

Individuals with Eating Disorder Symptoms Have an Increased Risk of Nightmares

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ABSTRACT

Objective: This preliminary study was aimed to examine if individuals with eating disorder symptoms have a higher incidence of nightmares. Additionally, the possible influence of general psychological distress on the relationship between eating disorder symptoms and nightmares was examined.

Methods: Using a cross-sectional design, 350 university students completed measurements of nightmare frequency, eating disorder symptoms, and psychological distress.

Results: Individuals reporting symptoms of eating disorders were significantly more likely to report frequent nightmares compared to controls. However, when controlling for gender and general psychological distress, eating disorder symptomatology no longer significantly predicted nightmares.

Conclusion: Individuals reporting symptoms of eating disorders are more likely to report nightmares. However, the incidence of nightmares among individuals with eating disorder symptoms appears to be largely affected by gender and levels of general distress. Further research is suggested to extend and replicate these preliminary results among clinical samples. Physicians with patients reporting eating disorder symptoms should consider screening for the presence of nightmares.

Keywords: Nightmares, eating disorders, psychological distress

Öz

Yeme bozukluğu şikayetleri olan bireylerde kabus görme riski artışı

Amaç: Bu ön çalışma, yeme bozukluğu şikayetleri olan bireylerin kabus görme sıklığının daha yüksek olup olmadığını incelemeyi amaçlamıştır. Ayrıca genel psikolojik stresin yeme bozukluğu semptomları ve kabuslar arasındaki ilişkiye olan etkisi incelenmiştir.

Yöntem: Üç yüz elli üniversite öğrencisi, kesitsel bir çalışma tasarımıyla, kabus sıklığı, yeme bozukluğu şikayetleri ve psikolojik stres ile ilgili ölçümleri tamamladı.

Bulgular: Yeme bozukluğu şikayetleri bildiren bireylerin, kontrollere göre, kabus bildirme sıklığı istatistiksel olarak anlamlı düzeyde yüksekti. Ancak, cinsiyet ve genel psikolojik strese göre düzeltildiğinde, yeme bozukluğu şikayetleri kabusları anlamlı olarak yordamadı.

Sonuç: Yeme bozukluğu şikayetleri olan bireylerin kabus bildirme olasılığı daha yüksektir. Bununla birlikte, yeme bozukluğu şikayetleri olan bireyler arasında kabus görme sıklığı, cinsiyet ve genel stres düzeylerinden oldukça fazla etkilenmektedir. Bu ön sonuçların klinik örnekler arasında genişletilmesi ve çoğaltılması için devam araştırmalarının yapılması önerilmektedir. Yeme bozukluğu şikayetleri olan hastaların hekimleri, kabus görme durumunu değerlendirmelidirler.

Anahtar kelimeler: Kabus, yeme bozukluğu, psikolojik stres

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Introduction

Nightmares, disturbing dreams that can be easily recalled upon awakening (1), have been estimated to be a relevant problem for up to 8% of sampled adults from the general population and 26% of patients at sleep medicine clinics (2,3). Despite their relatively high prevalence rate and previous findings that nightmares often affect next day functioning and quality of life (4), as few as 11% of individuals with clinically

significant nightmares report this condition to their physician (5) and physicians often do not routinely inquire about this aspect of sleep disturbance. This is unfortunate given that nightmares are a treatable condition using pharmacotherapy and/or psychotherapy (6,7).

One method to assist in identifying patients with frequent distressing nightmares is to be aware of possible comorbid conditions which can alert busy physicians to the need to

screen patients for this treatable condition. For instance, in previous research, nightmares were associated with a number of conditions regularly managed by physicians including rheumatologic, digestive, and neurological conditions (3), post-traumatic stress disorder (8), schizophrenia (9), depression and suicidality (10), generalized anxiety disorder (11), and various forms of sleep disruption (12). This preliminary study aimed to examine another possible comorbid condition of nightmares encountered by primary care physicians –eating disorders.

Perhaps half of adult eating disorder cases are first diagnosed by primary care physicians (13-14). Eating disorders have been defined as ongoing eating or eating-related behavior, such as bingeing or extreme dieting, resulting in detrimental changes in intake or absorption of food (15,16). Among community samples, especially among women, estimated prevalence rates for eating disorders is relatively high. For example, by mid-life, 15% of women have met established diagnostic criteria for eating disorders (17). Eating disorder symptoms are especially prevalent among college age women. In a survey of over 289,000 students enrolled at universities in the United States, 1.52% self-reported a diagnosis of an eating disorder over the last year, whereas undiagnosed eating disturbances such as use of purging behavior and diet pills were reported by 2.79% and 3.49% of the sample, respectively (18).

