

NIGHT EATING SYNDROME: SURVEY OF ASSESSMENT AND TREATMENT  
PRACTICES

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PRACTICES

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ABSTRACT

The purpose of this study was to examine how treatment professionals who specialize in eating disorders assess, treat, and monitor treatment outcomes for night eating behavior. Members of the Academy for Eating Disorders were invited to complete a survey that assessed demographic characteristics, assessment methods, and treatment practices of night eating behavior. It was hypothesized that less than fifty percent of eating disorder treatment providers do not assess for night eating behavior in their practice, that less than fifty percent of eating disorder treatment providers do not monitor night eating-related treatment outcomes in their practice, and that clinicians trained at doctoral level would be more likely to assess night eating behaviors than other professionals. Contrary to expectation, most providers reported (1) assessing night eating behavior in their practice and (2) monitoring night eating treatment outcome. There were no differences in assessment practices between doctoral and non-doctoral level providers.

## APPROVAL PAGE

The faculty listed below, appointed by the Dean of the College of Arts and Sciences have examined a thesis titled “Successful Predictors of Graduate School Completion,” presented by Ashley M. McCune, candidate for the Master of Arts degree and certify that in their opinion it is worth of acceptance.

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## CHAPTER 1

### OVERVIEW

The assessment and treatment of night eating behavior among eating disorder treatment professionals has been understudied. Research on night eating syndrome (NES) has focused on assessment and treatment among obese individuals, but has been neglected in individuals with other eating disorders (i.e., anorexia nervosa [AN], bulimia nervosa [BN], and eating disorder not otherwise specified [EDNOS]). A recent study (Lundgren et al., 2011), however, suggests that many people diagnosed with AN and BN report evening hyperphagia (EH) and nocturnal awakenings with ingestions of food (NI). Full threshold NES, using recently proposed research diagnostic criteria (Allison et al., 2010) was diagnosed in 25 % of a population of people seeking inpatient treatment for eating disorder (Lundgren et al., 2011) and up to 52% reported night eating behavior in a sample of patients receiving outpatient treatment for bulimia nervosa (Lundgren, Shapiro,& Bulik, 2008). The high rate of night eating behavior among patients with anorexia and bulimia nervosa demonstrates a need for assessment and treatment of night eating behavior in eating disordered samples. It is important to understand how professionals are assessing their patients for night eating behaviors, how the symptoms are addressed in treatment, and how treatment outcomes are monitored.

## CHAPTER 2

### REVIEW OF THE LITERATURE

#### **History of Night Eating Syndrome**

Night eating syndrome (NES) was first observed in 1955 by Albert J. Stunkard, MD as a specific pattern of food intake among obese patients seeking treatment for weight loss (Stunkard, Grace, & Wolff, 1955). Three core features of NES were observed in a series of 25 obese individuals (23 women and 2 men) seeking weight loss in an obesity treatment clinic. These features included (1) morning anorexia (i.e., a lack of morning hunger), (2) evening hyperphagia (i.e., consumption of 25% or more of caloric intake after the evening meal), and (3) insomnia (initial insomnia and/or frequent awakening at least 50% of the time). Night eating behaviors were related to increased stress and stressful environments, which both were hypothesized to lead to overeating and, in turn, obesity. Furthermore, Stunkard and colleagues (1955) reported that NES led to poorer outcomes in the weight loss treatment program and contributed to severe symptoms of depression and anxiety (Stunkard et al., 1955). This was the first time that NES was documented in the scientific literature.

Based on these data, there was concern among obesity researchers that this pattern of eating would contribute to obesity and impede weight loss efforts (Stunkard et al., 1955). Despite these concerns, after this initial report, NES was largely dismissed by the scientific community. The symptoms that Stunkard described did not strike other researchers as clinically significant. In fact, evening hyperphagia, one of the core symptoms of NES described by Stunkard et al., (1955), was the only symptom that

remained relevant in the early obesity literature (Striegel-Moore, Franko, & Garcia, 2009). NES did not reemerge in the literature again for decades.

Renewed interest in NES was only generated after a seminal 1999 study by Birketvedt and colleagues. After documenting NES symptoms in their own research, the goal of Birketvedt and colleagues was to determine the behavioral characteristics and neuroendocrine markers of NES in a carefully controlled clinical setting (Birketvedt, Florholmen, & Sundsfjord, 1999). To investigate differences in behavioral characteristics, Birketvedt and colleagues (1999) observed 10 obese individuals who met criteria for NES and 10 matched controls for one week in an outpatient setting. They found significant differences between the two groups indicating distinct behavioral markers in night eaters. For example, the night eaters had more eating episodes in 24-hours ( $M = 9.3$ ,  $SD = 0.6$ ) compared to the control group, ( $M = 4.2$ ,  $SD = 0.2$ ,  $p < .001$ ). The night eating group demonstrated evening hyperphagia, whereby 56% of their food intake was consumed at night after 6:00 pm versus 15% in the control group ( $p < .001$ ). The night eating group ( $M = 3.6$ ,  $SD = 0.9$ ) also reported significantly more awakenings per night than the control group ( $M = 0.3$ ,  $SD = 0.3$ ,  $p < .001$ ). Most interestingly, in the night eating group 52% of nocturnal awakenings resulted in ingestions of food compared to 0% in the control group. These findings by Birketvedt and colleagues offered the first behavioral markers for NES that were observed and tested in a laboratory setting.

To examine the neuroendocrine markers of NES, Birketvedt et al., (1999) observed 12 individuals with NES and 21 control subjects for a 24-hour hospital stay specifically measuring circadian levels of plasma melatonin, leptin, and cortisol. The night eaters again showed significant differences on all three measures in comparison to

the control group ( $p = .001$ ). These findings supported the evidence that NES not only had behavioral markers but physiological markers. The study by Birketvedt et al., (1999) has been credited for producing a significant renewed scientific interest in the study of NES. Because specific behavioral and neuroendocrine markers for NES were supported, researchers could now examine a more precise pattern of symptomology. As of 2010, over 120 articles had been published on the topic of NES.

### **Diagnostic Criteria for Night Eating Syndrome**

Originally, NES was defined as consumption of greater than 25% of daily calories after the evening meal, insomnia at least 50% of the time, and morning anorexia (Stunkard et al., 1955). Nearly 40 years passed before these criteria were revised by Stunkard and his collaborators. In 1996, Stunkard suggested these criteria: evening hyperphagia (operationalized as at least 50% of one's total daily caloric intake after 7:00 p.m.), difficulty sleeping, and morning anorexia (Stunkard, Berkowitz, & Wadden, 1996). In 1999 two criteria were added to NES. These criteria included nocturnal awakenings with full alertness and ingestions of food (one or more per night). These symptoms required must have persisted for 3 or more months (Birketvedt et al., 1999) and a diagnosis of bulimia nervosa and binge eating disorder could not co-occur with NES.

There have been many inconsistencies and arguments over the diagnostic criteria for NES over the years. This has caused researchers to question the clinical significance of NES. If a standard, valid diagnostic criteria set does not exist, then how can NES be conceptualized as a disorder?

