Chen Li
Prof. Hunter
2 Precis

In Mitch Leslie's journal review, he explores neuroscientist Orfeu Buxton's study on sleep and its relation to diabetes, obesity. Buxton's study consisted of 21 subjects, who all lived in equivalent hotel suites within a hospital. For nearly 6 weeks, all the subjects were forced to sleep for only 5.6 hours in each 24 hour period. They were restricted from Internet usage, TV, and contact with anyone outside the study. The results from the study found an increase in the amount of glucose in each subject's bloodstream. Buxton suspected that because the pancreas released less insulin, the hormone that spurs cells to absorb sugar were less available. Additionally, resting metabolic rate fell by 8%. Calculation for over a year following the same proportion translated into a weight gain of nearly 6 kilograms. Although the results were reversible after a 10-day recovery period for the subjects, years of disruption in sleep can be tough to reverse. The results from Buxton's study highlighted important potential pathways by which sleep and circadian disruption can lead to obesity and diabetes. Leslie cites James Ganwisch, sleep epidemiologist from Columbia University Medical Center of New York City, who believes that Buxton's results offer a cautionary message of our daily practices of how little we sleep. Serving as a wakeup towards the culture we live in today, Leslie ends his journal review quoting from sleep research Michael Grandner of the University of Pennsylvania. He mentions the unhealthy way of living individuals are settling for, especially in a culture that prides itself on how little sleep we can get by on.

X Xu et al. seeked to examine the correlation between sleep duration, sleep duration variation and body mass index in their year long study. Although research regarding this particular area has been popular, majority of previous publications were based on self-reported sleep data. Thus, X Xu et al. emphasized the lack of accuracy this may provide, since evidence can not be objectively measured. To seek clearer data on sleep duration and sleep duration variation, X Xu and his team derived a large, longitudinal, and diverse population to study upon. Their participants included over 748 individuals, equally divided among both genders. To record the duration of sleep, each participant was provided a Fitbit Charge HR, a wristband capable of tracking all-day activity and sleep. Additionally, the Fitbit was able to recognize and record significant movements while sleeping (variations). Overall, the Fitbit showed high accuracy (91%) in detecting sleep/wake state, to effectively calculate duration of sleep. To calculate body mass index, each participant had their BMI calculated three times over the 12 month period. Clinical blood tests were included, to determine diabetes markers, lipid markers, complete blood cell counts, etc in the participants. Results from the study declare that both sleep duration and variation were significantly correlated with BMI. Shorter sleep duration was associated with higher average BMI, and vice versa. Moreover, sleep variation; irregular sleep showed a large effect on BMI. X Xu et al. were aiming to explore sleep patterns at the population level for this study, providing a basis for additional future studies to be conducted.

Works Cited

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