ABSTRACT

OBJECTIVE: The purpose of this study is to examine the emotional appetite statuses, eating attitudes and sleep quality of healthcare professionals and the relationships of these with body composition.

MATERIAL AND METHODS: This is a study which is based on the relational screening model. The population of the study consisted of all personnel working at the Private Çorum and Private Elitpark Hospitals located in the province of Çorum in Turkey. The study included 210 (40%) healthcare professionals from the Private Çorum Hospital and 325 (60%) from the Private Elitpark Hospital, constituting 535 participants in total. The study included a sociodemographic information form that questioned the descriptive and nutrition-related information of the participants, the Emotional Appetite Questionnaire (EMAQ) that determined their emotional appetite statuses, the Eating Attitudes Test (EAT) that determined their eating attitudes and the Pittsburgh Sleep Quality Index (PSQI) that determined their quality of sleep.

FINDINGS: According to the results that were obtained in the study, the group with the highest BMI values based on their profession consisted of other healthcare personnel (28.6%). The individuals with high negative situation (7.53 ± 1.33, F = 23.746, p = 0.000) and high negative emotion (7.99 ± 1.17, F = 84.444, p = 0.000) appetite levels had higher BMI values. In terms of their emotional appetite statuses, the group with the highest negative emotion (7.05 ± 1.58, F = 3.108, p = 0.001) and negative situation (7.31 ± 1.34, F = 5.188, p = 0.000) scores was “other healthcare personnel”. The personnel with low sleep quality also had high BMI values (83.1%) (χ² = 8.311, p = 0.040). The group with the highest rate of sleep disorders (66.9%) was nurses (χ² = 18.661, p = 0.001). The individuals with eating attitude disorders had high BMI values (92.2%) (χ² = 20.395, p = 0.000). The profession with the highest rate of eating attitude disorders (66.9%) was “other healthcare personnel” (χ² = 18.661, p = 0.001). The individuals with disrupted sleep quality (53.7%) also had disrupted eating attitudes (χ² = 17.661, p = 0.001).

CONCLUSIONS: The participants who had high negative situation and negative emotion scores had higher BMI levels, and the ones with the highest BMI values and highest negative emotion and negative situation values were other healthcare personnel. Individuals with low sleep quality and eating disorders had higher BMI levels, nurses had the highest rates of sleep disorders, and other healthcare personnel had the highest rates of eating disorders. Individuals with disrupted sleep quality were also found to have disrupted eating attitudes.

Introduction

Obesity is an important public health problem of today that is increasingly becoming more prominent everyday [1]. Obesity is defined by the World Health Organization (WHO) as accumulation of fat in the body to an extent that creates health problems [2]. In addition to physiological, biochemical, neurological, psychological and genetic characteristics, several sociocultural and environmental factors are also prominent in relation to each other in obesity development [3,4]. Eating attitudes and behaviors are also among the most important factors that trigger obesity. While there are differences among individuals, a person may show emotional eating behavior in cases of sadness, stress, anger or loneliness [5]. The relationships of individuals with foods may vary based on their mood [6]. Emotions have a very strong effect on food preference and formation of dietary habits [7,8]. Several studies have supported the relationship among eating behaviors, emotions and increased energy intake [9–11]. An emotion is a psychophysiological state that emerges as a result of interaction of biochemical and environmental factors and involves perception by the senses. Emotional hunger refers to entry into a cycle of hunger by the influence of emotions even physiological fullness is achieved following hunger perceived by the senses [12]. The concept of emotional hunger is concerned with the state of consuming food noticed by emotions...
Types of emotional hunger lead to food consumption although homeostatic eating has been completed in eating episodes caused by negative emotions. In this present study, we aimed to examine healthcare professionals’ emotional appetite statuses, eating attitudes, and sleep qualities and determine the relationships between these parameters and obesity. This is a study that was based on the relational screening model. Relational screening models are research models that aim to determine whether or not there is a simultaneous change in two or more variables and the degree of such a change, and the relationships that are found by screening cannot be interpreted as a causality relationship.