NES is currently not included in the *Diagnostic and Statistical Manual* (DSM-IV-TR) of the American Psychiatric Association nor is it listed as an example of an Eating

Disorder not Otherwise Specified (EDNOS). There is a current debate over the inclusion of NES in the DSM-V as a distinct eating disorder. The individual who first documented the symptoms, Albert J. Stunkard along with his colleagues, continues to advocate for the inclusion of NES in the DSM-V. He cites that criteria for NES have been established and validated in ample studies and that NES can be distinguished from other sleep and eating disorders (Stunkard, Allison, Geliebter, Lundgren, Gluck, & O'Reardon, 2009). As for the clinical utility of the diagnosis, Stunkard and colleagues argue the prevalence of NES has been well documented, it has been associated with obesity, depression, and has distinct biological markers (Stunkard et al., 2009).

Critics, however, still question the clinical utility of diagnosing this pattern of behavior citing unclear diagnostic criteria as one of the main limitations of NES (Streigel-Moore et al., 2009). It is argued that night eating is not pathological and clear links do not exist between NES and depression or obesity (Streigel-Moore et al., 2009). The American Psychiatric Association is considering the inclusion of night eating syndrome under the EDNOS category for the fifth edition due out in 2013, but is not yet prepared to list NES as a distinct eating disorder (<http://www.dsm5.org>).

In response to this criticism, diagnostic criteria for NES were revised at the First International Night Eating Symposium (April 26, 2008, Minneapolis, MN) (Allison, et al., 2010). As a result, proposed diagnostic criteria for NES were discussed and are presented in Table 1.

Table 1 <i>Research Diagnostic Criteria for Night Eating Syndrome (Allison et al., 2010)</i>
A. The daily pattern of eating demonstrates a significantly increased intake in the evening and/or nighttime, as manifested by one or both of the following: <ol style="list-style-type: none"> <li>1. At least 25% of food intake is consumed after the evening meal</li> <li>2. At least two episodes of nocturnal eating per week</li> </ol>
B. Awareness and recall of evening and nocturnal eating episodes are present.
C. The clinical picture is characterized by at least three of the following features: <ol style="list-style-type: none"> <li>1. Lack of desire to eat in the morning and/or breakfast is omitted on four or more mornings per week</li> <li>2. Presence of a strong urge to eat between dinner and sleep onset and/or during the night</li> <li>3. Sleep onset and/or sleep maintenance insomnia are present four or more nights per week</li> <li>4. Presence of a belief that one must eat in order to initiate or return to sleep</li> <li>5. Mood is frequently depressed and/or mood worsens in the evening</li> </ol>
D. The disorder is associated with significant distress and/or impairment in functioning.
E. The disordered pattern of eating has been maintained for at least 3 months.
F. The disorder is not secondary to substance abuse or dependence, medical disorder, medication, or another psychiatric disorder.

## **Common Features of NES**

### Evening Hyperphagia

One of the core features of NES is the delay of the circadian rhythm of food intake, characterized by minimal intake of calories in the first half of the day and marked increase of intake through the second half of the day that disrupts the sleep cycle (O’Reardon , Peshek, & Allison, 2005). The delay in circadian rhythm of food intake is manifested by evening hyperphagia and nocturnal ingestions of food. Evening hyperphagia is defined as the consumption of 25% or more of caloric intake after the evening meal (Allison, Lundgren, Moore, O’Reardon, & Stunkard, 2009). It can co-occur with nocturnal ingestions but must be present to receive a diagnosis of NES if nocturnal ingestions are absent.

Evening hyperphagia was first proposed by Stunkard in 1955 and was reconfirmed by O'Reardon and colleagues (2004) who compared the sleep and eating patterns of individuals suffering with night eating syndrome to matched controls. After monitoring behavior through actigraphy and food diaries for 7 days, they found people with night eating syndrome had significantly different eating patterns. The NES group demonstrated a delay in food intake and a consumption of three times more food after the evening meal than the control group (35% vs. 10%) (O'Reardon, Stunkard & Allison, 2004b).

Birkevedt et al. (1999) also observed that night eaters had significantly different eating patterns than healthy controls. Delay in food consumption was observed and 74% of caloric intake was consumed by the night eaters after 6 pm vs. 37% in the healthy controls. Furthermore, night eaters consumed significantly greater amounts of food (56% of daily calories) from 8:00 pm to 6:00 am when compared to the controls (15% of daily calories.) A study comparing non-obese people with NES to non-obese controls demonstrated that people with NES had significantly increased caloric consumption after the evening meal (Lundgren, Allison, O'Reardon, & Stunkard, 2008).

Some cultural concerns exist around the term evening hyperphagia and the arbitrary timing of the "evening meal" has been challenged because some cultures eat later in the day. For example, in Mediterranean cultures meals are usually eaten at later hours of the day (Bellisle, 2009). However, the evening meal has been demonstrated over the years to be a helpful cutoff criterion for categorizing excessive nighttime eating. If all other criteria are absent, a person would not receive a diagnosis of NES simply based on cultural differences in meal times (Allison et al., 2009).

## Nocturnal Ingestions

Nocturnal ingestions occur when a person wakes from sleep and ingests what is typically a small amount of food. The nocturnal ingestion is often related to anxiety over getting back to sleep. A person with NES often feels it is necessary to consume food in order to return to sleep (Allison et al., 2009). As described in a self help book by Allison, Stunkard, and Their (2004), most patients report getting up at similar times during the night in order to eat. They report a lack of control over their eating behavior as well as extreme distress if they feel they will be unable to eat for any reason. If an attempt is made to avoid eating upon awakening, patients report they are unable to get back to sleep until they “give in” and consume their snack. Once the patient has eaten their snack they report being able to return to sleep easily. This pattern often persists night after night and may become more severe in nature the longer the night eating behavior continues (Allison et al., 2004) creating a cycle that causes significant distress. Nocturnal ingestions can co-occur with evening hyperphagia but two or more awakenings with nocturnal ingestions per week are required to receive a diagnosis of NES if evening hyperphagia is absent.

In a study comparing night eaters to a control group, night time awakenings were significantly higher in night eaters (3.6 vs. 0.3,  $p < .001$ ) (Birkevedt et al., 1999). Fifty-two percent of nocturnal awakenings resulted in the consumption of food in the night eaters and 0% of the nocturnal awakenings in the control group were associated with nocturnal ingestions (Birkevedt et al., 1999). In a recent study comparing people with NES to matched controls, those with NES consumed food 74% of the time upon awakening vs. 0% in the control group (O’Reardon et al., 2004a). Furthermore,



Lundgren et al. (2008) found non-obese people with NES reported a significantly higher amount of nocturnal awakenings with ingestions of food ( $9.6 \pm 7.8$ ) compared to non-obese people without NES ( $0.1 \pm 0.2$ ).

### Awareness of Eating Behavior

A person must have awareness of their eating behavior and be able to recall the behavior the following day to receive a diagnosis of NES (Allison et al., 2009). This becomes very important when trying to determine whether a person is suffering from NES or the parasomnia, a sleep-related eating disorder (SRED). With SRED, patients are often unaware of their eating behavior and may be sleepwalking. They can ingest strange foods or even nonfood items in this state and usually do not have recollection of their eating behavior (Allison et al., 2009). With NES, desired food items or food that was intentionally restricted through the day is often consumed (Allison et al., 2004).

The criterion “awareness of the eating behavior” has caused some to question the difference between NES and SRED, as SRED can occur with or without amnesia (Howell, Schenck, & Crow, 2009). Moreover, some people with NES do not always report full awareness of the event or total recollection thereafter. Further research is needed to help differentiate these disorders.

