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ALEXITHYMIA AND SELF-REGULATION:
AFFECTIVE AND COGNITIVE FUNCTIONING IN
COMPULSIVE EATING

presented by

Regina C. O'Connell

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ALEXITHYMIA AND SELF-REGULATION:
AFFECTIVE AND COGNITIVE FUNCTIONING IN
COMPULSIVE EATING

By

Regina C. O'Connell

A DISSERTATION

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ABSTRACT

ALEXITHYMIA AND SELF-REGULATION: AFFECTIVE AND COGNITIVE FUNCTIONING IN COMPULSIVE EATING

By

Regina C. O'Connell

Research suggests that individuals with eating disorders have higher rates of alexithymia than the general population. The alexithymia construct consists of four salient features: 1) difficulty discriminating feelings from bodily sensations of emotional arousal, 2) difficulty identifying and describing feelings, 3) reduced imaginative capabilities, and 4) preoccupation with somatic and external events. The theory behind these difficulties is that there is a deficit - a dysregulation of affect that leads to a more diffuse, somatic and un verbalized processing of physiological and psychological affective experience. Research suggests that these difficulties are common in psychosomatic and addictive disorders and interfere with the ability to make use of psychotherapeutic approaches that rely on verbalization to process affective and cognitive information.

The study tested the hypothesis that the relationship between obesity and alexithymia is due to a mediating variable, a subgroup of the obese population that engages in compulsive overeating or "bingeing". The study investigated whether somatic complaints, somatization and addictive behavioral patterns are more common in the compulsive eating population. The Thematic Apperception Test (TAT) and Toronto Alexithymia Scale-20 (TAS-20) were administered to obese women enrolled in Weight Watchers programs and to a control group of women from the community. To assess the potential influences of other variables, such as intellectual functioning and

psychiatric/mood symptoms on cognitive and affective processing, the WAIS-R Vocabulary subtest and the Brief Symptom Inventory (BSI) were administered. Results indicated that it is compulsive overeating, as opposed to obesity, that is associated with alexithymic and somaticizing deficits. In particular, severe compulsive overeaters, as compared to non-compulsive eaters and moderate compulsive eaters, produced significantly different performances on both the TAS-20 and the TAT. Severe compulsive eaters were more likely to report multiple somatic problems for which they had sought medical treatment. In this sample, severe compulsive eaters were also more likely to be experiencing comorbid addictive problems. Severe compulsive eaters had comorbid nicotine addiction and impulsive addiction to shopping.

Compulsive overeating serves a self-regulatory function in a quick and temporarily reliable way for individuals with deficits in the cognitive processing and regulation of affect. A concrete act (bingeing) is used to self-soothe and self-regulate physiologic arousal tension states. For such individuals, affect remains at a sensory-motoric level that stimulates and prompts action for self-regulation. Since affect does not become processed at a cognitive level, verbalized and modulated, it remains diffuse and chronically overwhelming. Given the difficulty in processing affect and using it as a signal about internal affective and cognitive states, modifications need to be made in psychotherapeutic technique. The goal is to assist the individual in tolerating affective tension while learning to identify, discriminate, verbalize and ultimately regulate internal affective experience.

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RESEARCH RATIONALE AND RESEARCH QUESTIONS

Clinicians and researchers have long sought to understand the emotional and cognitive variables in the pathogenesis of eating disorders, and to develop therapeutic modes to address and treat these disorders. Bruch's (1962, 1973, 1982, 1985) work was seminal to current understanding of the psychological deficits underlying eating disorders. She emphasized a deficit model in which the core issue for the eating disordered individual is a chronic struggle with a deficient sense of self and a profound sense of ineffectiveness. She noted the cognitive and affective deficits that compromised their ability to attend to, accurately perceive, effectively interpret and use what was 'going on' in their bodies. Bruch's use of the term 'interoceptive confusion' highlighted a disconnect in awareness of the interaction among physiological sensations, affective experiences, and cognitive appraisals.

Bruch's observations of the psychological deficits of the eating disordered population are similar to the deficits underlying the construct of alexithymia. The core aspects of alexithymia are: 1) difficulty discriminating between feelings and the physiological sensations of affective arousal; 2) difficulty identifying and describing feelings; 3) limited imagination and fantasy life; and 4) a concrete, externally-oriented thinking style (Taylor, Bagby, Ryan & Parker, 1990; Taylor, Bagby, & Parker, 1991).