### Methods

#### Study participants

The population of the study consisted of all personnel working at the Private Çorum and Private Elitpark Hospitals located in the province of Çorum in Turkey. The study included 210 (40%) healthcare professionals from the Private Çorum Hospital and 325 (60%) from the Private Elitpark Hospital, constituting 535 participants in total. The participants were categorically divided into groups as doctors, nurses, allied healthcare personnel (dietician, physiotherapist, biologist, psychologist, pharmacist, anesthetist, technical personnel of laboratory and imaging services), administrative personnel (manager, human resources, others working at other administrative jobs) and other healthcare personnel (cleaning, security, food, technical issues, cafeteria and porter). The participants were included on the bases of being 18–65 years old and being employed at the aforementioned hospitals. Those who had communication problems or diagnosed psychiatric disorders were excluded. For making this distinction, the researchers asked the potential participant whether or not they had a diagnosed psychiatric disorder, and they included those who responded as “no”. The sociodemographic information of the participants is shown in Table 1.

#### Data collection

Institutional permissions were obtained from the relevant institutions for the study to be carried out, and the questionnaires were applied after receiving approval from the Scientific Research and Publications Ethics Board at Bahçeşehir University with the decision date of February 13th, 2019 and number of 2019/02. Hospital administration helped in application of the questionnaire and scales, and after speaking to the healthcare personnel working at the two hospitals about the objective of the study, those who agreed to
participants were given the forms, asked to answer questions and fill out the questionnaires after they provided signed informed consent forms. Moreover, for those who did not want to answer in interviews, the forms were given to the participants to be collected one week later. This study was carried out in compliance with the principles of the Declaration of Helsinki. The heights of the participants were measured by a measuring tape while they were standing upright, their legs were slightly separated, their weights were equally distributed between the legs, and their thigh muscles were not contracted. Their weights were measured by a Tefal Premiss model (Capacity: 150 kg, Sensitivity: 100 g) device.

**Psychometric instruments**

The study included a sociodemographic information form that questioned the descriptive and nutrition-related information of the participants, the Emotional Appetite Questionnaire (EMAQ), the Eating Attitudes Test (EAT) and the Pittsburgh Sleep Quality Index (PSQI), which determined their quality of sleep.

**Pittsburgh Sleep Quality Index**

PSQI is a 19-item self-reported scale that assesses sleep quality and disorders in a time interval of one month [27] developed by Buysse et al. and tested for reliability and validity for Turkish by Ağargün et al. [28]. All items of the scale are scored in the interval of 0–3. The scale consists of 7 sub-scales that measure subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication and daytime dysfunction. By summation of the scores of the sub-scales, the total PSQI score is obtained in the range of 0–21. A total PSQI score of higher than 5 indicates by 89.6% sensitivity and 86.5% specificity that the sleep quality of the individual is insufficient, and there is disruption on a serious level in at least two and a moderate level in at least three of the aforementioned components [29]. The Cronbach alpha internal consistency coefficient of the scale was 0.830.

**Emotional Appetite Questionnaire (EMAQ)**

It was developed by Nolan et al. [30]. In the scale which aims to assess emotional eating, participants score the level of the statements in each item to affect their appetite as less [1–4], the same [5] and more [6–9]. Presence of emotional eating is assessed in cases of positive/negative emotions (14 items) and positive/negative situations (8 items). This scale consists of a total of 6 factors as emotional eating negative emotion (items 1, 2, 4, 5, 7, 8, 9, 10 and 13), negative situation (items 15, 16, 17, 19 and 20), positive emotion (items 3, 6, 11 and 14), positive situation (items 18, 20 and 22), emotional eating negative total and emotional eating positive total. Additionally, if the total score is in the range of 1–4, this means decreased emotional appetites, while results of 5 and higher than 6 respectively indicate unchanged emotional appetite and increased and disrupted emotional appetite. The Cronbach alpha internal consistency coefficient of the scale was 0.871.

**Eating Attitudes Test (EAT)**

It is a self-reported scale that was developed in 1979 by Garner and Garfinkel. While it is used in clinical assessment, it is also used as a screening tool to determine cases of previously undiagnosed anorexia nervosa in communities that are considered to be high-risk. It was tested for validity and reliability in Turkish by Savaşır and Erol in 1989. It is a 40-item, 6-point Likert-type scale. Among the items, items 1, 18, 19, 23, 27 and 39 are scored “sometimes” for 1 point, “rarely” for 2 points and “never” for 3 points, while other options are scored as 0 points. For the other items of the scale, scoring is made for “very frequently” as 1 point and “always” as 3 points, while other options are scores as 0 points. As a result, the total score of the scale is obtained by calculating the scores obtained from all items in the scale [31]. The cutoff point in the Turkish version of the scale was found as 30. While EAT may be used to determine individuals who may be considered “ill” on a clinical level, it may also be used to assess how prone to this disorder a person is. EAT scores are used as continuous variables, and possible eating disorders are analysed by grouping in terms of their presence as “yes” or “no”. Those with a total EAT score of 30 or higher are accepted to have “disrupted eating”, while others with scores of under 30 are considered to have “normal eating” attitudes [32]. The Cronbach alpha internal consistency coefficient of the scale was 0.826.