### Morning Anorexia

Morning anorexia describes a lack of hunger upon waking and has been included in the diagnostic criteria for NES since its introduction in to the literature (Stunkard et al., 1955). To receive a diagnosis of NES, a person must have morning anorexia and/or omit breakfast at least 4 days a week (Allison et al., 2009). Often a

person will not be hungry until the second half of the day and avoid consumption of food in the first half of the day (Allison et al., 2009).

Lundgren et al. (2008) found that non-obese individuals with NES reported less morning hunger when compared to non-obese matched controls. Gluck, Geliebter, and Satov (2001) found that people with NES showed reduced rates of daytime hunger. This criterion, however, is not required for the diagnosis of NES, as it is common among the general population, and did not show to be a useful tool for evaluating NES in an item response theory analysis (Allison et al., 2008).

#### Strong Urge to Eat Between Dinner and Sleep Onset and/or Upon Waking at Night

A strong desire to eat between dinner and sleep onset, and/or upon awakening in the night is one of the five descriptor criteria proposed in the new diagnostic criteria for NES (Allison et al., 2009). This criterion is assessed by the Night Eating Questionnaire (NEQ) which is an effective and valid measure of NES symptoms (Allison, et al., 2007). The amount of food consumed is not usually large, however, the intake is associated with decreased anxiety and the belief that one cannot sleep/return to sleep without the intake of food (Allison, Stunkard, & Their, 2004). This particular criterion has not been studied thoroughly and is somewhat subjective. It is unclear how to operationalize “strong urge” to eat in the evening, which becomes important in the assessment and treatment of NES.

#### Insomnia

Insomnia has been a diagnostic criterion for NES that has been present since its first mention in the scientific literature (Stunkard et al., 1955). More specifically, sleep onset and maintenance insomnia are often described as elements of NES (Allison et

al., 2009). Sleep onset insomnia is defined as when a person has difficulty falling asleep. Sleep maintenance insomnia is when a person has difficulty remaining asleep, which can manifest as early and/or frequent awakening and problems falling back asleep once awake. Insomnia is often observed in individuals with NES but not necessarily in all cases. In Allison et al.'s (2008) item response study, sleep onset insomnia was significant in those with NES. Birkevedt et al. (1999) found that night eaters woke in the night significantly more than a control group (3.6 awakenings per night vs. 0.3 per night). While individuals with NES were observed to have similar sleep onset, offset, and sleep duration relative to the control group, people with NES had significantly more nocturnal awakenings ( $p < .001$ ) that occurred earlier in the sleep cycle (O'Reardon et al., 2004a).

#### Belief That One Must Eat in Order to Initiate or Return to Sleep

The belief that one must eat in order to initiate sleep or return to sleep is often a central feature of NES, but is not necessarily required to receive the diagnosis. A person with NES will often describe high levels of anxiety if they are not able to have the food they desire through the evening or upon awakening in the night (Allison et al., 2004). A person with NES will believe that they will be unable to fall asleep or return to sleep without food, indicating a direct relationship between food intake and anxiety due to the insomnia (Allison et al., 2004). The Night Eating Questionnaire (NEQ) assesses this belief that one must eat in order to sleep.

#### Depressed Mood

Depressed mood has been associated with NES since its introduction (Stunkard et al., 1955) and is currently listed as a possible criterion associated with NES. It is understood that people with NES feel helpless over their eating behavior and mood

often decreases throughout the day (Allison et al., 2004). Further studies have corroborated the relationship between depressed mood and NES. For example, Birkevedt et al. (1999) found that the mood of people with NES steadily decreased after 4:00 pm while no change in mood was observed in the control group throughout the day ( $p < .001$ ). Ultimately, the mood of night eaters was significantly lower at night than in healthy controls ( $p < .001$ ). Gluck, Geliebter, and Satov (2001) compared overweight persons with NES seeking weight loss treatment to overweight persons without NES. They found that people with NES had higher rates of depression ( $p = .04$ ) and lower ratings of self-esteem ( $p < .01$ ) in comparison to those without NES. In a study comparing people with either binge eating disorder ( $N = 177$ ) or NES ( $N = 68$ ) to an overweight control group ( $N = 45$ ) without either diagnosis, depressive symptoms were found to be greater in the BED and NES groups relative to the control group (Allison, Grilio, Masheb, & Stunkard, 2005). Depressed mood is a significant marker of NES but is not present in all cases (Allison et al., 2009). In fact, depressed mood commonly co-occurs in those that suffer with eating disorders in general (Cooper & Fairburn, 1986).

## **Prevalence of NES**

### General Population

NES has been reported in 1.5%, 1.6% and 5.7% of the general population (Rand, Macgregor, & Stunkard, 1997; Colles, Dixon, & O'Brien, 2007; Stiegel-Moore et al., 2006). These rates are higher than that of other eating disorders such as anorexia nervosa and bulimia nervosa. Estimates for the percentage of women that suffer with AN in their lifetime is estimated at 0.5% (Keel, 2005). Estimates for women that suffer with BN in their lifetime is 1-3% for women and 0.1-0.3 for men (Keel, 2005).

### Obese Samples

NES has been reported in 6% to 16% of individuals that are obese (Stunkard et al., 1996). As research focus turned to growing rates of obesity in the US (O'Reardon, Peshek, & Allison, 2005) NES started getting more attention. Night eating has been linked to obesity in many studies indicating a strong relationship between being overweight and symptoms of NES (Aronoff, Geliebter, & Zammit, 2001). NES may indeed be a contributor to obesity. In one study, 52% of obese individuals with NES reported their NES preceded their becoming obese (Marshall et al., 2004).

Night eating syndrome, however, continues to be examined for clinical significance as it relates to obesity. A recent study explored whether the presence of night eating syndrome impacted weight loss in a sample of obese patients entering a 21-day inpatient treatment for weight loss (Dalle Grave, Calugi, Ruocco, & Marchesini, 2011). A sample of 32 obese patients meeting criteria for NES was compared to a sample of 68 obese patients who did not meet criteria for NES. Measures of weight loss, night eating behavior, depression, and metabolic parameters were measured at baseline, post-treatment and at 6-month follow up. Results of the study indicated weight loss did not differ between groups. Only scores on depression and night eating were significantly different in the NES group. Interestingly, only 8 of the 32 persons in the NES group met criteria for NES at follow up (Dalle Grave et al., 2011).

Despite studies that support the link between NES and obesity, critics of NES claim the literature on NES and obesity is unclear. While some studies offer evidence that NES contributes to overweight in our society, other studies find no link between the

two (Streigel-Moore, 2009). This inconsistency fuels the debate over whether NES should be considered an independent eating disorder diagnosis.

#### Psychiatric Population

NES has been reported in as many as 12% of patients in an outpatient psychiatric population (Lundgren et al., 2006) A study by Lundgren, Rempfer, Brown, Goetz, and Hamera (2010) found that obese persons suffering from serious mental illness may be at greater risk for NES. From a sample of 68 overweight or obese participants with serious mental illness enrolled in a weight-loss treatment program, 25% met criteria for NES.

