The Dark Side of the Quarantine: Night Eating, Sleep Quality and the Health Locus of Control in Women

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Abstract

Aims: Staying at home for a prolonged period and the stress experienced due to the COVID-19 quarantine may affect sleep quality and night eating behaviours of individuals. This study aimed to identify the relationship between night eating behaviour, sleep quality, and perceptions of health locus of control in women during the pandemic. Methods: A questionnaire form evaluating demographic information, nutritional habits, health information and anthropometric measurements was conducted along with the Night Eating Syndrome (NES) Scale, Pittsburgh Sleep Quality Index (PUKI), and Multidimensional Health Locus of Control (A) form. Results: With a mean age of 33.0 ± 8.0 years 529 women participated in the study. The mean night eating scale score was 14.44 ± 4.72 and the mean PUKI score was 6.44 ± 2.90. Higher night eating scores were observed in participants with a chance locus of control perception when compared to participants with internal health locus of control perception ($p < .05$). Obese participants have lower sleep quality compared to normal and overweight participants ($p < .05$). It was also found that night eating behaviours significantly predicted sleep quality ($R = .364$, $R2 = .133$; $p < .01$) and explained about 13.3 % of the total variance of sleep quality. Conclusion: In this study conducted during the quarantine period, we showed that night eating behaviours significantly predict sleep quality, and individuals with a high perception of chance locus of control had a higher night eating scores than individuals with high perception of internal health locus of control.

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Results: With a mean age of 33.0 ± 8.0 years 529 women participated in the study. The mean night eating scale score was 14.44 ± 4.72 and the mean PUKI score was 6.44 ± 2.90. Higher night eating scores were observed in participants with a chance locus of control perception when compared to participants with internal health locus of control perception ($p < .05$). Obese participants have lower sleep quality compared to normal and overweight participants ($p < .05$). It was also found that night eating behaviours significantly predicted sleep quality ($R = .364$, $R^2 = .133$; $p < .01$) and explained about 13.3 % of the total variance of sleep quality.

Conclusion: In this study conducted during the quarantine period, we showed that night eating behaviours significantly predict sleep quality, and individuals with a high perception of chance locus of control had a higher night eating scores than individuals with high perception of internal health locus of control.

Keywords : COVID-19, quarantine, night eating, sleep quality, health locus of control, Turkey

What is known?

1. The quarantine application due to the COVID-19 pandemic caused various changes in the social lives of individuals.
2. Staying at home continuously caused changes in the nutritional and exercise habits and sleeping hours of the individuals.
3. Stressful events may increase the risk of night eating syndrome in obese individuals.
4. Individuals with high perception of internal health locus of control are associated with positive health behaviours.

What is new?

1. Lower sleep quality was observed in participants who did not engage in physical activity compared to those who did.
2. Obese participants sleep quality score was lower than normal weight participants.
3. Night eating scores are higher in individuals with a high perception of chance locus of control than individuals with high perception of internal health locus of control.
4. Night eating behaviours significantly predict sleep quality.

INTRODUCTION

The novel coronavirus was first reported in November 2019 but soon spread across the world. The outbreak was declared a pandemic by March 2020. As of February 2021, the virus has claimed more than 2.4 million lives worldwide and infected more than 109 million people[1] . To control the transmission of the coronavirus disease-19 (COVID-19), the Turkish Government has implemented both full and partial quarantine policies. These regulations have caused dramatic changes in individuals' lifestyles by causing economic and social concerns as well as increasing existing health concerns [2]. Quarantine and social isolation negatively affect daily routine, social relationships, and lead to a need for physical contact with others[3]. A decline in job performance, low concentration, insomnia, lethargy and low mood can all be regarded as the negative effects of quarantine. The coexistence or increase in severity of these symptoms causes post-traumatic stress disorder, depression and anxiety [2]. Studies evaluating quarantine practices over the past few years have shown that quarantining and isolation cause psychological problems[4,5]. Fear of death can also lead to the development of depression in individuals in quarantine. Additionally, the uncertainty of the process and fake news in the media can result in further stress. Isolation brings anger, anxiety and loneliness and it is against human nature [6].