**Statistical analysis**

The BMI values of the participants were classified based on the BMI classification made by the World

| Table 1. Sociodemographic information of the participants. |
|-----------------|-------|----------------|
| Variables       | n     | %               |
| Female          | 323   | 60.4            |
| Male            | 212   | 39.6            |
| Total           | 535   | 100.0           |
| Marital status  |       |                 |
| Married         | 269   | 50.3            |
| Single          | 266   | 49.7            |
| Occupation      |       |                 |
| Doctor          | 71    | 13.3            |
| Nurse           | 118   | 22.1            |
| Allied healthcare personnel | 131 | 24.5 |
| Administrative personnel | 91  | 17.0 |
| Other healthcare personnel | 124 | 23.2 |
| BMI             |       |                 |
| Underweight     | 15    | 2.8             |
| Normal          | 207   | 38.7            |
| Overweight      | 236   | 44.1            |
| Obese           | 77    | 14.4            |
| Total           | 535   | 100.0           |
Health Organization [33]. The BMI values were calculated by dividing the body weight (kilogram) of each participant by their height (metres) squared [33]. The data were analysed by using SPSS 21.0 for Windows. Normal distribution of the data was tested first, and as a result of the data showing normal distribution, parametric tests were used. The data obtained from the participants were analysed, the results were organized in the form of tables and charts, and for this, frequency, percentage, mean value, crosstabs and Chi-squared analyses were carried out. Based on the professions of the participants, the relationships of their BMI values and their parameters of sleep quality, emotional appetite and eating attitudes were analysed. As the data were normally distributed based on the results of normality testing, the parametric tests of t-test, ANOVA and post hoc test were utilized. Chi-squared test was carried out to analyse the categorical data. A p-value less than 0.05 was considered statistically significant.

Results

Among the healthcare personnel who participated in this study, 60.4% were female, 39.6% were male, 50.3% were married, and 49.7% were single. Occupational distribution was as the following: 13.3% doctors, 38.7% nurses, 24.5% allied healthcare personnel (dietician, physiotherapist, biologist, psychologist, pharmacist, anesthetist, technical personnel of laboratory and imaging services), 17% administrative personnel (manager, human resources, others working at other administrative jobs) and 23.2% other healthcare personnel (cleaning, security, food, technical issues, cafeteria and porter). Additionally, the participants’ BMI values were calculated, and 2.8% of the participants were underweight, 38.4% normal, 44.1% were overweight, and 14.4% were obese (Table 1).

There was a significant relationship between the BMI values of the participants and their occupational groups ($\chi^2 = 41.288$, $p = 0.000$). The groups based on their BMI values from the highest to the lowest may be listed as other healthcare personnel (28.6%), allied healthcare personnel (26%), nurses (24.7%), administrative personnel (14.3%) and doctors (6.5%) (Table 2).

No significant difference was found in the participants’ statuses of sleep quality based on their occupational groups ($\chi^2 = 10.993$, $p = 0.027$). The group with the worst sleep quality included nurses by 79.7%. The group of nurses was followed by the groups of other healthcare personnel (78.9%), allied healthcare personnel (74.7%), doctors (69.5%) and administrative personnel (62.9%) (Table 3).

In the group with the highest BMI levels (obese) based on the groups formed on body mass index levels, the negative emotion and situation scores were found to be higher, and it was found that the negative emotion ($F = 84.444$, $p = 0.000$) and negative situation ($F = 23.746$, $p = 0.000$) mean scores differed significantly based on BMI. In the groups with higher BMI levels (obese and overweight), the total negative emotional appetite scores were high, and the mean total negative emotional appetite score differed significantly based on BMI ($F = 76.241$, $p = 0.000$) (Table 4).