#### Eating Disorder Population

NES in eating disorder populations has rarely been investigated although recent studies show that NES may be more prevalent in individuals with these diagnoses. NES was diagnosed in 25 % of a population in people seeking inpatient treatment for an eating disorder (Lundgren et al., 2011) and up to 52% reported night eating behavior in a sample of patients receiving outpatient treatment for bulimia nervosa (Lundgren, Shapiro, & Bulik, 2008). The high rate of night eating behavior among eating disordered patients demonstrates a need for NES to be taken seriously by the scientific community. Further research is needed in order to determine diagnostic differences in persons with bulimia nervosa and binge eating disorder who also exhibit night eating behaviors, both nocturnal ingestions and evening hyperphagia (Allison et al., 2009). What makes NES different than bulimia and binge eating is that food is not consumed in large quantities and there is an absence of compensatory behaviors (O'Reardon et al., 2005). This difference in behaviors should be understood by researchers and clinicians in order to provide effective assessment and treatment of NES.

## Assessment of NES

### Common Scales

The *Night Eating Questionnaire* (NEQ) is a 14-item scale developed to screen for night eating behaviors in clinical populations (Allison et al., 2008). The NEQ assesses morning anorexia, first consumption of food during the day, food cravings and perceived control over food intake throughout the evening and night, percentage of food consumed after the evening meal, initial insomnia, number of nocturnal awakenings, food consumption and awareness at those times, and mood (Allison et al., 2008). Responses are given and scored based on a 5-point scale (0-4).

Three studies were performed to evaluate the psychometric properties of the NEQ. Using principal component analysis with a sample of 1,980 people who took the NEQ via the internet, four factors were extracted: nocturnal ingestions, evening hyperphagia, morning anorexia, and mood/sleep. The second sample consisted of 81 people who met criteria for NES and found convergent validity of the NEQ on measures of night eating, disordered eating, sleep, mood and stress (Allison et al., 2007). The third sample included 194 persons seeking bariatric surgery and tested the discriminant validity of the NEQ and found the measure to be valid (Allison et al., 2007).

The *Night Eating Syndrome History and Inventory* (NESHI) is a semi-structured interview that aids in establishing a diagnosis of NES. Questions include details about food intake throughout a typical day, previous symptoms of NES, sleep and mood patterns, weight, diet history, and previous methods used to help with symptoms of NES (Allison et al., 2008). The NESHI is currently unpublished but has been used in several studies (Dalle Grave, et al., 2011; Calugi, Dalle Grave, & Marchesini, 2009; Stunkard, et

al., 2006; Lundgren, Allison, & Stunkard, 2006; de Zwaan, Roerig, Crosby, Karaz, & Mitchell, 2006).

The *Night Eating Symptom Scale* (NESS) is a 14-item scale developed to assess night eating symptoms for the past week. Scores range from 0-56, with higher scores indicating more severe symptoms (O'Reardon et al., 2004a; O'Reardon et al., 2004b). The main difference between the NEQ and the NESS is the NEQ assesses night eating behavior in general while the NESS only assesses night eating behavior in individuals for the past week.

The *Night Eating Diagnostic Questionnaire* (NEDQ) is a 21-item scale developed by Marci Gluck and Allan Geliebter to assess and diagnose night eating syndrome (Gluck et al., 2001) The scale was originally designed using the diagnostic criteria from Stunkard and colleagues (Birketvedt et al., 1999) but has recently been revised to assess for symptoms of NES based on the revised diagnostic criteria (Lundgren et al., in press). This scale rigorously assesses morning anorexia, sleep problems, and night waking. Furthermore, the NEDQ assesses evening hyperphagia based new and old sets of diagnostic criteria: 25% of daily food intake after the evening meal vs. after 7 pm. This may be helpful when considering how cultural differences in timing of meals may impact the diagnostic criteria of evening hyperphagia (Lundgren et al., in press).

### Food Records

Food records are widely used in the assessment and treatment of NES and other eating disorders. Food records require a person to record their food and fluid intake throughout the day. They allow the treatment provider and the patient a more accurate understanding of amount of food consumed and at what times of day. For NES, food



records allow researchers to calculate participants' caloric intake throughout the day and night (Allison et al., 2010) and can give a more accurate understanding of nocturnal ingestions.

### Dietary Recalls

Dietary recalls often involve asking a person to record the food and fluids they consume within a 24-hour period in order to report back with accuracy during a dietary recall. The dietary recall is usually performed by the clinician or researcher and is another method of ascertaining total caloric intake and patterns of eating. It is very similar to a food record but is most often performed by interview.

### Actigraphy

Actigraphy is a method of measuring sleep and activity patterns in persons with NES. Actigraph watches can be worn on the wrist where activity is measured continually. The data can then be analyzed at a later time. For NES, this is very useful in assessing night time awakenings and activity.

### Strengths and Weaknesses of Available Assessment Tools

The assessment tools available for NES are relatively strong. The NEQ has been validated as an effective tool in the assessment of NES. The NESHI has been used in a multitude of studies and is a useful interview tool for clinicians and researchers. The NESS assesses current symptoms of NES and reduction of symptoms once treatment has been implemented. Food records, dietary recalls, and actigraphy are all effective ways to measure detailed food/caloric activity levels intake in a 24-hour period.

## **Treatment of NES**

Very few treatment studies have been completed for night eating syndrome. To date, the use of pharmacotherapy has been minimally studied in relation to NES, one study has examined progressive muscle relaxation as a treatment method, and only one study has examined the use of psychotherapy (cognitive-behavior therapy) as a treatment for NES.

### Early Treatment for NES

Psychodynamic therapy was used to treat the first known cases of night eating syndrome among patients with obesity (Stunkard, 1976). This treatment was used with a very small number of patients who were undergoing long term treatment (months and years) for obesity. The therapy had a main focus of stress reduction. The patients who were able to reduce stress were able to control their obesity and also able reduce night eating behavior (Stunkard, 1976)

### Medication-Based Treatment

The selective serotonin reuptake inhibitor (SSRI) sertraline has been shown to be useful in the treatment and management of symptoms of NES (Miyaoaka et al., 2003; O'Reardon et al., 2004b). In a study by O'Reardon and colleagues (2004b), sertraline was given to 17 persons meeting criteria for NES in a 12 week open-label, non-blind trial. Results were impressive and resulted in a reduction of nocturnal awakenings, nocturnal ingestions, evening hyperphagia, and improved ratings on the Clinical Global Impression of Improvement Scale in all 17 participants, including a complete reduction in symptoms in 5 of the participants (O'Reardon et al., 2004b). An additional study by O'Reardon and colleagues (2006) aimed to test the effectiveness of sertraline in a

randomized, double-blind, placebo-controlled trial. They recruited 34 participants with NES and randomly assigned 17 participants to receive sertraline and 17 to receive the placebo. Results showed that patients who received sertraline showed significant decreases in nocturnal ingestions, evening hyperphagia, depressive symptoms, nocturnal awakenings, and had a mean weight loss of 2.9 kilograms after 8-weeks of treatment.

In a follow up study, Stunkard and colleagues (2006) followed 50 patients that were prescribed sertraline by their own physician. These persons contacted the researchers through their website, by phone, or via email requesting help for their NES and were offered consultation for their participation. Participants were initially screened using the NEQ and the NESHI to verify the diagnosis of NES. For the next 8 weeks the participants were asked to complete assessments every 2 weeks and were assessed by phone at week 8 to determine progress (Stunkard et al., 2006). The authors found significant reductions in symptoms of NES and a mean weight loss of 3.0 kilograms after 8-weeks of treatment.