The alexithymic individual has difficulty cognitively processing emotions so they can be regulated. As a result, there tends to be a focus on, and an amplification of, the bodily sensations that accompany emotional arousal (Krystal, 1979, 1982, 1988). This tendency leaves the alexithymic individual vulnerable to increasing tension resulting from

undifferentiated states of unpleasant emotional arousal. The arousal and tension is understood in terms of concrete somatic states, rather than cognitively processed, verbalized, and ultimately modulated. Since cognitive processing of affect is deficient, the alexithymic individual is prone to regulate tension through physical action as an immediate response to unpleasant physiological arousal. Concrete actions, such as compulsive eating and substance abuse, are temporary strategies for reducing somatic tension. However, this leaves the individual dependent on repetitive concrete acts, rather than internal cognitive processing and regulation of affect, to reduce tension (McDougall, 1974, 1982a, 1982b). Emotional arousal cannot be used to signal what an individual is experiencing internally, rather, it is considered as an unpleasant physiologic state to be quickly eliminated (Krystal, 1975, 1988, 1997; Taylor, Bagby & Parker, 1991).

Disturbance of self-regulation involves impairment in the capacity to cognitively process and regulate emotions to achieve a state of homeostasis (Grotstein, 1986). To compensate for the underlying affect dysregulation, individuals may develop a variety of impulsive and addictive behavioral patterns as defensive reparative strategies to regulate tension states and undifferentiated dysphoric moods. Unable to insulate against overstimulation, and without the ability to self-soothe and self-regulate through cognitive processes, concrete substances and actions are employed to regulate the physiological affective states.

Clinical observation and research has lead to the assertion that alexithymic deficits and self-regulation impairments are common in eating disordered populations (Bruch, 1973, 1982, 1985; Selvini Palazzoli, 1971, 1974; Stunkard, 1975; Waysfield, LeBarzic, Guy-Grand, 1977; Casper, 1983; Goodsitt, 1983, 1985; Swift & Letvin, 1984;

Abraham & Beaumont, 1982; Kaye, Gwirtsman, George, Weiss & Jimmerson, 1986; Schupak-Neubergh & Nemeroff, 1993; Henderson & Huon, 2002). Most of the empirical research that supports these observations is based on anorexic and bulimic and, more recently, binge eating populations (Bourke, Taylor & Crisp, 1985; Bourke, Taylor, Parker & Bagby, 1992; Schmidt, Jiwany, Treasure, 1993; Cochrane, Brewerton, Wilson & Hodges, 1993; Laquatra & Clopton, 1994; de Zwaan, Bach, Mitchell, Ackard, Specker, Pyle & Pakesch, 1995; de Groot, Rodin, Olmstead, 1995; Morosin & Riva, 1997). Empirical research on alexithymic deficits in the obese population has been equivocal (Logorreta, Bull, and Kiely, 1988; Laquatra & Clopton, 1994).

The current research project sought to examine whether such alexithymic deficits are present in a non-clinical female population that is overweight and/or obese. Given that the obese population does not present specific psychopathological difficulties due to its heterogeneous nature (Morosin & Riva, 1997), it was hypothesized that a subgroup of the obese - those that engage in compulsive overeating - would have alexithymic deficits similar to those of anorexic and bulimic populations. Compulsive overeating or “binge eating” is characterized by repeated episodes of the consumption of a large amount of food in a relatively short period of time. As described in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), these episodes involve both subjective and behavioral aspects of difficulty controlling, and distress about, the binge eating. In contrast to the eating disorders anorexia nervosa and bulimia nervosa, there is no consistent use of inappropriate compensatory behaviors (e.g., self-induced vomiting, laxative abuse, excessive exercise, starvation, etc...) to try to prevent weight gain.

Compulsive eating is understood as an addictive process in which a concrete act is carried out repetitiously providing, in part, a temporary self-regulatory function to cope with affective arousal that is experienced primarily at a somatic level. The affect is not free to serve a signaling function for the individual because deficits in discriminating emotional arousal from physiological arousal preclude the identification and verbalization of the feelings (Krystal, 1975, 1988, 1997). Since verbalization is preempted by somatization, the aim is to reduce the tension as quickly as possible. Repetitious acts provide temporary relief of emotional arousal.

Investigating whether alexithymic traits are characteristic of individuals who compulsive overeat, rather than the obese population in general, may explain the marginal effectiveness of insight-oriented psychotherapies for the obese. Furthermore, modifications in psychotherapeutic treatment to accommodate such deficits may be warranted, as some analysts have recommended (Krystal, 1979, 1982, 1988; Bruch, 1973, 1982, McDougall, 1982a, 1982b).

