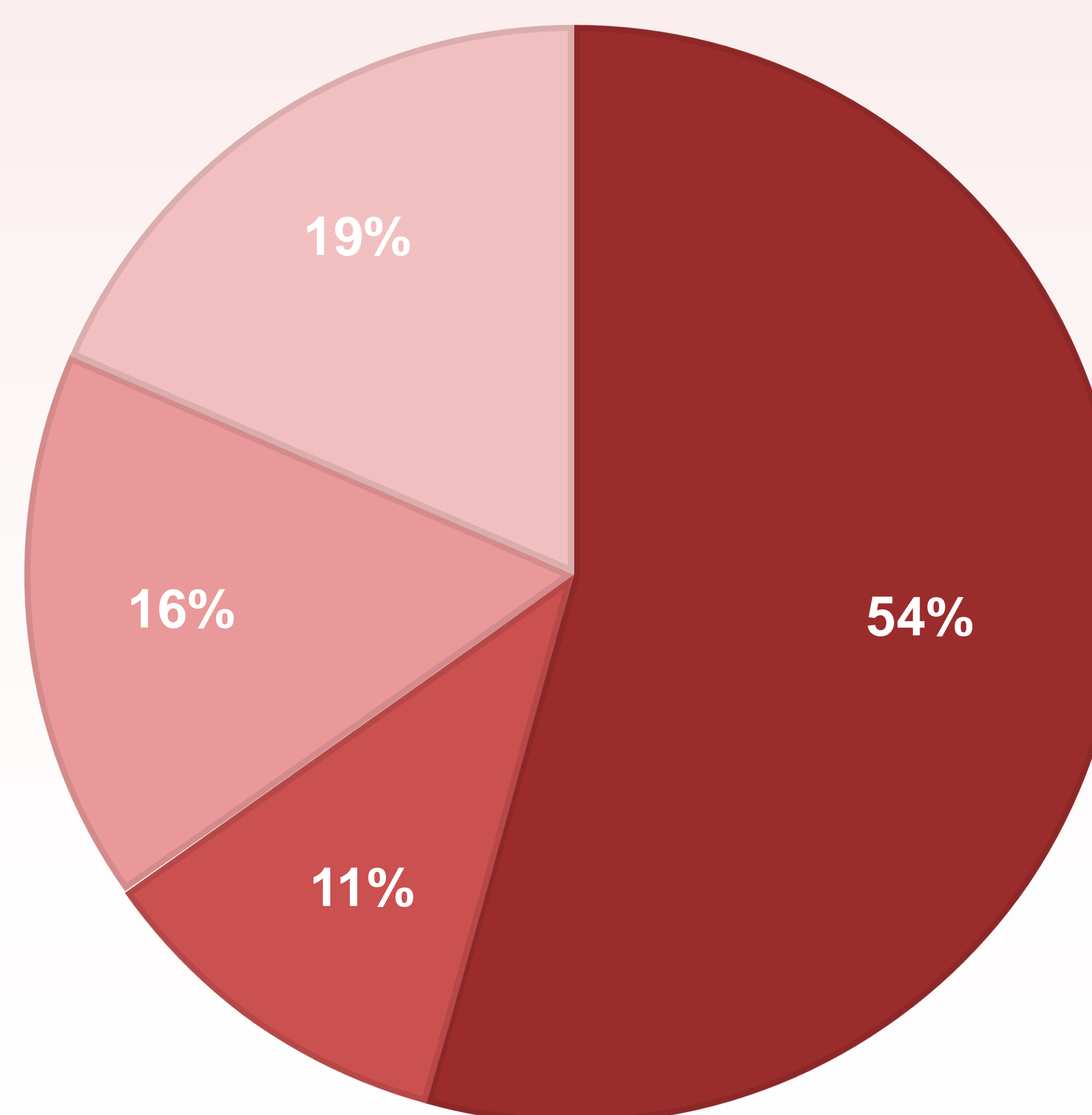
Age, mean, ± Standard Deviation	16.1 ± 1.2
Male sex	562 (51.1%)
<b>Race/Ethnicity</b>	
African-American/Black	341 (39.2%)
White	280 (32.2%)
Hispanic/Latino	111 (12.8%)
Mixed	107 (12.3%)
Other	31 (3.6%)

## Asthma

Ever diagnosed with asthma	125 (11.3%)
No symptoms in the last 12 months	32 (25.8%)