At the time of this writing limited research had examined the comorbidity of nightmares and eating disorder symptoms. Nevertheless, there is reason to believe the two may co-occur. Previous research found that negatively toned dreams and distress about bad dreams were significantly more common among individuals meeting criteria for eating disorders (19-21). These studies did not specifically measure nightmares or identify negatively toned dreams as severe enough to be termed nightmares. Nevertheless, these studies do provide some support for the notion that individuals with eating disorder symptoms would report more frequent nightmares. Moreover, given that both nightmares and eating disturbance have been related to the experience of psychological distress (22,23), it was possible that a relationship between eating disorders and nightmares could indicate that nightmares were manifestations of distress among eating disordered patients, rather than a more meaningful, independent relationship between eating disorders and nightmares.

In this preliminary study the relationship between eating

disorder symptoms and nightmare frequency was examined among a university student sample to provide a foundation for subsequent research examining nightmares and eating disorders among clinical samples. Further, general psychological distress was assessed to determine if eating disorder symptoms predict nightmares independently beyond the influence of general psychological distress. University students were considered an acceptable sample for this preliminary study given their frequent reports of both eating disorder symptoms and nightmares and that the aim was to establish a general relationship rather than a specifically clinical relationship (18,24). It was hypothesized that individuals with eating disorder symptoms would have a significantly higher incidence of nightmares than those without eating disorder symptoms.

Material and Methods

Participants and Procedure

Participants included a convenience sample of university students enrolled in introductory psychology courses at a small American university. No exclusionary criteria were used. Therefore, data from all responding participants were included in analyses. Participants were recruited in classroom settings before undergraduate psychology classes to complete a paper and pencil questionnaire on “Personality and Sleep” that included demographic information and the measures described below. No time limits were imposed, but participants completed the study within 10 minutes. Ethics committee approval for this study was provided by the local Institutional Review Board. Written informed consent was obtained and participants were debriefed about the nature of the study after participation.

Measures

Nightmare Frequency: Nightmare Frequency (NF) was measured using Schredl’s (25) single-item assessment whereby participants responded to the prompt “How often do you experience nightmares?” Participants responded by indicating 0 = never, 1 = less than once a year, 2 = about once a year, 3 = about 2 to 4 times a year, 4 = about once a month, 5 = about 2 to 3 times a month, 6 = about once a week, 7 = several times a week. Previous examinations estimated the reliability at .75 (four weeks) (26). The measure’s validity was demonstrated by

correlations with measures to which it hypothetically should relate (25). To provide an analog for individuals who might have clinically significant nightmares, participants reporting one or more nightmares per week were categorized as having a potentially clinically significant nightmare problem (27).

Eating Disorder Symptoms: Symptoms of eating disorders were assessed through completion of the 5-item Eating Disturbance Scale (EDS-5; 28). Reliability has been reported through good coefficient alpha internal consistency (0.83), while validity was evidenced by strong relationships with other measurements of disturbed eating and the ability to distinguish between individuals diagnosed with eating disorders and controls (28). Each item was responded to with a 7-point scale (1="Never", 7="Everyday"). Individual responses were totaled to create a total EDS-5 score; higher scores reflected more symptoms of eating disorders. An EDS-5 sample item is "Have you felt guilty about eating?" To provide an analog for individuals with eating disorders, using the method of Rosenvinge et al (28), a score of at least one standard deviation above the mean (total scores of 25 or higher in this sample) was used to categorize individuals with high eating disorder symptoms. This approach has been reported to satisfactorily discriminate between a clinical eating disorder group and controls with adequate sensitivity and specificity (28).

General Psychological Distress: Measurement of general psychological distress was obtained through the 25-item Distress Index of the Ausburg Multidimensional Personality Instrument (AMPI-DI; 29). AMPI-DI items reflected reactivity to stress, depression, anxiety, somatic, and schizotypal symptoms. Reliability has been reported through coefficient alpha internal consistency (0.92) and test-retest reliability (0.77, one week) (29). Validity was demonstrated through correlations with another measure of global distress and intensity of distress symptoms (29). Participants responded to AMPI-DI items with a 7-point scale (1="Strongly Disagree", 7="Strongly Agree"). Each response was summed to create an AMPI-DI score; high scores indicated more general psychological distress. A sample item is "I become stressed easily."

Statistical Analyses

Given the ordinal measurement scale used for nightmare

frequency, Spearman correlations were used to investigate relationships between variables. In addition to continuous analysis of the data, frequencies of individuals categorized as analogues to having eating disorder symptomatology and clinically significant nightmare problems were compared using chi-square. Finally, ordinal regression was used to investigate the relationship between eating disorders and nightmare frequency while controlling the variance attributed to psychological distress. Results were analyzed using SPSS 24.0 for Windows (IBM Cooperation, New York, USA). Results were considered significant if $p < .05$.

Results

The sample included a total of 350 (188 female, 159 male, 3 unidentified) students who completed the survey. The sample's average age was 18.83 (SD=1.44) years. Consistent with the demographics of the university, 85% of the sample identified themselves as White/Caucasian, 5% as African American, 1% as Hispanic, 3% as Asian or Pacific Islander, and 6% did not specify an ethnicity.