This research investigation sought to answer several research questions. First, is the reported relationship between alexithymia and obesity due to the moderator variable, specifically compulsive overeating? Second, does the severity of compulsive overeating coincide with the severity of alexithymia? Third, do compulsive eaters tend to somaticize and/or have more somatic problems than non-compulsive eaters? Fourth, are compulsive eaters more likely to have comorbid addiction problems than non-compulsive eaters?

REVIEW OF THE LITERATURE

Obesity is a problem for health professionals, in that, although many theories exist about the nature, etiology, and course of obesity, there has been a paucity of lasting treatments (Wadden & Osei, 2002; Peri & Corsica, 2002; Fairburn & Brownell, 2002). This is especially problematic, as obesity tends to have widespread detrimental consequences in psychological (Yuker, Allison, Faith, 1995; Wadden & Stunkard, 1985; Istvan, Zavela, & Weidner, 1992), physical (Manson, Colditz, Stampfer, Willet, Rosner, Monson, Speizer, & Hennekens, 1990; Sjoström, 1992; Field, Bamoya & Colditz, 2002), interpersonal (Shapiro, Baumeister, & Kessler, 1991; Wadden, Womble, Stunkard, & Anderson, 2002), and economic (Freize, Olson & Good, 1990; Klesges, 1990; Crandall, 1991; Field, Bamoya & Colditz, 2002) realms. Furthermore, treatment is negatively affected by the attitudes and countertransference of health professionals (Adams, Smith, Wilbur & Grady, 1993; Harvey & Hill, 2001; Hebl & Xu, 2001).

Treatments for obesity have been weak in tackling its chronicity, as evidenced by substantial post-treatment regaining of weight (Perri & Corsica, 2002). Several approaches are currently used to treat obesity, including pharmacological (Atkinson, 1994; Bray, 2002), surgical (Latifi, Kellum, de Maria, Sugerman, 2002), cognitive-behavioral (Cooper & Fairburn, 2002; Wilfley & Cohen, 1997), behavioral treatments (Fairburn, 1991, 1993; Wing, 2002), and various self-help and commercialized programs (Womble, Wang, Wadden, 2002) for the obese. There is a limited literature base of empirical data supporting the benefits of insight-oriented treatments, such as traditional psychoanalytic (Rand and Stunkard, 1977, 1978, 1983; Wadden & Stunkard, 2000) and

modified psychodynamic-interpersonal therapies (Bruch, 1973, 1985; Wilfley, 1993) for eating disordered populations. There is minimal support for the benefit of insight-oriented therapy with the obese when reduction in weight is the criterion for effectiveness (Brownell & Wadden, 1993); however, the orientation of such therapies attends more to general personality characteristics and interpersonal dynamics rather than just symptom remediation.

The finding that obese individuals tend not to experience weight reduction as a function of involvement in insight-oriented psychotherapies may be related to observations of an increased frequency of psychosomatic traits in this population (Bruch 1957, 1966, 1973; Rand & Stunkard, 1983, 1977; Waysfeld et al, 1977; Taylor, Bagby & Parker, 1991). Such traits reflect the process of isolating affect from other aspects of mental life, interfering with the process of reviewing and verbalizing one's inner experience (i.e., fantasies, wishes, feelings, attitudes, etc..) which is common to psychotherapy . Gaddini (1976) indicated that the psychosomatic symptom evolves from disturbances in the interaction between mother and infant, at a time when the infant has not developed the psychic structures necessary to use a particular object as symbolizing the mother. Gaddini indicated that the child's energy is self-focused rather than focused on the mutuality of the relationship with the mother. This disturbance in mutuality leaves the child invested mainly in his physical experience. Symptoms become displayed through somatization when tensions and emotions are not differentiated, identified and verbalized. The body and its functions become the medium through which distress may be communicated (Sifneos, 1970, 1976, 1994). Notably, clinical observations with the obese reveal deficits in differentiating among bodily sensations and emotions and feelings

of frustration and helplessness. Overeating temporarily regulates tension, but at the expense of achieving resolution of internal distress (Bruch, 1972, 1973; Glucksman, Rand, Stunkard, 1978). Waysfield, LeBarzic, Aimez, & Guy-Grand (1977) worked with the obese and noted a cognitive style restricted to a concrete focus on somatic symptoms and external details that seemed to preclude the verbalization of feelings and wishes.

Prior to discussing the affective and cognitive disturbances in obesity and compulsive eating, a brief look at the physiological components and an extensive review of clinical and empirical literature on the psychodynamics associated with obesity and other eating disturbances may be helpful.