Stress can stimulate eating alone and affect body weight by causing cortisol secretion through the activation of the hypothalamic-pituitary-adrenal (HPA) axis. Moreover, it can reduce the sensitivity of the brain to leptin by strengthening the reward pathway[7]. Stress affects the brain regions responsible for self-regulation that are required to control one's behaviour, such as eating and physical activity, which are important for weight control[8]. As a result, stress and depression cause disorders in individuals' eating patterns [9]. Apart from the stress during the lockdown, constantly staying at home and stocking up on food due to grocery shopping restrictions can also cause eating disorders [10]. Additionally, interruption of daily routines can cause boredom, which is also associated with a greater energy intake [11].

Disruption of the daily routine causes changes in sleeping and waking hours. The stress and anxiety due to lockdown, as well as the flexible hours of being at home and/or remote working, can affect the sleep quality of individuals [12,13]. The deterioration of sleep quality causes circadian rhythm anomalies, negatively affecting mental health and increases the susceptibility to anxiety and depression in individuals [14]. Likewise, the presence of depression affects sleep quality, and this situation causes a vicious cycle [15]. Meanwhile,

the circadian system plays a crucial role in the temporal regulation of food intake and metabolism. Eating and sleep circadian rhythms are often compatible. Therefore, energy homeostasis continues with changes in glucose balance and appetite, despite night eating habits [16]. With the night eating syndrome (NES), the eating and sleep rhythms of the person are disrupted [17]. Circadian disorders lead to leptin resistance [18] independent of other risks, as well as an increase in food consumption by affecting hunger hormones[19].

It was reported that prolonged time spent at home and delayed sleeping/waking hours caused changes in eating behaviour and mealtimes[20]. Depression, stress, anxiety, and negative emotions may lead to an increase in night eating [21,22]. Patients diagnosed with NES have reported that it often began during a stressful period in their lives [23,24]. Therefore, NES can be an important indicator of stress [25].

Locus of control is a concept that characterizes a person's belief in attributing the results of events occurring in one's life to their control and power, or external forces such as chance and fate[26]. The health locus of control, on the other hand, is a measurement tool that measures a person's belief about who has control over health consequences of the disease [27]. People with internal health locus of control (IHLC) are active people who believe they can control the disease process and outcome with the actions they take. On the contrary, people who believe that luck and fate can control everything and believe that external forces affect their lives more do not believe that the actions they take to improve their health will have an effect on their disease [28]. While individuals with IHLC are associated with positive health behaviours (such as health knowledge and good psychology), individuals with external health locus of control are linked with negative health behaviours [29].

This study aimed to determine the relationship between individuals' sleep quality, night eating behaviours and health locus of control perceptions during the quarantine period.

SUBJECT & METHODS

Participants and Procedure

The study was conducted between April and May 2020 with 529 female participants aged between18-65 (33.0 ± 8.0 years). The study data were collected using online questionnaires. The questionnaire forms were uploaded to Google Forms and distributed to the participants through various social media tools. Participants were only able to fill the questionnaires out once.

After informing the participants about the purpose of the study consent was obtained for each individual. The study adhered to the Declaration of Helsinki protocols (World Medical Association, 2008). Shift workers were not included in the study. The questionnaire prepared by the researchers was first administered to 50 participants as a pilot study, and the incomprehensible items were reviewed. The study was approved by the Ethics Board of Scientific Research and Publication of Ankara Medipol University (AMU-GOKAEK-number:0029).

Instruments

A form containing questions created by the researchers and a questionnaire form comprising a total of 3 scales were used to evaluate night eating behaviours, sleep quality and health locus control.

The revised questionnaire was divided into five sections:

1. A questionnaire including demographic information (age, gender, education and occupation)
2. A questionnaire evaluating nutritional habits, health information and anthropometric measurements
3. The Night Eating Syndrome Questionnaire (16 items)
4. The Pittsburgh Sleep Quality Index (PSQI) (24 items)
5. Multidimensional Health Locus of Control Scale A (18 items)

Participants filled in the questionnaire in approximately 25 minutes using either their personal computers or mobile phones.

Anthropometric Measurements

Due to the quarantine conditions, body weight and height values of the individuals were self-reported by the participants. Body mass index (BMI) was calculated by dividing the self-reported weight (in kg) by height (in m^2). Participants were then classified into four categories, according to their BMI: underweight (<18.5 kg/m^2), normal weight (18.5–24.9 kg/m^2), overweight (25.0–29.9 kg/m^2), and obese ([?]30.0 kg/m^2)[30].

