



Gender Differences in the Association between Annual Personal Income and Severity of Sleep Disturbance.



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Introduction

- ❖ Sleep is an important factor in determining one's physical and mental well-being. The quantity and quality of sleep must both be examined when considering whether one will develop sleep deficiency, a condition that may negatively interfere with our daily functioning ("Sleep Deprivation and Deficiency", n.d.).
- ❖ Moreover, obtaining sufficient sleep is vital for our physical health. Various internal mechanisms including proper immune function, growth and development, hormonal homeostasis, repair of the blood vessels and heart rely immensely on a good night's sleep ("Sleep Deprivation and Deficiency", n.d.).
- ❖ A prospective longitudinal study focused on a sample of pregnant women demonstrated that poor sleep quality was associated with a household income of less than 50,000\$ a year (Okun, 2014). Moreover, a cross-sectional study performed on a sample of Finnish adults found that disadvantaged socio-economic status and unemployment were considerable risk factors for decreased sleep quality (Lalluka, 2012).

Research Questions

- ❖ Is annual personal income associated with sleep disturbance?
- ❖ Does the association between annual personal income and sleep disturbance differ between males and females?

Methods

Sample

- ❖ Respondents (n=5,114, aged 26 to 35 years old) came from the fourth wave of the U.S. National Longitudinal Survey of Adolescent Health (ADDHEALTH), a representative study performed on a young adult population in the United States.

Measures

- ❖ Sleep disturbance was assessed using the sum of two questions accessing sleep quality. Each response was coded on a scale of 0 to 4, then summed. Possible scores ranged from 0 (least sleep disturbance) to 8 (most sleep disturbance).
- ❖ Personal income was measured with the question "In {2006/2007/2008}, how much income did you receive from personal earnings before taxes?". Possible responses ranged from 0 to \$999, 995.