Nightmare frequency, $t(345)=4.17$ ($p < 0.001$), and eating disorder symptoms, $t(345)=9.17$ ($p < 0.001$), but not psychological distress, $t(345)=1.15$ ($p > 0.25$), scores were significantly larger for female than male participants. Participant age was not significantly correlated with any variables, $\rho < 0.08$.

With regards to nightmare frequency among the sample, 10% of the sample reported never experiencing nightmares. Collapsing responses revealed that 8.3% reported experiencing at least one nightmare a week, 39.5% reported nightmares at least once per month, and 69.4% reported nightmares at least once per year (Table 1).

Coefficient alpha reliabilities of the two multi-item scales

Table 1: Frequency of nightmares

Categories	Frequency	Percentage
Never	35	10.0
Less than once a year	37	20.6
About once a year	43	12.3
About 2 to 4 times a year	97	27.7
About once a month	64	18.3
About 2 to 3 times a month	45	12.9
About once a week	20	5.7
Several times a week	9	2.6

Note: N=350

Table 2: Reliabilities, means, and correlations between scales

	2	3	α	M	SD
1. NF	0.37	0.27		3.08	1.75
2. AMPI-DI		0.39	0.91	75.55	24.19
3. EDS-5			0.83	17.13	7.87

Note: N=350. Correlations are Spearman's rho and are significant at $p < 0.001$ (two-tailed). NF= Nightmare Frequency; AMPI-DI= Ausburg Multidimensional Personality Instrument Distress Index. EDS-5= Eating Disturbance Scale-5

were good (Table 2). A significant, positive correlation was observed between nightmare frequency and both psychological distress and eating disorder symptoms. Distress and eating symptoms were also significantly related (Table 2).

Using the cut-off scores described above to create analog eating disorder symptoms and nightmare groups, 79 (22.5%) of the sample were categorized as having high eating disorder symptoms, while 29 (8.3%) were classified as having a significant nightmare problem. Examining the categories, 16 of the 271 (5.9%) participants who were not classified as having eating disorder symptoms had nightmare problems whereas 13 of the 79 with eating disorder symptoms (16.5%) had a nightmare problem. The difference was significant, $\chi^2(1)=8.96$ ($p < 0.01$), Somers' $d=0.15$. The rate of nightmare problems among the group with eating disorder symptoms was almost three times higher than among those without eating disorder symptoms.

To examine the relative ability of eating disorder symptoms and psychological distress to predict nightmare frequency, nightmare frequency as entered as the criterion and eating disorder symptoms and psychological distress as predictors in an ordinal regression. Because it was significantly correlated with nightmares and eating disturbance, gender was also included as a predictor. Gender (standardized estimate=0.65, $\chi^2=8.83$ ($p < 0.003$), $CI=0.22-1.07$, and psychological distress (standardized estimate=0.03, $\chi^2=37.72$ ($p < 0.0001$), $CI=0.02-0.04$, significantly predicted nightmare frequency. However, after controlling gender and distress, eating disorder symptoms did not significantly predict nightmare frequency (standardized estimate=0.02, $\chi^2=1.53$ ($p < .22$), $CI=0.01-0.05$).

Discussion

The current study's results supported the hypothesis. Nightmare frequency was significantly related with eating disorders: individuals with eating disorder symptoms were nearly three times more likely to have frequent nightmares.

However, based on the regression results, though eating disorder symptoms were predictive of nightmares, nightmares were only indirectly predicted by eating disorder symptoms through general distress and gender.

Consistent with previous studies, the current results found negatively toned dreams were related to eating disorders (19-21). Also, consistent with previous findings, the current study found a relationship between general distress and both frequency of nightmares (22,25) and eating disturbance (23,30). Finally, the current findings were consistent with previous findings that general distress and gender can affect the occurrence of nightmares (25,31).

The findings of the current study provided some direction for preliminary conjecture about the relationship between eating disorder symptoms and nightmares which need to be examined in future investigations. For instance, the relationship seems partly to rest on gender and psychological distress; without these variables eating disorder symptoms had little relationship with nightmares. Additional research should examine to enlighten how distress contributes to nightmares and eating disorders symptoms. Perhaps one direction for future investigations could examine the role of the self. For instance, regulating functions of the self (i.e., self-esteem, identity, and affect regulation) might contribute to susceptibility to distress which manifests in general distress, eating disorder symptoms, and nightmares (32-34).

This study had limitations that might affect the generalization of the results. For instance, the sample included a rather homogenous group of American university students. Measurement relied solely on self-report methodology. These limitations make generalization to more heterogeneous community samples or clinical samples difficult. Determining cause-effect relationships is not possible based on the cross-sectional methodology. Finally, the measure of eating disorders did not allow examination of diagnosed eating disorders or differentiate between disturbances in eating restriction or bingeing.

Conclusion

The findings of the current study provide preliminary evidence that individuals with eating disorder symptoms have a higher risk of frequent nightmares. However, eating disorders seem to only predict nightmares through the general experience of psychological distress. Future research should attempt to correct the limitations of the current study and examine possible underlying etiological mechanisms which might account for the relationship between nightmares and eating disorders, such as self-disturbances.

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