Obesity and Compulsive Overeating

Classifications and Physiological Components

Overweight is a general term that refers to an excess of body weight that includes fat, muscle, bone and water, while the term obesity refers specifically to excess body fat (Bray, Bouchard, & James, 1998). One can be overweight without being obese, although excess body fat is the main variable in being overweight.

There are several ways to assess obesity using body fat and weight. The method most commonly used by researchers and health professionals is the Body Mass Index (BMI) (NIH, 1998). BMI is determined by the formula kg/m^2 , which represents an individual's weight in kilograms (kg) divided by height in meters squared (m^2). Although BMI is not exact in terms of a specific healthy or unhealthy weight, it is useful in that it can be used to predict the development of health-related problems. Table 1 lists the current BMI classification system used by the World Health Organization (WHO).

Although body fat is essential for stored energy, shock absorption, heat insulation, excess body fat is associated with a variety of health conditions. Approximately 55% of the current U.S. population is overweight (Fairburn & Brownell, 2002). Being obese is associated with increased risk of compromised quality of life and mortality.

Table 1: Body Mass Index (BMI) classification system for weight recommended by the World Health Organization (WHO; 2001).

Weight Classification	BMI range
Underweight	Less than 18.5
Normal Weight	18.5 to 24.9
Overweight	25 to 29.9
Obese	30 and higher
Moderately Obese	30 to 34.9
Severely Obese	35 to 40

The most common health-related problems associated with obesity include hypertension, type II diabetes, lipid disorders, coronary heart disease, stroke, gallbladder disease, sleep apnea and respiratory problems, kidney disease, osteoarthritis and bone disease.

There does not appear to be one specific physiological cause for obesity, as several factors seem to be related to weight gain. Obesity tends to run in families, with family and twin studies producing increasing evidence of a genetic link for obesity (Price, 2002). Research suggests that neural, endocrine, and metabolic mechanisms play a role in regulation of appetite, satiety and body weight. Lifestyle factors such as diet/eating choices (amount and types of food) and level of physical activity are also clearly linked to obesity. In particular, consumption of high fat, sugar, and processed food diet along with a sedentary lifestyle is associated with obesity (Foster & McGuckin, 2002). While many physiological variables associated with obesity cannot easily be altered, lifestyle changes can be modified to affect physiological systems which lead to weight loss and maintenance.

Compulsive or “binge” eating often leads to being overweight, since binges involve consuming a large number of calories in a short amount of time. The foods commonly selected for a binge are often considered to be “comfort” foods that tend to be processed foods that are high fat and high starch (Stunkard, 2002). Approximately 25% of obese individuals engage in frequent episodes of binge eating, with the percentage increasing to nearly 40% in the severely obese (Fairburn, 1998). Since compulsive eaters do not engage in the purging behavior characteristic of bulimia, they are more likely to be overweight than are bulimics.

Although compulsive eaters do not typically have the chronic health complications that bulimics experience due to purging behavior, they do experience physiological consequences of their eating style (Fairburn & Brownell, 2002). Compulsive eaters may not obtain the necessary vitamins and minerals due to bingeing on high fat and high sugar foods. Regular consumption of these processed foods increases the risk for Type II diabetes, hypertension, high blood cholesterol, digestive problems, and gallbladder disease (Berkow & Fletcher, 1987).

Psychodynamics: Clinical Observations

According to D. Brenner (1981, 1983), eating disorders serve a self-regulatory function. Overeating and compulsive eating may serve to regulate self functions that are unable to be achieved in more adaptive and effective ways. Eating disordered symptoms communicate particular self-representations, object-representations, and self-object interactions. Brenner suggests that the ego state sought by obese individuals relates to aspects of “early object relations which have contributed to or impeded ego development, and which have influenced the internalized self- and object- representational world”.

Segal, (1956, 1978), Rosalato (1978), Meissner & VanDamm (1977) discussed the theoretical foundations for how the infant becomes less reliant and dependent on literal objects (mother) in the environment, by explaining the process of language acquisition and symbol formation in normal development. Both Geist (1989) and Brenner (1983) applied this to eating disorders by linking disturbances in empathic connectedness between mother and child to the development of eating disorders. In particular, Brenner stated that the network of individual representations, based on the child’s ability to call up the mental image of the mother or of the functions provided by

the mother, such as self-soothing or other self-regulations, should provide the normal child with the internal capacities to deal with frustration and excitement through symbolic mediation. McDougall (1974, 1982a, 1982b) has stated that when these internalizations are compromised, the person remains addictively stuck on external objects or actions to complete the missing symbolic representation. She added that, such repetitions will fall short. Without internalization of the object's function within the self, a deficit remains that can only partly and temporarily filled by endless repetition and addictive attachment to external objects (McDougall, 1980, 1982b).

