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| After reviewing our data, and doing statistical tests on it we discovered there is definitely a difference in the number of hours of sleep and the quality of that sleep in stressed people. The control in our experiment was the way the test was administered, which was that all surveys were administered the same way, people were all asked to fill out he survey honestly and give all the time needed to complete it. Our data revealed that a whopping 74% of people who identified themselves as being highly stressed never or only occasionally received the proper eight hours of sleep healthy people need. When a chi-squared test was administered to see if the numbers were simply the result of chance it yielded a massive 30.87 chi-squared statistic.  The odds of it simply being chance were less the one tenth of one percent. From this we concluded that highly stressed people do not get the proper 8 hours of sleep as often as lower-stressed individuals. From this we went on to see if these highly stressed people also got less sleep the less stressed individuals, or if it was just that they didn't receive eight hours of sleep as often. From our data we computed that well over half of the highly stressed individuals only received 5-6 hours of less a night! Where as over 69% of the lower stressed individuals received at least 7-8 hours of sleep a night, furthermore 13% of lower stressed people slept 9-10 hours each night compared to only 2% of highly stressed people getting 9-10 hours each night. Once again, these number could simply be the result of chance, so we did a chi-squared test and tested at a low 5% significance level. The result: a massive chi-squared statistic of 15.8 and a p-value of 3.68X 10 to the �4. Without a doubt, stressed people received less sleep then lower stressed people. Although this was interesting we decided that highly stressed people would probably get less sleep because they couldn't fit it into their fast track lives. After answering our first question of whether or not stressed individuals got less sleep, we posed another question. Now what we wanted to see is if it was a matter of highly stressed people simply going to bed later and therefore getting less sleep or if it was the high stress levels effecting the QUALITY of the sleep or preventing them from falling asleep. To test this we asked what time each person normally retired to bed. Then we separated the stressed people from the non-stressed and crunched the numbers. This is what we found: one third of highly stressed people went to bed between 9 and 10:30, over 59% of lower-stressed people went to bed between these times. Roughly 8% of highly stressed people went to bed after 12, compared to roughly 6% of low stressed people who went to bed at the same time. When we ran a significance test on the results we found that the p-value was .179, not significant enough to reject the null hypothesis that stated that there was no difference between the bed times of highly stressed people and lower stressed people. This result led us to hypothesize that if stressed and non-stressed people go to bed at relatively the same time, then it must be the quality of the sleep that differs in between the two groups. So we reviewed the numbers on the question that asked how often one had trouble falling asleep, i.e. takes a long time to fall asleep, restless sleep, and frequent bathroom use. The results: over 39% of highly stressed individuals ALWAYS had trouble falling asleep, compared to 0% of non stressed individuals. Also, quite glaring was the fact that over 28% of stressed people had trouble sleeping at least sometimes compared to only 8% of non stressed people. We ran it through a chi-squared test and received a 17.99 statistic and a p-value that was significant at the 1% level. Less then 1 percent of the time we would get these results simply by chance. With all these results we cannot refute our hypothesis that states that the more stressed you are, the less you will sleep, and the less restful that sleep will be. However, in our experiment we found that jobs, sports, girlfriends, or boyfriends, AP classes, divorce, eating habits, and self-image didn't directly effect hours of sleep in our survey, although we beleive that these could be good subjects of future experiments. We did however, find that several subjects did have sufficient effects on stress in our sample to warrant a second look. One was the surprisingly large number of people who identified themselves as having an obsessive-compulsive disorder. We crunched the numbers and found that 13% of the people surveyed said that they suffered from an OCD (obsessive compulsive disorder). The number that really caught our eye was the fact that of the people who said they had an "unbearable" stress load, 28% said they had an OCD. Furthermore, 18% of highly stressed people said they had an OCD. We decided to see if there was a sex bias, so we separated the sample by sex and stress levels. What we found was surprising, 38% "unbearably" stressed males also suffered from an OCD, and a quarter of all highly stressed men had an OCD, and to finish it off over 18% of all the men surveyed regardless of stress level said they had a OCD. Compare this with the fact that only 10.4% of females said they had an OCD, and only 16.7% of highly stressed females suffered from and OCD, and one begins to wonder whether there is a possible gender gap in stress levels, we decided to see for ourselves. We knew from our data that 47% of all the men surveyed said they were highly stressed, compared to only 38% of women, in addition 22% of men said they were unbearably stressed, whereas only 10% of women were identified as being unbearably stressed. However, when we ran the results through a chi-squared test we found that the chi-squared statistics didn't yield p-values that were significant at any level. So we conclude that we need more information to see if there is a gender gap in stress levels. The final subject that we tested was drug and alcohol use, and how it effected stress levels. In our sample, 61% of stressed individuals said they used alcohol or drugs at least occasionally, whereas only 50% of non-stressed individuals said they used. We ran the numbers through the chi-squared test and discovered that at least for our sample, there was no correlation between stress and drug use. However, we further hypothesize that there could be confounding variables in this, and that it could make an interesting experiment for future groups. We believe that since most people don't use drugs and alcohol alone, and generally do it in a socially engaging situation, that this social interaction can provide a certain amount of stress relief and confound the results. Some other interesting suggestions for future groups are as follows: Ask what race the subjects are and what income bracket their family lives in, ask subjects if they are middle/oldest/youngest child, there could be a stress correlation, be sure that groups such as minorities, underclassmen, and other groups do not have a large statistical under coverage, this could skew your results, be sure to get a large sample size, anything over 30 is statistically sufficient, but try and get at least 100 if you can, finally try and randomize your selection of subjects as much as possible. In our survey there were some potential problems that could have altered the results, they are the following: large under coverage of minorities and freshmen, convenience sampling was used instead of SRS, this is OK, because we had more then 30 subjects, but an SRS would have been more accurate, and finally, there was no way to tell if the subjects answered truthfully, a few jokesters could skew results badly. In addition some people may have been unclear on what exactly a question was asking.   ([next](http://docs.google.com/conclusion2.html))  [[Home](http://docs.google.com/home.html)][[Introduction](http://docs.google.com/introduction.html)][[Hypothesis](http://docs.google.com/hypothesis.html)][[Procedure](http://docs.google.com/procedure.html)][[Data](http://docs.google.com/data.html)][[Conclusions](http://docs.google.com/conclusions.html)][[Bilio/Links](http://docs.google.com/biblio.html)]  [[2001 Projects](http://docs.google.com/index.html)][[2000 Projects](http://docs.google.com/AP2000/index.html)][[1999 Projects](http://docs.google.com/AP99/index.html)][[1998 Projects](http://docs.google.com/AP98/index.html)] |

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