The differences among the occupations based on their emotional appetite levels were insignificant regarding the dimensions of negative emotion ($F = 3.108$, $p = 0.001$) and situation ($F = 5.188$, $p = 0.001$). Based on their negative emotion and situation mean

| Personnel | Nurse | Other healthcare personnel | Allied healthcare personnel | Doctor | Administrative personnel | Total |
|-----------|-------|---------------------------|-----------------------------|-------|--------------------------|-------|
|           | n     | n                          | n                           | n     | n                        | n     |
|           | %     | %                          | %                           | %     | %                        | %     |
| Nurse     | 24    | 94                         | 20.3                        | 79.7  | 15                       | 56    |
| Other healthcare personnel | 21.1 | 78.9                       | 23                          | 68    | 35                       | 62.9  |
| Allied healthcare personnel | 25.3 | 74.7                       | 40                          | 91    | 40                       | 69.5  |
| Doctor    | 46    | 78                         | 37.1                        | 62.9  | 148                      | 38.7  |
| Administrative personnel | 27.7 | 72.3                       | Value                       | 10.993| 0.027                    |

Table 3. Comparison of sleep quality (categorical) based on the occupations of the participants.

Table 2. Distribution of BMI values based on the occupations of the participants.

| Occupation                       | Doctor | Nurse | Allied healthcare personnel | Administrative personnel | Other healthcare personnel |
|----------------------------------|--------|-------|------------------------------|---------------------------|----------------------------|
| BMI                              | n      | %     | n                            | %                         | n                          | %     |
| Underweight                      | 3      | 20.0  | 8                            | 53.3                      | 1                          | 6.7   |
| Normal                           | 24     | 11.6  | 58                           | 28.0                      | 48                         | 23.2  |
| Overweight                       | 33     | 14.0  | 44                           | 18.6                      | 58                         | 24.6  |
| Obese                            | 5      | 6.5   | 19                           | 24.7                      | 20                         | 26.0  |
| Total                            | 71     | 13.3  | 118                          | 22.1                      | 124                        | 22.2  |
| Pearson Chi-squared              | 41.288 | 0.000* |

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scores, the occupational groups may be listed from the highest to the lowest scores as other healthcare personnel, allied healthcare personnel, administrative personnel, followed by nurses and doctors. The total negative emotional appetite levels were the highest in the groups of other healthcare personnel, allied healthcare personnel and administrative personnel, while these levels differed significantly based on the occupations \((F = 3.973, p = 0.003)\) (Table 5).

There was a significant relationship between BMI and sleep quality \((\chi^2 = 8.311, p = 0.040)\). The individuals who had BMI values (obese and overweight) had bad sleep quality. There was a significant difference in the mean total PSQI scores among the underweight, normal, overweight and obese groups \((F = 5.784, p = 0.001)\) (Table 6).

There was a significant relationship between eating attitudes and BMI values \((\chi^2 = 200.395, p = 0.000)\). The group with the highest rate of disrupted eating attitudes had high BMI levels (obese and overweight) (Table 7).

There were significant differences in the eating attitudes among the groups of occupations \((\chi^2 = 18.661, p = 0.001)\), and the group with the highest rate of disrupted eating attitudes was other healthcare personnel by 66.9%, which was followed by nurses (62.1%), allied healthcare personnel (57.1%), administrative personnel (51.9%) and doctors (47.0%) (Table 8).

There was a statistically significant relationship between the sleeping statuses and eating attitudes of the participants \((\chi^2 = 17.661, p = 0.001)\), and those with disrupted sleep quality were found to have disrupted eating attitudes (Table 9).