The Night Eating Syndrome Questionnaire

The Night Eating Questionnaire is used to assess the risk of NES. Consisting of 16 questions, the Night Eating Syndrome Questionnaire was developed by Allison et al. [22] and adapted into Turkish by Atasoy et al. [31]. The questionnaire consists of questions about morning appetite and the first meal of the day, evening and nocturnal ingestion, the ratio of food intake after dinner, food cravings, controlling overnight eating behaviour, difficulty in falling asleep, frequency of waking up to eat, awareness and mood during nocturnal ingestions. Items except the 7th are rated between 0-4 and the total score ranges between 0-52. Scores above 25 are indicative of NES whereas scores below 25 are suggestive of not having NES.

In the present study, Cronbach's alpha was found to be .63, which was considered acceptable.

The Pittsburgh Sleep Quality Index

The Pittsburgh Sleep Quality Index (PSQI) is an effective instrument used to measure the quality and patterns of sleep in adults. The index was developed by Buysse et al. [32]in 1989 and Ağargün et al. [33] carried out the validity and reliability study of the index. It consists of 19 questions each of which has 7 items rated between 0-3. These items are subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disorder, sleeping pill use and daytime dysfunction. The total PSQI score is obtained by the sum of seven items ranging between 0-21. High scores are associated with poor sleep quality and high levels of sleep disorder. More specifically, scores 5 and above are indicative of clinical poor sleep quality.

Multidimensional Health Locus of Control Scale A

The Multidimensional Health Locus of Control (MHLC) was developed by Wallson [34]. Its validity and reliability were conducted by Güzel et al. [35]. The questions in the MHLC A form are intended to determine whether individuals adopt more internal control, chance control, or control of other powerful people (healthcare professionals, family and friends) in their health behaviour and include the following three factors:

- Internal Health Locus of Control (IHLC): I can control my health.
- Chance Health Locus of Control (CHLC): Luck plays a big role in determining when I will recover from the disease.
- The Powerful Others Health Locus of Control (PHLC): I should consult a healthcare professional when I feel unwell.

The MHLC A form consists of 18 items that are 6-point Likert type. This form, which aims to evaluate perceptions about internal control, external control (chance) and the control of other powerful people, is divided into three sub-dimensions consisting of six items. The degree of participation in the statements in the items is scored from 1 to 6. The average total of participation in items is 36 and 6 is the lowest. Averages for the locus of control perception levels are evaluated among these scores. Each sub-dimension in the scale is scored independently from each other. As a result of scoring, the dimension having the highest score is considered as the centre that controls health[34,35]. In the present study, Cronbach's alpha was found to be 0.87, which was considered acceptable.

Data Analysis

Statistical analysis of the data was performed by Statistical Package for Social Sciences (SPSS) software version 22.0 (SPSS Inc., Chicago, IL, USA). The data analysis process started by examining descriptive values obtained from individuals' NES and PSQI scales. After this process, the mean scores of the scales were compared in terms of age, BMI, chronic diseases status, educational status, smoking, smoking in quarantine, alcohol use, doing physical activity in quarantine, evaluating the change in energy intake in quarantine and type of health locus of control. Based on the results obtained, in cases where the scores did not show a

normal distribution, the Mann Whitney U test was used if there were two sub-levels, and the Kruskal Wallis H test was used if there were more than two sub-levels. Simple linear regression analysis was performed to determine whether night eating scores were a significant predictor of Pittsburgh Sleep Quality scores. *P*values of less than .05 were statistically significant.

Results

Table 1 shows the demographic characteristics of the participants. The majority of participants had a normal BMI (n = 236) which was followed by overweight (n = 194), obese (n = 90) and underweight (n = 9) participants. The education level of the majority of participants was at the undergraduate (n = 335) level. It was observed that a significant number of participants did not smoke (n = 470) or drink alcohol (n = 517).

Table 1 is here

Table 2 is here

The scores of the Night Eating Questionnaire and Pittsburgh Sleep Quality Index have been given in Table 2.

Table 3 is here

The participants' night eating scores varied in a statistical significance according to their age, change in energy intake during the quarantine, and health locus of control perceptions (p <0.05). On the other hand, it was observed that it did not differ significantly according to their or their educational levels. Considering the age groups, it was found that the participants between the ages of 28-32 had more night eating behaviours compared to the participants aged 39 and over. The participants who reported increased daily energy intake during the quarantine period were found to have higher night eating behaviours compared to those who stated their energy intake decreased or did not change (p = .000). The participants with chance locus of control were found to have higher night eating scores (p <.05) compared to the ones with internal health locus of control or other powerful people.