Topiramate may also be of use in the treatment of night eating syndrome. In a case study nocturnal ingestions were reduced at 100% with the use of topiramate in one patient and three other patients had a marked to moderate decrease in symptoms (Winkelman, 2003).

In another case report involving a 40 year old woman with comorbid NES and PTSD, a dose of 100 mg of topiramate given at night resulted in reduction of PTSD symptoms, NES, and resulted in 70 pound weight loss (Tucker, Masters, & Nawar, 2004). Further research is needed to demonstrate the efficacy of topiramate for the treatment of NES.

### Progressive Muscle Relaxation

Pawlow, O'Neil, and Malcom (2003) examined whether relaxation training would reduce symptoms of night eating behaviors. Participants were randomly assigned to receive abbreviated progressive muscle relaxation therapy (APRT) or to the control group. Results showed that people assigned to the relaxation training group had significantly reduced levels of stress and anxiety. This group also reported a significant increase in morning hunger and decreased evening hunger, but did not show significant reductions in nocturnal ingestions or increase in morning consumption (Pawlow et al., 2003).

### Cognitive Behavior Therapy

Allison and colleagues (2010) completed the first treatment study for NES using cognitive behavior therapy (CBT). Up until this point, treatment studies have not included psychotherapy as a method to treat NES. Allison and colleagues conducted a pilot study with 25 night eating patients using 10-sessions of CBT. The CBT treatment was broken into 3 stages. The first stage included sessions 1-4 and was meant to develop therapeutic alliance and explain the process of CBT. The second stage included sessions 5-8 and focused on strengthening of coping skills and to challenge automatic thoughts relative to night eating symptoms. The third stage included sessions 9-10 that were scheduled on a biweekly basis. Progress, challenges, and successes were reviewed and problem solving techniques were addressed (Allison et al., 2010). Results showed significant reductions in nocturnal ingestions (70%), significant reductions of caloric intake, and significant reductions in weight (Allison et al., 2010). As this was the first trial for CBT, further investigation is needed.

### Light Therapy

As previously discussed, NES is thought to be related to the delay in circadian rhythms of food intake and has certain biological markers. Due to these findings, chronobiological treatments like bright light therapy have been considered as possible treatment options for the symptoms of NES. A case study of an obese woman meeting criteria for depression and night eating syndrome showed that exposure to bright light therapy improved symptoms of night eating behaviors (Friedman, Even, Dardennes, & Guelfi, 2002). In this case, after receiving 12 sessions of light therapy night eating symptoms were reportedly absent. Light therapy for the treatment of NES has only been described in case studies and controlled clinical trials are needed to demonstrate its efficacy.

### Self Help

Kelly Allison, Albert Stunkard, and Sara Thier wrote the book *Overcoming Night Eating Syndrome: A Step-by-Step Guide to Breaking the Cycle* in order to offer a self-help option for individuals seeking treatment for their symptoms of NES. The book offers education on NES, takes the reader through a multitude of journaling exercises meant to help identify automatic thoughts that exist in relation to their night eating, and finally offers suggestions on how to break the cycle of night eating behavior. Some of these suggestions include different nutrition, meal planning, and relaxation training. This book was written before any treatment studies for NES existed and little information exists on the efficacy of the recommendations provided in this book.

## Strengths and Weaknesses of Treatment for NES

Very few treatments exist for NES and persons seeking treatment for NES will often find it very difficult to find a treatment professional that can address their problems. Unfortunately, it is not uncommon for a person with NES to be dismissed by a health care provider (Allison et al., 2004). There are a handful of studies that show promising results for the use of topiramate and sertraline for the treatment of NES, however more research is needed in order to demonstrate efficacy. To date only one study exists that examines how effective CBT is in the treatment of NES (Allison et al., 2010). Although this study yielded promising results in the reduction of symptoms of NES more research is needed in order to advance the treatment of NES.

### **The Current Study**

The purpose of this study is to examine how treatment professionals who specialize in eating disorders assess, treat, and monitor treatment outcomes for night eating behavior. Understanding how treatment providers address the issue of night eating behaviors could offer researchers an important understanding of attention to symptoms in real world practice. As aforementioned in the literature review, there are no known studies that examine this important aspect of night eating.

The primary aim of this study is to determine if treatment professionals are recognizing night eating behaviors in their treatment of eating disorders. The first hypothesis is that treatment professionals do not routinely assess for night eating behavior in their practices. The second hypothesis is that treatment professionals do not monitor treatment outcomes for patients with night eating behaviors. The third hypothesis is

clinicians trained at doctoral level will assess night eating behaviors with greater frequency than other professionals.

## CHAPTER 3

### METHODOLOGY

#### **Participants and Recruitment**

Participants included members of the Academy for Eating Disorders (AED). This organization was selected because it is an international organization comprised of professionals who specialize in the treatment, research, education and prevention of eating disorders. The Academy for Eating Disorder members come from many different disciplines such as dietitians, physicians, psychologists, and master's level clinicians. AED publishes *The International Journal of Eating Disorders (IJED)* which presents the most current research in the field. Members of AED were selected to participate in this study because of their special interest in eating disorders.

Initially, it was planned to purchase email addresses from the Academy for Eating Disorders, however, the only information included in the purchased list was mailing addresses. Therefore, the electronic survey was sent out to 1,210 members of the Academy for Eating Disorders that listed their email address in the online membership directory. To achieve a higher response rate, an initial email invitation and two reminder emails were planned to be sent to each member. After the first email, the PI was contacted by the Academy who was concerned that email recruitment might be burdensome to Academy members and that email solicitation was prohibited. We were unaware of any restrictions with the use of the published directory information. Although subsequent recruitment emails for Academy members were planned, no follow up emails were sent to potential participants. This likely negatively impacted the response rate.



Eighty-four individuals visited the Survey Monkey site and provided responses to survey items (7% response rate). Of those, one person's data were excluded from the analyses due to probable inaccuracies in his/her responses. Of the respondents, 96.4% considered themselves an eating disorders treatment specialist. The average time spent treating eating disorders was 12.4 years. Table 2 details the participant demographic characteristics.

Table 2 <i>Participant Demographic Characteristics</i>	
Characteristic	Total Sample (N = 83)
Age (M ± SD)	43.4 ± 10.9
% Female	89.3
% Ph.D. Clinical Psychology	31.0
% Medical Degree	16.7
% MA/MS Clinical or Counseling Psychology	11.9
% MA Social Work	6.0
% Ph.D. Counseling Psychology	4.8
% Marriage and Family Therapist Certification	4.8
% Registered Dietitian	10.7
% Ph.D. Dietetics	3.6
% Other	10.7

## **Materials**

The materials in this study included a self-designed survey meant to examine how eating disorder treatment professionals assess, treat, and monitor treatment outcomes for night eating behavior. As aforementioned, emails were obtained from members of the Academy for Eating Disorders that listed their email address in the online membership directory. All members received an email explaining the study and invited them to participate. A link to Survey Monkey was included in the email and provided direct access to the survey.

## The Night Eating Survey

The Night Eating Assessment Survey is an 18-item measure (see appendix) that was constructed by the researcher to provide descriptive information about demographics, treatment practices, and methods of assessment of night eating behavior. Participants were asked to record their age, gender, educational level, and details of their practice and training. The questionnaire also asked about methods of assessment, treatment, and treatment outcomes for night eating behavior.