Goodsitt (1983) stated that eating disorders represent deficits in self-organization and self-regulation, with the overeating process, especially bingeing, symbolizing a desperate attempt to subdue states of tension and internal distress. In particular, he noted that such stimulatory behavior reduces feelings of deadness, emptiness and their related tensions.

Both Goodsitt (1983) and Bruch (1961, 1970) noted that internal psychic mechanisms of the self-regulation of self-esteem, moods, and tensions are not dependable for the eating disordered individual. Most markedly with compulsive eating or bingeing, the seeking of extreme sensations of fullness relates to the intensity of stimulation as a goal. Goodsitt stated that it is often the individual's lack of awareness of her internal states and ability to identify only vague and uneasy discomfort, where the eating is experienced rather than the underlying tension-state. Krystal (1979) noted a parallel phenomenon with drug-abusing individuals, when the "high" is experienced rather than the underlying physiological and psychological state. Thus, the eating-disordered individual is similar to the substance-abusing individual, in that, there is a preoccupation

with internal physical stimuli, with the ingestion of a substance as an escape from the difficulty of relating to themselves and others.

Charone (1982) and Castelnovo-Tedesco (1986) postulated that the nature and symptoms of overeating or bingeing occur as a developmental failure, utilizing the early feeding relationship as a paradigm of the mother-child relationship. In doing so, several levels of disturbance in the mutuality of the mother-child relationship were reviewed. Kohut's (1971) descriptions of failures in empathic mirroring, idealizing, and the appropriate transitional experiences during childhood that lead to internalization of self-regulating abilities leave individuals seeking pathological substitutes that are reliable in their ability to provide immediate self-soothing functions. Kohut stressed the relational aspect of the actual action of eating. He noted that when the need for a nurturing self-object relationship remains unfulfilled, depressive eating may occur to replicate an aspect or part of the larger 'mother-infant unit'. Schick (1947) noted imagery reminiscent of striving for merger with mother, with the process of overeating recapitulating both the feeder and the one being fed as an interacting unit. White (1981) indicated that overeating serves a range of self-object functions directed toward restoring self-cohesion. Castelnovo-Tedesco (1986) reported that overeating and bingeing, similar to other addictions, were pathological substitutes that provide temporary restitution and self-regulation. Unlike transitional objects, he noted that they do not lead to the ability to relate well to objects or even to "psychic restructuralization" by internalization of symbolic representations of self-soothing and self-regulating behaviors.

The literature on the psychodynamics of compulsive eating symptomatology highlighted the centrality of feelings of emptiness, loneliness, and neediness in the

dynamics of individuals who use food in an addictive fashion (de Groot et al, 1994, Bemporad, Beresin, Ratey, O'Driscoll, Lindem, & Hertzog, 1992a, 1992b; Castelnuovo-Tedesco, 1996). Furthermore, Chessick (1985) pointed out the particular focus on separation-individuation conflicts by writers in the eating disorder field.

Giovacchini (1972) speculated, similar to McDougall (1980, 1982a, 1982b), that in syndromes such as addiction to alcohol and food, the original mother-infant symbiosis was not adequate to allow the child to assimilate the mother's capacities for self-care and regulation of internal states, and for reassurance of object permanence. Thus, the infant was inadequately prepared to separate and develop further individuation. He noted that experiences of separating were anxiety-provoking, and at times of particular stress the child might attempt to simulate symbiotic connectedness with the mother by eating to deal with the anxiety.

Blackwell (1968) stressed that the impulse to binge represents the desire to fill up the feeling of emptiness. The overeater seems to be trying to fill a depleted or lonely self, via taking in food. Bliss and Branch (1960) commented on food as a means of security and protection, a means of achieving temporary contentment when experiencing interpersonal rejection, and for one patient, a way to recreate earlier periods of familial harmony. Bemporad et al (1992a) investigated the function of eating disorders as trying to maintain the fragility of the family unit by presenting an image of robustness and unity.

Wurmser (1977) described addicts as being caught between the a fearfulness about merging and a simultaneous desire for that feared merger, which is more characteristic of the ambivalence experienced by those that binge eat as compared to overeating. In contrast, the obese individual appears to long for and seek out the

experience of symbiosis with an “all good” mother representation, which is recreated in the process of overeating (Bruch, 1973). Sugarman and Quinlan (1981) suggested that such individuals experience developmental arrests that leave him fixated at the level of sensorimotor self- and object- representations, where the object can be internalized only as part of repetitive action. Eating assumes the status of a need-gratifying activity that restores a sensorimotor representation of the mother.