Table 4 is here

Higher night eating scores were observed in participants with chronic diseases when compared to those without chronic diseases and in participants who did not engage in physical activity when compared to those who did engage in physical activity (p <.05, p <.005, respectively). On the other hand, it was observed that the night eating scores of the participants did not differ significantly according to their smoking status (U = 12985.0; p> .05) or alcohol consumption (U = 2830.0; p> .05), (Table 4).

Table 5 is here

Obese participants were found to have lower sleep quality when compared to participant that were of normal weight or overweight ($\chi 2$ = 12.754, p =.005). It was also found that the sleep quality of the participants who declared an increase energy intake during the quarantine was lower to that of the participants that stated their energy intake decreased or did not change (p <0.05). In other respects, PSQI scores of the participants did not show statistically significant difference according to age (p> 0.05), educational levels (p> 0.05), smoking status during the quarantine (p> 0.05), and health locus of control (p> 0.05), (Table 5).

Table 6 is here

When the groups with significant differentiation in terms of sleep quality were examined, it was found that the participants with chronic diseases had lower sleep quality than those without chronic diseases (p <0.05). Additionally, the sleep quality of participants who did engage in physical activity during the quarantine was found to be better than those who did not (p <.005), (Table 6).

Table 7. is here

According to the simple linear regression analysis results for predicting sleep quality according to the night eating questionnaire scores found that night eating behaviour significantly predicts sleep quality (R = .364,

R^2 = .133; p <.01) and explains about 13.3% of its total variance. According to the t-test result regarding the significance of the regression coefficients, it was seen that night eating behaviour is a significant predictor of sleep quality (Table 7).

Discussion

The practice of quarantine due to the COVID-19 pandemic has caused individuals to stay at home for long periods, which has led to a decrease in social relations, interrupted work routine and created physical inactivity[2,36]. Negative media coverage and anxiety concerning the disease has caused an increase in the stress levels of individuals . Stress is associated with binge eating[37] and NES [22]. Vander Wal et al.[38] put forth that in accordance with the affect regulation model of binge eating [39], mood disorders due to perceived stress or stressful life events potentially trigger binge eating events in NES as a coping response.

Stress caused by COVID-19 alone does not cause binge eating[25] but when it is accompanied by long periods of staying at home and changes in sleep patterns, it can lead to binge eating [12]. It is suggested that a score above 25 is indicative for the diagnosis of NES [22] in the current study, the average night eating score was 14.44 ± 4.72. Although some of the individuals in our study did have scores of 25 and above, we can generally say that night eating behaviour was not common in our sample. The fact that most of the individuals in our sample continued their routine work and practiced "partial" quarantine could be the reason behind this finding.

While gaining weight can cause an individual to sleep until late hours, losing weight can lead to frequent night waking and waking up early in the morning, by shortening sleep time this, in turn, will lead to more food consumption [40]. Although NES was first described in patients with treatment-resistant obesity [24], this relationship is unclear [41]. NES can also be seen in non-obese people. In a review published in 2012, Gallant et al.[42] emphasized that the prevalence of NES was higher in overweight and obese individuals compared to the general population sample. In a recent review that examined the relationship between NES and BMI, it was shown that the relationship between the two was controversial [17]. Similarly, this study demonstrated that there was no significant relationship between night eating scores and BMI. The relationship between NES, type 2 diabetes[43,44] and other psychopathologies[45,46] have been well established. Similarly, in this study participants with chronic diseases were found to have higher NES scores than those without.

Sleep affects immunity [47]. Poor sleep quality can cause many medical disorders [48]. The COVID-19 outbreak can increase disease-induced stress in individuals, increasing sleep disorders and disrupting the normal functioning of the immune system[47]. In a recent study, it was found that the sleep quality of individuals due to the quarantine was deteriorated[49]. Meanwhile, changes in sleep hours and stress may result in disruptions in individuals' circadian rhythms[14] and affect sleep quality [50]. It was reported that young people who thought more about COVID-19 had a more generalized anxiety disorder which was related to poor sleep quality [12]. A study conducted in Germany from the general population found that 36% of the participants had poor sleep quality [51]. In another study conducted in Wuhan, it was reported that individuals' sleep quality and psychological conditions were worse than before COVID-19 [52]. In this study, the average PSQI scores of the participants was found to be 6.44 ± 2.90. Since five points and above is indicative of poor sleep quality[32], this result concludes that sleep quality during the COVID-19 quarantine was generally low. Individuals with chronic diseases are especially at higher risk for COVID-19[53]. In a study in Italy, it was reported that the sleep quality of women and those with chronic diseases was worse[36]. Similarly, this study attested that individuals with chronic diseases had worse sleep quality than individuals without. This situation further increases the risk of COVID-19 in these individuals.