Surveys were included that assessed for eating behaviors in general as well as those that were specific to night eating syndrome. The general eating disorder assessments were selected because of their broad nature and their probable use in this population. The surveys that were specific to NES were included to capture providers who are directly assess for night eating behavior.

### **Procedure**

The survey was emailed to members of the Academy for Eating Disorders. Emails were obtained from the online membership directory. Each email included a description of the study and instructions for completion. Participants completed the survey on-line through Survey Monkey.

### **Statistical Analyses**

The aim of this study was to determine the prevalence and rate of assessment for night eating behavior among eating disorder treatment professionals. Descriptive statistics were used to examine the means and frequencies of the participants' characteristics and assessment practices. A Chi-square test was used to compare group

differences between Ph.D. level practitioners and non-Ph.D. level practitioners (physicians, masters' level providers, and dietitians).

#### Hypothesis One

The first hypothesis was that eating disorder treatment providers will assess for night eating behavior less than fifty percent of the time in their practice. To test this hypothesis descriptive statistics were used to examine the means and frequencies of assessment rate.

#### Hypothesis Two

The second hypothesis was that eating disorder treatment providers will monitor treatment outcomes related to night eating in their practices less than fifty percent of the time. To test this hypothesis descriptive statistics were used to examine the means and frequencies of assessment rates among different professionals.

#### Hypothesis Three

The third hypothesis was that eating disorder treatment providers will assess night eating behavior at different rates. While it was hypothesized that rates of assessment will be very low across different disciplines, it was also hypothesized that clinicians trained at doctoral level will assess night eating behaviors with greater frequency than other professionals. A Chi-square test was used to compare group differences between Ph.D. level practitioners and non-Ph.D. level practitioners (physicians, masters' level providers, and dietitians).

## CHAPTER 4

### RESULTS

#### Hypothesis One

The first hypothesis was that eating disorder treatment providers will assess for night eating behavior less than fifty percent of the time. This was examined with a direct question: “Have you ever assessed or treated night eating behavior?” (appendix A, question 13) Based on these data, this hypothesis was not supported. In fact, 84.5% of providers reported assessing for night eating behavior. Different types of tools used for the assessment of night eating behavior were reported (see Table 3). The most frequent assessment tool used to assess night eating behavior was an unstructured clinical interview (54.2%).

Although assessment for night eating behavior was higher than anticipated, providers reported assessing for night eating using measures that are not designed to specifically assess for this behavior. Of the assessment measures included in the survey, only six ask directly about night eating behavior. These measures included the Eating Disorder Examination (EDE), the Night Eating Syndrome History and Inventory (NESH), the Night Eating Diagnostic Questionnaire (NEDQ), the Night Eating Questionnaire (NEQ), the Night Eating Symptoms Scale (NESS), and the Weight and Lifestyle Inventory (WALI). These particular measures were much less likely to be utilized. Of the individuals who reported assessing for NES, only 40.3% of these individuals are using measures appropriately designed to assess for night eating. Additionally, night eating behaviors might be captured through food records and

unstructured clinical interviews. Of the providers that report assessing for night eating behavior, 70.8% reported using food records and/or unstructured clinical interviews.

Assessment Tool	Percent of Sample That Assessed for Night Eating (N = 83)	Percent of Sample that Reported Assessing for NES (N = 71)
<b>Clinical Interviews</b>		
% Unstructured clinical interview	54.2	63.9
<i>% EDE - Eating Disorder Examination</i>	26.5	30.6
% SCID - Structured Clinical Interview for Diagnosis	19.3	22.2
<i>% NESHI –Night Eating Syndrome History and Inventory</i>	7.2	8.3
<b>Self-Report Measures</b>		
% Food Records for Dietary Recall	25.3	29.2
% EDE-Q - Eating Disorders Inventory Questionnaire	21.7	23.6
% EAT - Eating Attitudes Test	13.3	15.3
% EDI-3 - Eating Disorders Inventory-3	13.3	15.3
<i>% NEQ – Night Eating Questionnaire</i>	13.3	15.3
<i>% NEDQ - Night Eating Diagnostic Questionnaire</i>	3.6	4.2
<i>% WALI-Weight and Lifestyle Inventory</i>	3.6	4.2
% EHC - Eating Habit Checklist	2.4	2.8
<i>% NESS – Night Eating Symptoms Scale</i>	2.4	2.8
% Restraint Scale	2.4	2.8
% BSQ - Body Shape Questionnaire	1.2	1.4
% Three Factor Eating Questionnaire	1.2	1.4
% QEWP - Questionnaire on Eating and Weight Patterns	0.0	0.0
% EMAQ - Emotional Appetite Questionnaire	69.1	69.1
% Does not use any formal assessment methods	4.8	4.8
% Other	8.4	8.4

*Note.* Italicized assessments indicate those specifically designed to assess NES or that specifically assess night eating behavior. Other assessments are common in the eating disorders field, but do not specifically assess night eating behavior. Participants could endorse multiple choices.

## Hypothesis Two

The second hypothesis was that eating disorder treatment providers will monitor treatment outcomes related to night eating less than fifty percent of the time. Areas of treatment specialization were assessed in this study and the majority of providers reported specialization in AN, BN and BED (see Table 4).

Table 4 <i>Participant Self-Reported Specialization by Eating Disorder Diagnosis</i>	
Eating Disorder Diagnosis	Total Sample (N = 83)
% AN	84
% EDNOS	89.3
% BN	89.3
% BED	84.5
% Obesity	48.8
% NES	33.3
% Other	7.1

Participants were assessed on the types of treatment they provided for NES. Most providers reported using CBT in the treatment of night eating behavior (see Table 5).

Table 5 <i>Treatment Provided for Night Eating Behavior</i>	
Treatment Modality	Total Sample (N = 83)
% CBT	71.1
% Medication	25.3
% Behavioral Therapy	22.9
% Group Therapy	18.1
% Family Systems Therapy	16.9
% Other	15.7
% Psychoanalytic/Psychodynamic Therapy	14.5
% Progressive Muscle Relaxation	13.3
% Eclectic Therapy	10.8
% Interpersonal Therapy	10.8
% Light Therapy	6.0
% Cognitive Therapy	6.0
% Structural Therapy	3.6
% Humanistic Therapy	2.4

Hypothesis 2 was not supported by the data; 75.9% of providers reported monitoring treatment outcomes. The methods providers choose to monitor treatment outcomes are reported in Table 6.

Assessment Tool	Total Sample (N = 83)	Percent that Assessed for Night Eating (N = 63)
<b>Clinical Interviews</b>		
% Unstructured clinical interview	48.2	55.6
<i>% EDE - Eating Disorder Examination</i>	<i>16.9</i>	<i>20.8</i>
% EDI-3 - Eating Disorders Inventory-3	10.8	12.5
% NESHI –Night Eating Syndrome History and Inventory	4.8	6.9
<b>Self-Report Measures</b>		
% Food Records for Dietary Recall	24.1	27.8
% EDE-Q - Eating Disorders Inventory Questionnaire	13.3	15.3
<i>% NEQ – Night Eating Questionnaire</i>	<i>8.4</i>	<i>9.7</i>
% EAT - Eating Attitudes Test	7.2	8.3
% SCID - Structured Clinical Interview for Diagnosis	6.0	6.9
% Three Factor Eating Questionnaire	2.4	2.8
<i>% NESS – Night Eating Symptoms Scale</i>	<i>2.4</i>	<i>2.8</i>
% BSQ - Body Shape Questionnaire	1.2	1.4
% QEWP - Questionnaire on Eating and Weight Patterns	1.2	1.4
<i>% WALI-Weight and Lifestyle Inventory</i>	<i>1.2</i>	<i>1.4</i>
% Restraint Scale	1.2	1.4
% EHC - Eating Habit Checklist	0.0	0.0
% EMAQ - Emotional Appetite Questionnaire	0.0	0.0
<i>% NEDQ - Night Eating Diagnostic Questionnaire</i>	<i>0.0</i>	<i>0.0</i>
% Does not use any formal assessment methods	8.4	9.7
% Other	10.8	12.5

*Note.* Italicized assessments indicate those specifically designed to assess NES or that specifically assess night eating behavior. Other assessments are common in the eating disorders field, but do not specifically assess night eating behavior. Participants could endorse multiple choices.