### Table 4. Comparison of emotional appetite statuses based on BMI.

| Emotional status | BMI       | Mean | SD  | F     | P      |
|------------------|-----------|------|-----|-------|--------|
| Negative emotion | Underweight| 5.67 | 1.56| 84.444| 0.000  |
|                  | Normal    | 5.86 | 1.39|       |        |
|                  | Overweight| 7.56 | 1.28|       |        |
|                  | Obese     | 7.99 | 1.17|       |        |
| Negative situation| Underweight| 5.38 | 1.73| 23.746| 0.000  |
|                  | Normal    | 5.51 | 1.62|       |        |
|                  | Overweight| 7.59 | 1.32|       |        |
|                  | Obese     | 7.53 | 1.33|       |        |
| Positive emotion | Underweight| 4.55 | 1.75| 1.068 | 0.000  |
|                  | Normal    | 4.86 | 1.86|       |        |
|                  | Overweight| 4.75 | 1.87|       |        |
|                  | Obese     | 5.16 | 1.88|       |        |
| Positive situation| Underweight| 5.22 | 1.85| 2.702 | 0.000  |
|                  | Normal    | 5.12 | 1.78|       |        |
|                  | Overweight| 4.73 | 1.62|       |        |
|                  | Obese     | 5.21 | 1.68|       |        |
| Total negative emotional appetite | Underweight| 5.68 | 1.39| 76.241| 0.000  |
|                  | Normal    | 5.88 | 1.22|       |        |
|                  | Overweight| 7.58 | 0.98|       |        |
|                  | Obese     | 7.51 | 1.46|       |        |
| Total positive emotional appetite | Underweight| 4.88 | 1.41| 2.215 | 0.085  |
|                  | Normal    | 4.99 | 1.47|       |        |
|                  | Overweight| 4.74 | 1.43|       |        |
|                  | Obese     | 5.18 | 1.46|       |        |
| Total emotional appetite | Underweight| 5.45 | 0.95| 27.339| 0.000  |
|                  | Normal    | 5.59 | 0.88|       |        |
|                  | Overweight| 6.16 | 0.86|       |        |
|                  | Obese     | 6.47 | 0.83|       |        |

### Table 5. Comparison of emotional appetite statuses based on occupation.

| Emotional status | Occupation            | Mean | SD  | F    | P    |
|------------------|-----------------------|------|-----|------|------|
| Negative emotion | Doctor                | 5.55 | 1.63| 3.108| 0.001|
|                  | Nurse                 | 5.65 | 1.66|      |      |
|                  | Allied healthcare personnel| 6.98 | 1.64|      |      |
|                  | Administrative personnel| 6.90 | 1.41|      |      |
|                  | Other healthcare personnel| 7.05 | 1.58|      |      |
| Negative situation| Doctor                | 5.91 | 1.60| 5.188| 0.000|
|                  | Nurse                 | 5.40 | 1.35|      |      |
|                  | Allied healthcare personnel| 7.12 | 1.75|      |      |
|                  | Administrative personnel| 6.90 | 1.58|      |      |
|                  | Other healthcare personnel| 7.31 | 1.34|      |      |
| Positive emotion | Doctor                | 7.37 | 1.45| 7.307| 0.000|
|                  | Nurse                 | 7.13 | 1.55|      |      |
|                  | Allied healthcare personnel| 5.08 | 1.84|      |      |
|                  | Administrative personnel| 5.30 | 1.53|      |      |
|                  | Other healthcare personnel| 5.04 | 1.80|      |      |
| Positive situation| Doctor                | 4.77 | 2.02| 3.973| 0.003|
|                  | Nurse                 | 4.12 | 1.91|      |      |
|                  | Allied healthcare personnel| 4.84 | 1.87|      |      |
|                  | Administrative personnel| 5.07 | 1.74|      |      |
|                  | Other healthcare personnel| 5.52 | 1.65|      |      |
| Total negative emotional appetite | Doctor                | 5.03 | 1.80| 3.973| 0.003|
|                  | Nurse                 | 4.92 | 1.54|      |      |
|                  | Allied healthcare personnel| 6.34 | 1.55|      |      |
|                  | Administrative personnel| 6.05 | 1.70|      |      |
|                  | Other healthcare personnel| 7.23 | 1.28|      |      |
| Total positive emotional appetite | Doctor                | 5.62 | 1.42| 11.588| 0.000|
|                  | Nurse                 | 5.01 | 1.36|      |      |
|                  | Allied healthcare personnel| 7.14 | 1.12|      |      |
|                  | Administrative personnel| 7.19 | 1.21|      |      |
|                  | Other healthcare personnel| 7.02 | 1.30|      |      |
| Total emotional appetite | Doctor                | 5.08 | 1.54| 3.266| 0.012|
|                  | Nurse                 | 5.41 | 1.39|      |      |
|                  | Allied healthcare personnel| 4.03 | 1.38|      |      |
|                  | Administrative personnel| 6.85 | 1.40|      |      |
|                  | Other healthcare personnel| 7.23 | 1.33|      |      |
Discrimination

In this study, the first and second highest BMI values were found to be among the other healthcare personnel and allied healthcare personnel, respectively. Likewise, in the study by Kyle et al. on healthcare professionals, the highest BMI values were found among other healthcare professionals, who were followed by nurses for this matter [34]. The study by Campos-Matos et al. on healthcare professionals found that the group with the highest rate of obesity was other healthcare personnel, followed by allied healthcare personnel [35]. These high rates of obesity among other healthcare personnel and nurses may be explained by the probability that, as these individuals sometimes have to take night shifts, they may be consuming snacks with high energy content, or they may be eating at late hours at night as they get hungry.