Although some studies claim that there is no relationship between obesity and sleep quality [54,55], others showed that there were related [56]. Besides, a negative relationship between sleep time and fat mass was reported in obese individuals [57]. Similarly, in this study, it was found that the sleep quality of obese individuals was worse than normal or overweight individuals. Moreover, the individuals who reported an increase in energy intake had lower sleep quality and higher NES scores compared to individuals whose energy intake decreased or did not change.

There is a relationship between NES and sleep quality[48,58,59]. In a study conducted with university students, a significant relationship was found between NES and sleep quality [58]. In a study carried out with obese individuals in the UK, it was found that individuals with NES had lower sleep quality [60]. Another study reported that the sleep quality of individuals with NES was lower [59]. In this study, we showed that night eating behaviour significantly predicted sleep quality.

The locus of control belief, which is that the basis of the decisions made by individuals will affect their behaviours related to health such as regular exercise, healthy eating, moderate alcohol consumption and smoking avoidance. People with diseases such as depression, social phobia, anxiety, and panic attacks have a higher external locus of control perception [61]. The eating function is affected by people's perception of control; it was reported that individuals with internal health locus of control perception consumed healthier foods, tended to make more of an effort to reach accurate information, and were more determined to maintain their diets [62,63]. Also, those who exercised regularly had a high internal health locus of control perception [61,63]; it was reported that those who engaged in fewer sports activities had a higher chance locus of control perception [64]. Studies show that there is a relationship between individuals' locus of control and health improvement behaviour [62,65]. In a study, poor sleep quality was found to be associated with chance locus of control perception [66]. Although no relationship was found between sleep quality and health locus of control in this study, it was found that individuals with high chance control of locus perception had higher NES scores than individuals with high internal health locus of control perception. This finding can be explained by the possibility that NES can be triggered by stress and individuals with high chance control locus of perception may have more stressful lives.

Conclusion

In this study in which quality of sleep, night eating behaviour and control locus of the individuals during the quarantine were examined, it was found that participants' NES scores were low while their PSQI ratios were high. It was found that night eating behaviour significantly predicted sleep quality. It was also determined that the individuals with high chance locus of control perception had higher NES scores than the individuals with high internal locus of control perception. There is a need for more studies with more participants to strengthen this relationship.

Limitations of the study

- As the study was carried out online, we were only able to reach literate internet users.
- The study was only conducted on women, as such the results cannot be generalised
- The data obtained in the study were based on the participants' own statements.
- Under normal circumstances a period of at least 3 months is required for the diagnosis of NES, conducting the study in a shorter period due to the quarantine period is one of the other limitations of the study.

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Conflict of interest

The authors declare no conflict of interest.

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TABLE 1 Demographic characteristics of the participants (n=529)

Variables		**n**	**%**
Age (year)	16-27	134	25.3
	28-32	135	25.5
	33-38	136	25.7
	39 and above	124	23.4
Body Mass Index	Underweight	9	1.7
	Normal	236	44.6
	Overweight	194	36.7
	Obese	90	17.0
Chronic Disease	Yes	207	39.1
	No	322	60.9
Educational Level	Primary school	11	2.1
	Middle school	18	3.4
	High school	86	16.3
	College	335	63.3
	Postgradute	79	14.9
Smoking Status	Yes	59	11.2
	No	470	88.8
Alcohol Consumption	Yes	12	2.3
	No	517	97.7

TABLE 2 Evaluation of the night eating questionnaire and Pittsburgh Sleep Quality Index

Scale	**Min**	**Max**	**X**	**SD**
Night Eating Questionnaire	4	30	14.44	4.72
Pittsburgh Sleep Quality Index	1	15	6.44	2.90

TABLE 3 Evaluation of the night eating scores according to age, BMI, educational level, daily energy

intake, health locus of control variables [+]