### Hypothesis Three

The third hypothesis was that different types of eating disorder treatment providers will assess night eating behavior at different frequencies. While it was hypothesized that rates of assessment will be very low across different disciplines, it was also hypothesized that clinicians trained at doctoral level would be more likely to assess night eating behaviors than other professionals. These relationships were not supported by the data when comparing Ph.D. versus non-Ph.D. providers. There were no significant differences in rates of assessment between providers that hold a Ph.D. versus other degrees,  $\chi^2(1) = .11, p = .74$ . Based on these data, holding a Ph.D. did not increase the likelihood for assessment of night eating behaviors.

Type of Professional	Percent that Assessed for Night Eating (N = 72)
Ph.D.	43.1
Registered Dietitian	11.1
Masters Level Provider	22.2
MD	16.7
% Other	6.9



## CHAPTER 5

### DISCUSSION

This study is the first to provide information on the night eating assessment and treatment practices of eating disorder specialists. Contrary to expectation, most providers reported (1) assessing night eating behavior in their practice and (2) monitoring night eating treatment outcome. There were no differences in assessment practices between doctoral and non-doctoral level providers.

Most providers report that they perform some form of assessment when a person is seeking treatment for an eating disorder, however, the issue is often whether all diagnostic domains are thoroughly assessed (Anderson et al., 2004). Assessment is best done through standardized and validated assessment measures (Anderson et al., 2004). This is also true for treatment outcome monitoring. The use of appropriate and validated measures does not always occur in eating disorders in general and this problem may persist with night eating behaviors as well.

Because NES is not a recognized disorder in the DSM-IV, it was hypothesized a very small number of providers would assess for night eating behavior and monitor treatment outcomes. It is surprising, therefore, that 84.5% of treatment providers reported assessing for night eating behavior. It became important to examine in more depth how people were assessing for night eating behavior, as many of the measures included in this survey do not assess for night eating behavior specifically, but were included because they are common assessment measures in the eating disorder field.

These data showed that only 40.3% of these individuals are using measures appropriately designed to assess for night eating. These include the Eating Disorder

Examination (EDE), the Night Eating Syndrome History and Inventory (NESHI), the Night Eating Diagnostic Questionnaire (NEDQ), the Night Eating Questionnaire (NEQ), the Night Eating Symptoms Scale (NESS), and the Weight and Lifestyle Inventory (WALI). Finally, the majority of providers (70.8%) reported using an unstructured clinical interview versus a structured clinical tool to assess for night eating behavior and to monitor treatment outcomes.

Unstructured clinical interviews are used frequently in clinical practice for diagnostic purposes (Jones, 2010). An unstructured clinical interview is completely directed by the clinician who independently determines what questions are asked based on their respective expertise (Jones, 2010). This can be problematic when a clinician is not familiar with diagnostic criteria and diagnostic interviewing. This becomes further complicated when clinicians from various training backgrounds are responsible for diagnosis and treatment. Therefore, an unstructured clinical interview, in comparison to structured interviews tailored to the NES, allows more room for subjectivity, and it is unclear if symptoms would be monitored accurately.

Furthermore, it was hypothesized a small number of professionals would monitor treatment outcomes while treating night eating behavior. These data suggest that treatment providers not only assess for night eating behavior but they monitor treatment outcomes in their patients. The same concerns arise with these findings that providers are not appropriately monitoring treatment outcomes, as they seem to be using assessment tools that do not directly target night eating behavior. The mostly likely explanation is that participants were indicating the measures that they generally use, in addition to the measures that they use specifically for the treatment of NES.

If such a large percent of professionals are assessing for night eating and monitoring treatment outcomes, then one explanation is that night eating behavior is presenting itself rather frequently in the clinical setting. Consequently, eating disorder treatment professionals have become familiar with it, and routinely assess and treat it.

Another explanation for the large percent of treatment professionals who report assessing, treating, and monitoring treatment outcome for NES is that providers with experience assessing and treating NES were more likely to participate in the study, resulting in a biased sample. A similar study by Devlin and colleagues (2004) assessed NES assessment and treatment among obesity treatment professionals. In this study, bariatric surgeons were surveyed regarding their treatment of patients with binge eating disorder and NES who presented for gastric bypass surgery. An electronic survey was sent to members of the American Society for Bariatric Surgery. This study also resulted in low (11.1%) response rate.

While this study offers a glimpse at how often night eating is seen in the clinical setting, further research is needed to understand how often providers encounter these symptoms. If prevalence is high, treatment needs to be tailored to include the management of night eating behaviors. Additionally, investigating how night eating is assessed by non-specialized providers is important.

There were several limitations to this study. The response rate was quite low, however, it is comparable to other studies with similar designs. Also, this sample was taken from a group of eating disorder professionals. This limits application of results to clinicians who specialize in the treatment of eating disorders. For clinicians that do not specialize in eating disorders, rates of assessment of night eating behavior might be much

lower. This sample is comprised of eating disorder specialists that are members of a professional society for eating disorders. Of this already select group, the respondents of this survey may represent clinicians with an interest in research, while those less interested in research may have chosen not to participate. This may skew results and may partially explain why rates of assessment and treatment monitoring were so high. Further research is needed with general clinicians.

The survey itself contained some problems. It would have been advantageous to collect information from providers whether they reported assessing for NES or not. With the current survey, if the provider did not answer affirmatively to assessing or treating night eating behavior, they were thanked for their participation and were told they were done with the survey. If the survey was completed in full by all participants this would have allowed for more comparisons between groups. Second, it would have also been beneficial to have participants classify levels of experience in the treatment and assessment of night eating behaviors. The current survey simply assessed whether a provider had ever treated night eating. More specific information regarding level of experience with these behaviors would have provided more detailed information.

Future studies need to investigate how often and under what circumstances treatment providers assess night eating behavior and monitor treatment outcomes. It is important to understand whether this is something that occurs as a measure of good clinical practice. A sample of general practitioners should be included. Understanding how a clinician uses unstructured clinical interviews in assessment and treatment monitoring is also an area that warrants investigation, as it seems to be a frequently used modality.