Results

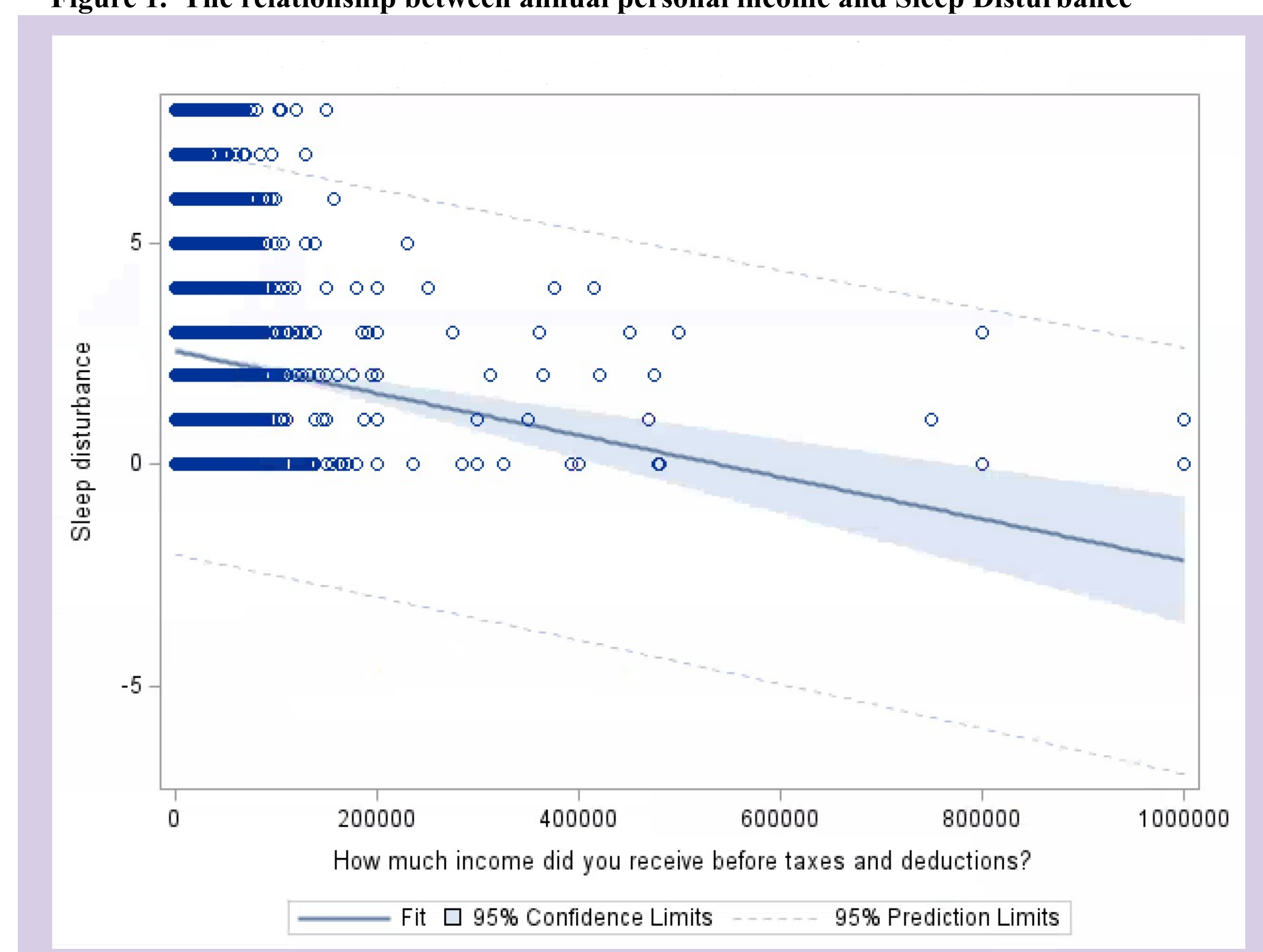
Univariate

- ❖ Respondents on average experienced moderate/low sleep disturbance, with a mean response of 2.38 and a standard deviation of 2.36.
- ❖ The average annual personal income of participants was \$35,000 with a large standard deviation of \$44,695.

Bivariate

- ❖ A Pearson correlation showed that annual personal income was significantly and negatively associated with sleep disturbance ($r=-0.09$, $r^2=0.008$ $p<0.0001$).
- ❖ A simple regression demonstrated that annual personal income and sleep disturbance are significantly and negatively associated ($B=-0.000005$, $t(4799)=-6.27$, $p<0.0001$).