## NHLBI SEVERITY

■ Intermittent ■ Mild Persistent ■ Moderate Persistent ■ Severe Persistent

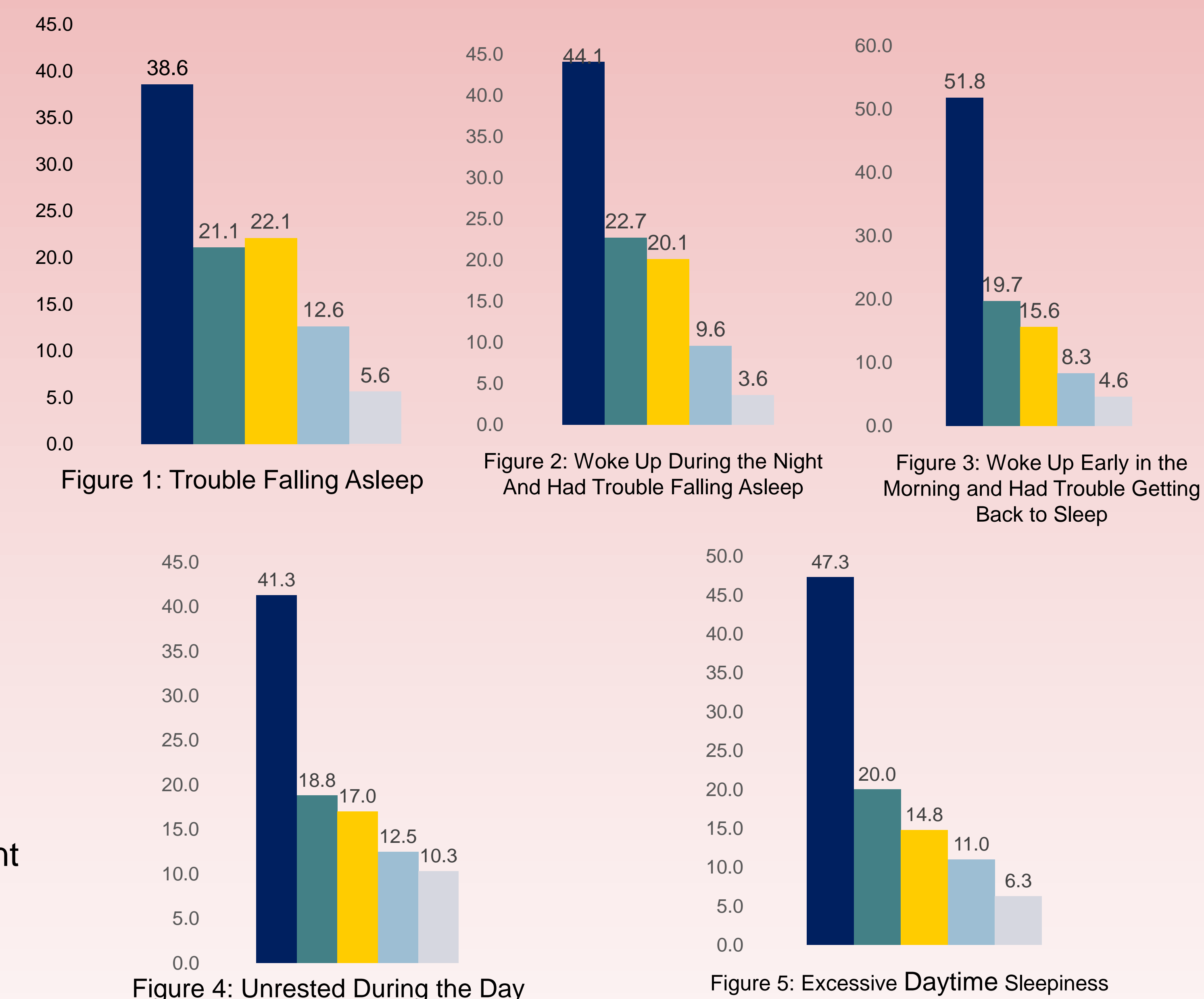


## Sleep

### Meet sleep weekday recommendations

As recommended (8-10 hours)	476 (44.2%)
Less than recommended (<8 hours)	381 (35.3%)
More than recommended (>10 hours)	221 (20.5%)

### Results from self-reported sleep questions



### Legend

- 0 - Never
- 1 - Rarely (1 time a month)
- 2 - Sometimes (2-4 times a month)
- 3 - Often (5-15 times a month)
- 4 - Almost Always (16-30 times a month)

### Limitations

- Non-representative sample
- Self-report data, which is subject to recall bias
- Potential comorbidities not assessed (e.g., obesity, socioeconomic status)

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