

Sleep's relationship to stress in the scholastic world versus the working world  
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Abstract

The differences in student's and worker's sleep efficiency and stress levels were investigated. Subjects self-reported their sleep efficiencies and stress levels via an anonymous survey. There was a strong correlation between the presence of stress and a lack of efficient sleep. It was found that neither students nor workers experienced significantly different amounts of sleep efficiency or stress levels. The results revealed men got the same hours of sleep per night as women, but women had less efficient sleep and more stress than men. Every year students across the nation learn to cope with the many stressors that come with obtaining a college education. Numerous times in a semester students will suffer from a lack of sleep and stress due to an exam or assignment. Similarly, those who are a part of the everyday working class also lose sleep due stress and anxiety caused from their jobs.

Cochrane (2001) found that sleep loss has negative effects on three basic areas: motor performance, cognitive function, and mood. Kelly, Kelly, and Clanton (2001) found that students who sleep longer tend to have a higher grade point average and higher overall functioning. Other recent findings indicate that sleep quality is closely related to health and well-being (Pilcher & Ott, 1998). Gender also has been found to be a significant factor in defining one's quality of sleep. A recent study by Park, Matsumoto, Seo, Kang, and Nagashima (2002) found that women go to bed later and sleep less than men.

High stress is a problem in our culture that plagues millions of Americans each year. Research has suggested that men and women differ in how they experience stress. For example, Fullerton, et al. (2001) found that women were more likely to avoid thoughts and situations associated with stress when compared to men. They also found that women were at a higher risk of experiencing intense feelings of stress and more likely to react in a physical manner.

Previous studies suggest that sleep and stress have effect on performance. The focus the current research is to examine who has better sleep efficiency and less stress, students or workers. It is our hypothesis that students will have a lower level of sleep efficiency and a higher level of stress in comparison to full time workers.

Method

*Participants*

Subjects were 68 students from a private midwestern university and 46 office employees from a local AAA automotive dispatching office. The percentage of males and females was 27.87% and 72.13% respectively.

*Materials*

The first portion of the survey was composed of Gray and Watson's (2002) Sleep Patterns and Attitudes Survey. These questions assessed a person's sleep efficiency. The second portion of the survey was Gadzella and Baloglu's (2001) Student-life Stress

Inventory which measured stress levels. The Cronbach Alpha for each of these surveys was .81 and .93, respectively. The subjects responded to questions from both scales with a five-point Likert style scale (1 = never and 5 = always).

#### *Procedure*

One of the researchers approached primarily freshman and sophomore students during class, and asked them to complete the anonymous survey. The students returned the surveys to the researcher the next time the class met. Twenty students received class credit for completing the survey and fourteen received extra credit for doing so. The employees were approached by one of the researchers during working hours and were asked to complete and return the survey within two days. Employees received no incentive to complete the survey.

#### Results

Before data was collected, the criteria were set to classify the subjects into one of five different groups: worker only, student only, student who works, worker who attends school, and full time student/full time worker.

A significant negative correlation,  $r(114) = -.54, p < .01$ , was discovered to exist between sleep efficiency and stress level, meaning as stress increased sleep efficiency decreases. An analysis of variance was performed on the participants' sleep efficiency and stress levels. There was no significant difference in sleep efficiency found amongst the five groups,  $F(4, 103) = 1.56, p = .19$ . In addition, there was also no significant difference found amongst the stress levels of the five groups,  $F(4, 103) = .66, p = .62$ .

The relationship between men's and women's stress levels and sleep efficiency was also studied. It was found that women ( $M = 57.33$ ) got significantly less efficient sleep than men ( $M = 52.44$ ),  $t(114) = 2.22, p < .05$ . However, women and men did not get significantly different amounts of sleep per week night,  $t(120) = .38, p = .23$ , or weekend night,  $t(120) = .23, p = 1.22$ . There was an overall trend toward significance between sex and stress level  $t(100) = 1.82, p = .072$ . Women reported significantly more physiological reactions to stress ( $M = 31.90$ ), such as sweating and headache,  $t(115) = 2.89, p < .01$ , than did men ( $M = 26.79$ ). Women also experienced more emotional reactions ( $M = 13.20$ ) like anger and guilt,  $t(120) = 2.99, p < .01$ , to stress than did men ( $M = 11.12$ ).

#### Discussion

The hypothesis was that students would have lower sleep efficiency and higher level of stress than full time workers. This was not found to be true; there was no significant differences between students' and workers' sleep efficiencies or their stress levels. This suggests that students and workers experience the same level of stress and have the same amount of sleep efficiency. Both students and workers must deal with stress in their life from many different directions and many of their stressors are similar in nature. Both worry about earning enough money to make ends meet and spending quality time with their families. Students must worry about their grades and workers worry about job performance, two very similar concepts.

The results of the current study are consistent with those reported by Shaver, Johnston, Lentz, and Landis (2002) and Akerstedt, Fredlund, Gillberg, and Jansson (2002) specifically, there was significant negative correlation found between level of stress and sleep efficiency. This finding suggests that for both workers and students, as stress went up, sleep efficiency went down.

A significant difference was found between sex and sleep efficiency. Women reported significantly less efficient sleep than did men, though the hours of sleep they got per night did not differ significantly. This implies that although men and women sleep the same amount of time, women's sleep is not as restful as men's.

Also, a trend toward significance was found between men's and women's stress levels. This trend suggests that women may have had more stress than did men. These findings are consistent with previous research that found men have significantly less stress than women. For example, Fullerton et al. (2001) found that women have a higher risk for stress than do men. Similarly, Nolen-Hoeksema (2001) noted that women have a different stress reactivity than did men. In the current study women reported significantly more physiological and emotional reactions to stress than did men, supporting Nolen-Hoeksema's findings.

The question as to why women seem to have more stress and thus more sleep problems than men is an interesting one. It may be because women are more often the ones who take care of children and must deal with the stressors associated with them. Another explanation may be that women have more societal pressures to succeed in a male-dominated world. It may also be that women are more open to admitting that they experience stress and a lack of sleep efficiency. The question is an important one, and further research should look at the differences between men and women's stress and sleep and attempt to discover what causes these differences.

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