D. Brenner’s dissertation work (1980) involved assessment of early interpersonal family interactions, current interpersonal patterns, and the internalized object-relational world in the obese compulsive eaters. Obese subjects indicated a preference for companionship and a fear of being alone. For obese subjects, the more overweight they were, the greater their dependency needs and the more they tended to seek out and trust others. The families of overeaters were characterized by closeness, sometimes to an unhealthy degree, and familial problems focused on conflicts surrounding dependency and overprotectiveness.

Bruch (1973) observed that in such families, certain needs seem to be met but, at times, in such excess as to be developmentally inappropriate and actually thwarted the child’s need for emotional support to grow up, separate, and become autonomous. Bemporad et al (1992a,b), collecting collaborative data from analysts who typically worked with eating disordered patients, found impaired familial relationships, with the mother typically being both overinvolved and distant and the mother-child relationship being recalled as lacking in mutuality and closeness. Relationships with fathers were also less than mutual, and often with fathers presenting narcissistic traits and using the child to meet their own needs. Many authors noted that the experience sought out and

recapitulated by those that overeat and binge was characterized by qualities of the mother-child relationship (Bemporad et al, 1992a,b; Bruch, 1963, 1973; Goodsitt, 1985; Brenner, 1980, 1983). Overeaters tended to indulge in too much of the “wrong” thing (i.e. food), rather than emotional support for becoming more functional or for working through difficult experiences. Brenner (1983) stated that overeating recreates a particular self-object state. Clinical data also suggested that overeaters reported feeling lonely, alone, rejected and resorted to food as comforting, “love-object substitute”, and as a way to avoid experiencing feelings and maintain self-control (Glucksman, 1989; Bemporad, et al, 1992a; Brenner, 1983).

To understand the psychodynamics of obesity and compulsive overeating, it is important to note that one of the central psychoanalytic ideas of psychosocial development is that overgratification or frustration during the oral stage is likely to result in a dependent personality style and in preoccupation with food and eating as a self-regulating method to obtain nurturance and security (Borenstein, 1991). Brenner noted the importance of a focus on the different self-regulating functions served by the action patterns of each symptom. Obese, compulsive eaters are conflicted by issues of loss and separation anxiety, and turn to binge-eating as a symbolic act of merger. She issued that the therapeutic task for the overeater is to internalize more self-object functions, toward the goal of becoming more autonomous and independent. This is consistent with Krystal’s (1978b) work with substance-dependent individuals, where it was observed that they did not appear to have internalized self-regulating and basic self-care functions. In fact, he suggested that such individuals see that task as reserved for the omnipotent self-object, and recapitulate that process by using substances for self-regulation. McDougall

(1974, 1982b) added to this by suggesting that because they have been unable to internalize such functions and create a mental representation of the self-object function, they are prone to repeat the experience of pseudo self-care by addiction to substances.

Slochower (1983, 1987) reviewed a number of empirical studies exploring the relationship between excessive eating and the impact of emotions and the environment. She found that the obese tend to have difficulty in spontaneously identifying and describing their emotional reactions to emotion-arousing cues, as well as their tendency to overeat in response to a variety of emotional states which are perceived as overwhelming and uncontrollable. Slochower also found that obese individuals report significant affect reduction following eating.

Psychodynamic & Personality Characteristics: Empirical Findings

Houston (1995) compared the personality functioning of morbidly obese females seeking gastric surgery to normal weight females using the Sixteen Personality Factor Inventory (16-PF; Catell, 1963). He found no significant differences in personality traits between obese and normal weight females. Most of the empirical research suggests that, while the obese as a group report dysphoric affect, low self-esteem, and interpersonal sensitivity, their overall psychiatric status does not appear to be significantly different from normal weight groups (Kayloe, 1993; Williams, Power, Millar, & Freeman, 1993).

Auerbach-Barber (1998) examined the interpersonal and personality characteristics that distinguish obese binge eaters ($n = 30$) from obese nonbinge eaters ($n = 78$) seeking weight-loss treatment at a university center. Participants completed self-report inventories assessing personality characteristics, interpersonal patterns, and depression. Binge eaters reported experiencing significantly more interpersonal

problems, depressive symptoms and neurotic personality traits than non-binge eaters.

