

Stony Brook University Evaluation of Sleep, Depression, Fatigue among Stony Brook Students

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Overview/Abstract

Studies have shown that sleep disorders (such as poor sleep hygiene, insomnia, and sleep disordered breathing, etc.) as well as depression and anxiety occur in college age students and can lead to poor academic performance.^{1,2} If not diagnosed in a timely manner, these disorders can cause long-term health issues. However, most college age students do not show signs and symptoms of sleep disorders, nor do many colleges and universities have student health support to recognize sleep disorders as a major health concern. Our proposal is a survey-based as well as subject tested data collection project gathering information from a variety of minority students in both undergraduate and graduate level courses. The goal of the proposed seed funding research project is to obtain preliminary data for an NIH grant by evaluating students at Stony Brook University. Historically, such disorders have not been assessed systematically in underrepresented minorities. Stony Brook University has a diverse population. The demographics are roughly: 1.2% American Indian or Alaskan Native; 42.3% Asian, 9.3% Black or African American; 14.6% Hispanic or Latino; 0.3% Native Hawaiian or Other Pacific Islander; 38.4% white; and 7.2% Race/Ethnicity unknown³. Assessing sleep disorders in this demographic is a high priority for the NIH.

Currently, 2 Dr DeLorenzo and Russ Rozensky are collaborating on an NIH-funded study: *The Role of the Metabotropic Glutamate Receptor Subtype 5 in Circadian Rhythm Misalignment and Depression: Implications for treatment*. The protocol includes subjects with depression as well as normal healthy subjects. A total of sixteen (16) subjects have completed overnight sleep studies or polysomnograms (PSGs): 6-M; 10-F, ages range from 18-34, average of 25.8 years old. Ethnicity: 6 Caucasian: 1-M, 5-F; 6 Asian: 3-M, 3-F; 4 mixed/other: 1-M, 3-F.

BMI ranged from 18.3 up to 43, with an average of 25.7. Only 2 subjects had a BMI <20 (underweight), 10 subjects had a BMI 20-<25 (normal), 1 subject had a BMI 25-<30 (over weight), and 3 subjects had a BMI >30 (obese). The data showed that of the 6 Asians, 3 had moderate OSA in REM, 1 had moderate PLMD, and remaining 2 were normal on their PSG. Of the 4 "mixed/other", 2 had moderate OSA, and 2 had normal PSGs. Of the 6 Caucasians, 2 had moderate OSA and 4 had normal PSGs. From the preliminary data, it is shown that these individuals have a significantly higher incidence of OSA, even though most were with a BMI less than 30. There is also a higher incidence of a sleep disorder, specifically OSA, in the Asian and "mixed/other" than in the Caucasian population. These are all young, "healthy subjects" (no medical issues were disclosed or found prior to PSG testing) for this study, and it is surprising to see the number of individuals with significantly serious sleep disorders.

Frequent arousals, causing sleep disruption, have been noted to cause depression, poor grades, and substance abuse among college students⁴. This limited data supports the need for additional funding from a seed grant, with the ultimate goal of obtaining an NIH R01 grant.⁵

Our project proposes that we recruit approximately 50 students from SBU and screen them for: depression, anxiety, sleep hygiene, and sleep disordered breathing. The tools that will be utilized are standard testing instruments including: Hamilton Anxiety Rating Scale (HAM-A), Hamilton Depression Rating Scale (HAM-D), the Epworth Sleepiness Score (ESS), Fatigue Severity Scale (FSS), 2-week sleep diary, and a basic physical exam (including: blood pressure, height, weight, neck circumference, room air saturation, waist circumference, Mallampati score, evaluation for micro/retrognathia, etc.) We will also supply the subjects with a portable Home Sleep Apnea Test (HSAT) device that is FDA approved and will monitor the subject for sleep disordered breathing. The device can be utilized for multiple days, with data being downloaded on a daily basis, via a secure website, for the team to review to ensure subject compliance. All of this data will be reviewed and analyzed to compare the differences according to gender, ethnicity, BMI, depression score, etc. for a preliminary data set for submission of the NIH grant⁵.