This study found the BMI values of the participants with negative situation and negative emotion levels about their emotional appetite levels higher. Similarly, Bekiroglu [36] and Bourdier et al. [37] found the BMI values higher among those with a negative emotional status. This situation may be explained as that, when individuals become sad and encounter a negative situation, to get away from the emotional status they are in, they may be turning towards eating, and in parallel to increased energy intake, this situation may be leading to increased weight and higher BMI values.

This study found the highest negative emotion and negative situation scores in terms of the participants’ emotional appetite levels among the other healthcare personnel. The group of other healthcare personnel who work in cleaning, security, food preparation, cafeteria services and porter services may have more negative emotions as they have psychologically more exhausting and monotonous jobs in comparison to other occupation groups such as cleaning toilets and the hospital in general, late security shifts, electrical and other repair services, and providing food for inpatients and personnel on time.

In this present study, the BMI values of the participants who had bad sleep quality were found to be higher. In parallel to this result, Spiegel et al. determined higher BMI values among those who had low sleep quality levels [38]. Imaki et al. conducted a study with Japanese factory workers and found higher BMI values among the workers who had low sleep quality [39]. The study by Itani et al. determined among healthcare personnel working in shifts that those with lower sleep quality levels also had higher BMI levels [40]. This may be explained by the possibility that individuals who have low sleep quality levels may be snacking or having a meal in the times they are awake at night due to the disruption of their sleeping-
awakening balance, and in turn, this may be leading to increased BMI values in relation to increased energy intake.

The highest rate of sleep disorders in our sample was found to be among the nurses. Similar previous studies found the sleep quality levels of nurses working in shifts as low [41–43]. The reason for finding lower sleep quality levels in nurses among other healthcare professionals may be that they may experience sleep disorders as they have to check up on their patients at regular intervals through the night when they have to perform their night shift duties.

The individuals in this study who had high rates of disrupted eating attitudes were found to also have high BMI values. Likewise, in the study by Fidan among hospital physicians, the BMI values of participants with high rates of disrupted eating behaviors were found to be high [32]. The studies by Alp [44] and Devlin [45] reported higher BMI values among individuals with high rates of eating disorders. The reason for such a result may be that individuals with disrupted eating attitudes might choose their food irresponsibly, and in parallel to this imbalance in the amount of food they consume, there may be increases in their body weight and BMI values.

The group with the highest rate of disrupted eating attitudes was the other healthcare personnel who work in cleaning, security, technical issues, cafeterias and porter services. An eating attitude may be defined as the tendency that forms all the food-related knowledge, feelings, though and behaviors of individuals [46]. The finding that disrupted eating attitudes were the highest in other healthcare personnel may be explained by the possibility that the individuals working in this occupational category may have insufficient knowledge about adequate, balanced and healthy nutrition, or the individuals in this group may have more negative moods in comparison to others, and thus, they may have disrupted attitudes towards eating.

In this study, the individuals who had disrupted sleep quality were found to be also have disrupted eating attitudes. Individuals with disrupted sleep quality, due to their short sleeping durations and being awake in the process of falling asleep, may believe that they could overcome this process by having food, or they may believe that they feel happier if they eat in this process, which might lead to eating attitude disorders in these individuals.

This present study had certain limitations. First, the hours of availability of the participants for the implementation of this study differed based on their positions and occupations. The participants also had different days of leave and different days and times to start working again. In sum, most of the participants in this study had higher BMI values. The participants who had high negative situation and negative emotion scores had higher BMI levels, and other healthcare personnel had the highest BMI values and highest negative emotion and negative situation scores. The participants with low sleep quality and eating disorders had higher BMI levels, while the highest rates of sleep disorders were in nurses, and the highest rates of eating disorders were in other healthcare personnel. Individuals with sleep disorders also had problematic eating attitudes. It may be concluded that high BMI values were related to high negative situation and emotion scores, low sleep quality and eating disorders, while eating disorders were also related to sleeping disorders. Further studies with larger samples are required to delineate the associations presented in our study.

Disclosure statement

No potential conflict of interest was reported by the authors.

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