Binge eaters scored higher than non-binge eaters on subscales indicating non-assertiveness, vindictiveness, social avoidance, exploitability and intrusiveness. Binge eaters also scored lower on extroversion compared to non-binge eaters. Auerbach-Barber (1998) suggested that obesity treatment might be enhanced by addressing the interpersonal styles of obese binge eaters, since they differed from obese non-binge eaters.

Several studies examined compared the personality characteristics and general distress of bulimic, obese binge eaters, obese nonbinge eaters, and normal weight using the Minnesota Multiphasic Personality Inventory (MMPI) and/or other measures of psychological distress. Kolotkin, Revis, Kirkley, and Janick (1987) administered the MMPI and the Binge Eating Scale (BES; Gormally et al, 1982) to obese binge eaters and obese nonbingers. BES scores varied from nonbinging to very severe bingeing and were consistently and linearly related with all of the standard MMPI scales except Hypomania, Hysteria, and Masculinity-Femininity. Psychasthenia (measuring tension, anxiety, rumination, insecurity) accounted for 23% of the variance in binge scores. Results indicate that binge severity varies within obese population and that binge eating is associated with psychological disturbance, particularly difficulties with anxiety/insecurity.

Kirkley, Kolotkin, Hernandez, and Gallagher (1992) compared MMPI distributions obtained from binge-purgers, obese binge eaters, and obese nonbingers and found significant differences on all scales except Masculinity-Femininity and Hypomania. Binge-purgers exhibited the most psychological distress and obese nonbingers exhibited the least distress. Obese binge eaters differed significantly from binge-purgers on fewer of

the scales than they did from obese nonbingers. These results suggest that binge eaters are a subgroup of the obese population that may benefit from treatment used for bulimia.

Prather and Williamson (1988) compared binge-purgers, binge eaters, and obese nonbinge eaters who were seeking obesity treatment, obese non-patients, and normal weight/eating controls on the MMPI, Symptom Checklist-90--Revised (SCL-90-R; Derogatis, Lipman & Covi, 1973), and the Beck Depression Inventory (BDI, Beck & Steer, 1983). The binge-purge group presented the highest levels of psychopathology compared to other groups. Obese binge eaters and obese nonbinge patients presented significantly more distress than the obese non-patient and normal weight/eating group. These findings highlight the importance of the discriminating between obese individuals who are, or are not, in treatment when conducting research.

Jackson (1997) explored the effects of eating style (binge or nonbinge eater) and weight (overweight and normal weight) on subscale scores of the Eating Disorders Inventory-2 (EDI-2, Garner, 1991), which reflects psychological traits, attitudes and behaviors relevant to eating disorders. She found that overweight, binge eaters scored significantly higher on Impulse Regulation and Bulimia subscales than overweight, nonbinge eaters. Binge eaters scored higher than nonbinge eaters on Drive for Thinness, Bulimia, Body Dissatisfaction, Ineffectiveness, Perfectionism, Interpersonal Distrust, Interoceptive Awareness, Asceticism, and Social Insecurity subscales. Overweight women scored higher than normal weight women on Drive for Thinness, Bulimia, Body Dissatisfaction, Interoceptive Awareness, and Asceticism subscales.

Berman, Berman, Heymsfield, and Fauci (1992) used structured clinical diagnostic interviews and found that about half of a group of severely obese individuals

seeking dietary treatment had a DSM-IV Axis I psychiatric disorder (particularly affective disorders). They also found that most of the individuals had some mild to moderate personality deficits that resulted in isolation, interpersonal sensitivity, and interpersonal difficulties. Black, Goldstein, & Mason (1992) used systematic, structured interviews to assess personality functioning in morbidly obese seeking gastric surgery and a psychiatrically normal comparison group. They found that morbidly obese subjects were more likely than the comparison group to have a lifetime history of mood disorders, bulimia, and nicotine dependence, and were more likely to meet diagnostic criteria for a personality disorder.

Yanovski (1993) found that among obese individuals not in weight loss treatment, those that were binge eaters were significantly more likely than non-binge eaters to have a lifetime prevalence of DSM-III-R psychiatric (especially major depression, panic disorder, bulimia) and personality disorder diagnoses (especially borderline and avoidant personality disorders), to have participated in psychotherapy, and to have a family history of substance abuse. Specker, de Zwaan, Raymond, and Mitchell (1994) found that three times as many obese binge eaters, as compared to obese nonbinge eaters, met criteria for an DSM-IV personality disorder. They stated that obese binge eaters should be considered as a qualitatively different group than obese non-binge eaters when addressing treatment issues.