Variable	Level	n	Mean Rank	df	χ^2	p	Sig. Difference
Age (year)	16-27 (1)	132	261.61	3	9.427	**.024**	(2-4)
	28-32 (2)	135	286.60				
	33-38 (3)	133	261.38				
	39 and above (4)	120	228.94				
BMI	Underweight (1)	9	268.61	3	3.868	.276	-
	Normal (2)	235	246.25				
	Overweight (3)	189	266.38				
	Obese (4)	85	279.86				
Educational Level	Primary school (1)	11	309.86	4	3.378	.497	-
	Middle school (2)	18	294.08				
	High school (3)	86	243.88				
	College (4)	328	264.11				
	Postgraduate(5)	79	255.66				
Energy Intake	Increased (1)	219	272.65	2	38.263	**.000**	(1-2), (1-3), (2-3)
	Decreased (2)	126	213.73				
	Not changed (3)	121	183.24				
Health Locus of Control	Internal control (1)	326	254.93	2	6.785	**.034**	(2-1), (2-3)
	Chance control (2)	61	310.02				
	Powerful others (3)	139	263.19				

BMI: Body mass index. Bold values are statistically significant at $p < 0.05$.

TABLE 4 Night eating scores according to chronic disease, smoking and alcohol consumption

Variable		n	Mean Rank	Sums of Ranks	U	p
Chronic Disease	Yes	207	281.51	58272.50	29909.5	**.046**
	No	322	254.39	81912.50		
Smoking Status	Yes	59	279.92	16515.00	12985.0	.425
	No	470	263.13	123670.00		
Alcohol Consumption	Yes	12	242.33	2908.00	2830.0	.602

Variable		n	Mean Rank	Sums of Ranks	U	p
	No	517	265.53	137277.00		
Physical Activity	Yes	191	239.35	45715.00	27379.0	**.004**
	No	338	279.50	94470.00		

Bold values are statistically significant at $p < 0.05$.

TABLE 5 Pittsburgh Sleep Quality Index scores according to age, BMI, educational level, energy intake and health locus of control variables

Variable	Level	n	Mean Rank	SD	χ^2	p	Sig. differences
Age (year)	16-27 (1)	134	274.24	3	3.254	.354	-
	28-32 (2)	135	244.89				
	33-38 (3)	136	269.13				
	39 and above (4)	124	272.38				
BMI	Underweight (1)	9	305.94	3	12.754	**.005**	(2-4), (3-4)
	Normal (2)	234	246.78				
	Overweight (3)	192	258.24				
	Obese (4)	90	311.02				
Educational Level	Primary school (1)	11	306.77	4	6.064	.194	-
	Middle school (2)	18	282.92				
	High school (3)	86	230.34				
	Graduate (4)	335	270.48				
	Postgraduate(5)	79	269.60				
Energy Intake	Increased (1)	221	253.36	2	6.859	**.032**	(1-2), (1-3)
	Decreased (2)	127	220.19				
	Not changed (3)	123	221.12				
Health Locus of Control	Internal control (1)	326	267.71	2	1.876	.391	
	Chance control (2)	61	274.36				
	Powerful others (3)	139	248.85				

BMI: Body mass index. Bold values are statistically significant at $p < 0.05$.

TABLE 6 Pittsburgh Sleep Quality Index scores according to chronic disease, smoking status, alcohol consumption and physical activity variables

Variable		n	Mean Rank	Sum of Ranks	U	p
Chronic Disease	Yes	207	281.51	58272.50	29909.5	**.046**
	No	322	254.39	81912.50		
Smoking Status	Yes	59	279.92	16515.00	12985.0	.425
	No	470	263.13	123670.00		
Alcohol Consumption	Yes	12	242.33	2908.00	2830.0	.602
	No	517	265.53	137277.00		
Physical Activity	Yes	191	239.35	45715.00	27379.0	**.004**
	No	338	279.50	94470.00		

Bold values are statistically significant at $p < 0.05$.

TABLE 7 Simple linear regression results for predicting Pittsburgh Sleep Quality

Variable	**B**	**SE**	**β**	**T**	**P**
Constant	3.209	.378		8.486	.000
Night Eating Questionnaire	.224	.025	.364	8.982	.000
R =.364	R^2=.133				
$F_{(1,527)}$=80.682	p=.000				