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The Association of Sleep Quality and Asthma Among Rural Adolescents

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Background: Asthma is a common chronic medical condition among U.S. adolescents. Studies have shown that rural adolescents compared to urban adolescents, suffer from increased asthma prevalence and morbidity, and are vulnerable to poor health outcomes due to limited access to medical care and financial constraints. The most underserved and marginalized communities in the United States are located in rural or non-metropolitan areas, which are mired in rising poverty, ethnic and racial inequality, and health disparities. Adequate sleep is essential for optimal health and development, which is often compromised among those with uncontrolled asthma, a major risk factor for poor sleep quality. The purpose of this study was to examine the association between uncontrolled asthma and sleep quality among nonmetropolitan and rural adolescents. We hypothesized that worse sleep quality will be associated with (1) being diagnosed with asthma, and (2) increased asthma severity. **Methods:** 1101 9th – 12th graders attending four rural public high schools in South Carolina completed a survey as part of a larger clinical trial testing the effectiveness of an evidence-based asthma intervention when delivered to rural adolescents with uncontrolled asthma. Students reported if they were ever diagnosed with asthma, and the frequency of asthma symptoms. Response were used to assess asthma severity based on NHLBI guidelines, asthma-related urgent care visits. Students were also asked five questions taken from the National Health and Nutrition Examination Survey (CDC, 2007) on sleep quality. Among participants (mean age = 16.1 ± 1.2 ; 39.2% African-American, 32.2% White; 51.1% male), 35.3% reported sleeping less than eight hours during weekdays, 18.2% reported having trouble falling asleep often or almost always in the past month, and 22.8% reported feeling unrested during the day often or almost always in the past month. Adolescents diagnosed with asthma (11.3%, $n=125$), 34% ($n=42$) were characterized as having persistent asthma based on NHLBI standards. **Conclusion:** Future analyses will examine associations between sleep quality, asthma diagnosis, and increased asthma severity.