It is important to know the frequency of assessment and treatment monitoring of night eating behavior for many reasons. First, high rates of night eating behaviors have been seen in those with eating disorders (Lundgren et al., 2011; Lundgren et al., 2008). These high rates demonstrate a need to understand how treatment providers are assessing and monitoring treatment outcomes. This study found that the majority of providers report assessing and monitoring treatment outcomes for night eating behavior. Holding a Ph.D. did not increase the likelihood of a provider assessing for night eating or treatment monitoring. Furthermore, it is essential for clinicians to use well-validated assessment tools in clinical practice when assessing for symptoms and monitoring treatment outcomes (Anderson et al., 2004). This study provides some information about what types of assessment tools providers are using in practice. Although a high percentage of providers reported assessing for night eating behavior, only 40.3% of these individuals are using measures appropriately designed to assess for night eating. Results should be interpreted with caution as data came from a self-selected, biased sample of participants.

APPENDIX

NIGHT EATING ASSESMENT SURVEY

**Directions**

**The purpose of this study is to examine how frequently and in what way night eating syndrome and/or night eating behaviors are assessed and treated by health care providers. Even if you do not assess or treat night eating behavior, please complete the survey through question #13.**

**Please answer the following questions. If you find that a particular question does not apply to you, please mark NA. Thank you for your time.**

**Demographic Characteristics**

1. Gender (please circle):     Male                      Female

2. Age: \_\_\_\_\_

3. Highest Degree	_____ MD, please list
_____ Ph.D. Clinical Psychology	specialty_____
_____ Ph.D. Counseling Psychology	_____ Ph.D. Dietetics
_____ MA Counseling	_____ Other, please
_____ MSW	describe_____
_____ MFT	_____
_____ RD	_____

4. Are you licensed or certified?  
\_\_\_\_\_

5. In what year did you complete your most recent degree?  
\_\_\_\_\_

6. In what state do you practice?  
\_\_\_\_\_

7. In what type of setting is your practice? (check all that apply)

_____ Private Practice Mental Health	_____ Other (please describe)
_____ Private Practice Medical	_____
_____ Inpatient Mental Health	_____
_____ Inpatient Medical (Hospital, Medical Center)	_____
_____ Community Mental Health Center	
_____ University Counseling Center	

8. Do you consider yourself an eating disorders treatment specialist? \_\_\_\_\_

9. Do you consider yourself an obesity treatment specialist? \_\_\_\_\_

10. If so, what type of specialized eating disorder or obesity training have you had? (check all that apply)

- |                                                 |                                                  |
|-------------------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> Graduate Training      | <input type="checkbox"/> Other (please describe) |
| <input type="checkbox"/> Post Doctoral Training | _____                                            |
| <input type="checkbox"/> Residency              | _____                                            |
| <input type="checkbox"/> Workshops              | _____                                            |
| <input type="checkbox"/> Conferences            |                                                  |

11. How long have you been treating eating disorders?

\_\_\_\_\_

12. How long have you been treating obesity?

\_\_\_\_\_

13. Have you ever assessed or treated night eating behavior? YES NO

If YES, please continue below.

If NO, you have completed the survey. Thank you for your time.

\_\_\_\_\_

14. In what types of diagnoses do you specialize? (Check all that apply)

- |                                                |                                                |
|------------------------------------------------|------------------------------------------------|
| <input type="checkbox"/> Anorexia Nervosa      | <input type="checkbox"/> Night Eating Syndrome |
| <input type="checkbox"/> Bulimia Nervosa       | <input type="checkbox"/> Other (please         |
| <input type="checkbox"/> Eating Disorder NOS   | specify) _____                                 |
| <input type="checkbox"/> Binge Eating Disorder | _____                                          |
| <input type="checkbox"/> Obesity               |                                                |

15. If you are a therapist, what is your theoretical orientation?

- |                                                       |                                        |
|-------------------------------------------------------|----------------------------------------|
| <input type="checkbox"/> Cognitive / Behavioral       | <input type="checkbox"/> Interpersonal |
| <input type="checkbox"/> Psychoanalytic/Psychodynamic | <input type="checkbox"/> Structural    |
| <input type="checkbox"/> Family Systems               | <input type="checkbox"/> Other _____   |
| <input type="checkbox"/> Behavioral                   | _____                                  |
| <input type="checkbox"/> Humanistic                   | _____                                  |
| <input type="checkbox"/> Eclectic                     | _____                                  |

**Assessment and Diagnosis**

16. What methods do you use in the assessment and diagnosis of night eating behavior?

- Clinical Interview
- EDE - Eating Disorder Examination
- NESHI –Night Eating Syndrome History and Inventory
- SCID - Structured Clinical Interview for Diagnosis
- Unstructured clinical interview

**Self Report**

- BSQ - Body Shape Questionnaire
  - EAT - Eating Attitudes Test
  - EDE-Q - Eating Disorders Inventory Questionnaire
  - EDI-3 - Eating Disorders Inventory-3
  - EHC - Eating Habit Checklist
  - EMAQ - Emotional Appetite Questionnaire
  - Factor Eating Questionnaire
  - Food Records for Dietary Recall
  - NEDQ - Night Eating Diagnostic Questionnaire
  - NEQ – Night Eating Questionnaire
  - NESS – Night Eating Symptoms Scale
  - QEWP - Questionnaire on Eating and Weight Patterns
  - QEWP-R -Questionnaire on Eating and Weight Patterns-Revised
  - WALI-Weight and Lifestyle Inventory
  - Restraint Scale
  - I do not use any formal assessment methods
  - Other (please specify)
- 
- 

**Treatment Approaches**

17. What treatment approaches do you/have you use(d) for night eating behavior?

- |                                                               |                                                  |
|---------------------------------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> Cognitive / Behavioral Therapy       | <input type="checkbox"/> Interpersonal Therapy   |
| <input type="checkbox"/> Psychoanalytic/Psychodynamic Therapy | <input type="checkbox"/> Structural Therapy      |
| <input type="checkbox"/> Family Systems Therapy               | <input type="checkbox"/> Behavioral Modification |
| <input type="checkbox"/> Medication                           | <input type="checkbox"/> Food Records            |
| <input type="checkbox"/> Light Therapy                        | <input type="checkbox"/> Sleep Studies           |
| <input type="checkbox"/> Progressive Muscle Relaxation        | <input type="checkbox"/> Group Therapy           |
| <input type="checkbox"/> Behavioral Therapy                   | <input type="checkbox"/> Other _____             |
| <input type="checkbox"/> Humanistic Therapy                   | _____                                            |
| <input type="checkbox"/> Eclectic Therapy                     | _____                                            |



**Treatment Outcome**

18. What methods do you/have you use(d) throughout the treatment process and to assess treatment outcome for night eating behavior? Check all that apply.

Clinical Interview

- EDE - Eating Disorder Examination
- NESHI –Night Eating Syndrome History and Inventory
- SCID - Structured Clinical Interview for Diagnosis
- Unstructured clinical interview

Self Report

- BSQ - Body Shape Questionnaire
- EAT - Eating Attitudes Test
- EDE-Q - Eating Disorders Inventory Questionnaire
- EDI-3 - Eating Disorders Inventory-3
- EHC - Eating Habit Checklist
- EMAQ - Emotional Appetite Questionnaire
- Factor Eating Questionnaire
- Food Records for Dietary Recall
- NEDQ - Night Eating Diagnostic Questionnaire
- NEQ – Night Eating Questionnaire
- NESS – Night Eating Symptoms Scale
- QEWP - Questionnaire on Eating and Weight Patterns
- QEWP-R -Questionnaire on Eating and Weight Patterns-Revised
- WALI-Weight and Lifestyle Inventory
- Restraint Scale
- I do not use any formal assessment methods
- Other (please specify)

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