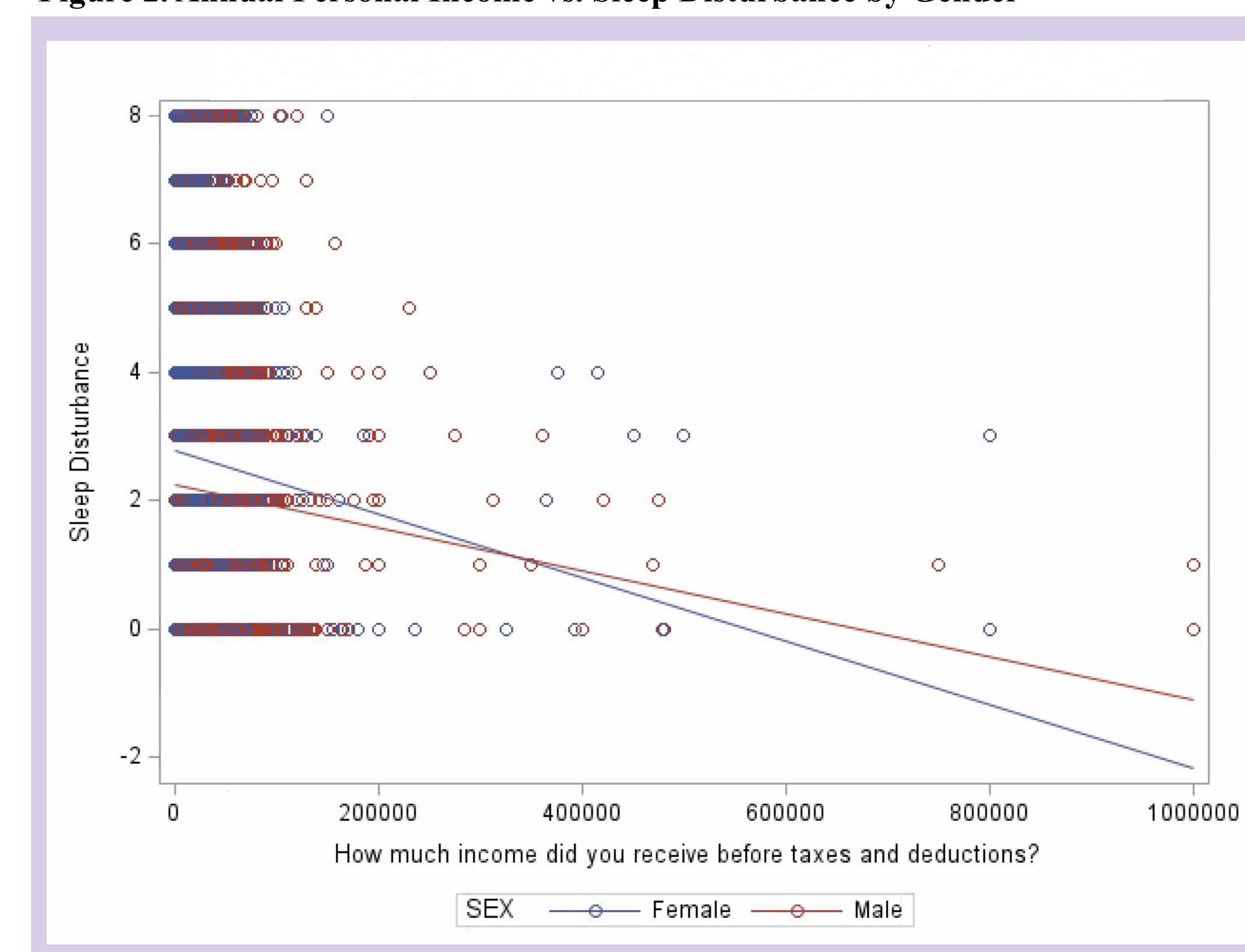
Figure 1. The relationship between annual personal income and Sleep Disturbance



Multivariate

- ❖ Gender does not moderate the relationship between annual personal income and sleep disturbance ($p=0.309$); however, gender is independently and significantly related to sleep disturbance ($p<0.0001$, Figure 2).
- ❖ Furthermore, women on average experience more sleep disturbance than men by 0.5 units.
- ❖ After controlling for gender, annual personal income is still significantly and negatively associated with sleep disturbance ($F=28.9$, $p=0.0006$).

Figure 2. Annual Personal Income vs. Sleep Disturbance by Gender



Discussion

- ❖ Individuals in lower income groups will be more likely to suffer from sleep disturbance and thus more likely to experience its diverse negative impacts.
- ❖ Educators might use this information to address the issues that students from low-income families may be facing.
- ❖ Additional investigation should be conducted to determine why females and individuals in low-income groups experience more sleep disturbance. This is an important first step towards discovering potential strategies to reduce the harmful effects of sleep disturbance.
- ❖ Further research is also needed to determine if sleep disturbance is a contributing factor to inequality between socioeconomic groups.

References

- ❖ Sleep deprivation and deficiency. (n.d.). Retrieved March 16, 2021, from <https://www.nhlbi.nih.gov/health-topics/sleep-deprivation-and-deficiency>
- ❖ Okun, M., Tolge, M., & Hall, M. (2014). Low Socioeconomic Status Negatively Affects Sleep in Pregnant Women. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 43(2), 160-167. doi:10.1111/1552-6909.12295
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