Daniels (1996) administered the Questionnaire on Eating and Weight Patterns (QEW, Spitzer, 1992), EDI-2, BDI, and Borderline Symptom Index (BSI; Conte, Plutchik, Karasu, & Jerrett, 1980) to individuals participating in an eating disorders program. Individuals were separated into bulimic, obese binge eating, and obese non-

binge eating groups, and all three groups differed significantly on psychopathology, weight attitudes, and eating behavior. The bulimic group exhibited the highest depression scores, the strongest borderline personality patterns, the most generalized distress, and the most dietary/weight attitude disturbance compared to the other groups. Obese binge eaters displayed mild to moderate levels of these psychological and behavioral disturbances, but of more severity than obese non-binge eaters.

Affect Development and Regulation

Affect Theory

Some theorists discriminate between affect, emotion and feelings, but many use them interchangeably. There is general agreement among theorists that the human experience and expression of affect involves three interacting processes (Watson & Clark, 1994; Dodge & Garber, 1991; Izard & Kobak, 1991; Frijda, 1986). The biological or physiological system underlying affect involves the autonomic nervous system and neuroendocrine activation. The behavioral/expressive system relates to affect being evidenced in facial expression, speech quality, and body gesture. The cognitive/experiential system involves the reflective awareness and verbal expression of feeling states. Affect and emotion are often used interchangeably to reference physiological states and behavioral expression (Watson & Clark, 1994), while feelings are usually limited to labeling the subjective experience of emotion (Schwartz, 1987). Sifneos (1988) stated that affects are complex states consisting of interacting physiological, expressive and experiential systems. He also described affects as being

mental representations of feeling states linked with recollections of experiences that result in personalized meanings attributed to current feeling states.

Silvan Tomkins (1962, 1963, 1984) considered affects to be innate biological motivating processes and theorized that human motivation was based upon innate affects. He labeled specific innate affects in pairs that reflect the affective intensity range and their associated behavioral expression. Tomkins classified affects in terms of neutral, positive, and negative affects, with their expressive indicators, as follows in Table 2 (Kaufman, 1992).

Eckman (1993) emphasized that behavioral expressions of affects serve as feedback to us, and as critical information communicated to others so they have hints as to what we are feeling. Even when we are unaware or have not reflected upon our emotions, others notice changes in our behavior and provide feedback about their observations and ideas about what we may be feeling (Greenberg & Safran, 1989).

Tomkins believed that affects were primary motivators. He stated that affects serve as amplifiers for instinctual drives, such that drives obtain their power from affective influence. Although he believed that affect functioning was a system separate from cognition, he noted that affective and cognitive processes influence one another and work in relation to one another. Tomkins developed the concept of *ideo-affective* organizations, in which the unique union and interrelation of particular affects and cognitions become important personality traits, influencing thinking processes, affect regulation systems and behavioral displays.

Table 2: Affects and their physiological and behavioral expressions (Kauffman, 1992):

<u>affect tone</u>	<u>affect range</u>	<u>behavioral expression</u>
neutral	<i>surprise-startle</i>	eyebrows uplifted, eyes blinked
positive	<i>interest-excitement</i>	eyebrows down, eyes tracking, listening
	<i>enjoyment-joy</i>	lips widening, smiling
negative	<i>distress-anguish</i>	arched eyebrows, lip corners down, rhythmic crying
	<i>fear-terror</i>	eyes wide open, face trembling, skin pale and cool, skin hair erect
	<i>anger-rage</i>	red face, frowning, jaw clenched
	<i>shame-humiliation</i>	eyes and head cast downward
	<i>contempt-dissmell</i>	nose and upper lip raised
	<i>disgust-repulsion</i>	lower lip lowered/protruding

Izard (1971, 1977; Izard & Buechler, 1980) proposed an affect theory called *differential emotions theory*. He agreed with Tomkins' idea that there was a fundamental set of affects, with each affect having a specific innate neurological substrate, a unique behavioral expression, and a particular subjective feeling. He changed Tomkins' *distress-anguish* classification to *sadness* and added *guilt* to the basic set of affects. Izard's theory suggests that particular primary affects instigate and organize behavior, rather than simply being responses that result from cognitive evaluation processes (Izard & Buechler, 1980). Izard identified a set of six subsystems that can function alone or together- *homeostatic, drive, emotion, perceptual, cognitive and motor systems* - to form personality. He said that the most critical connections are the combinations of affective-cognitive structures that produce certain individual differences in personality traits and one's ability to relate to others. Izard believed that the fundamental affect, *interest*, had the most dramatic influence on personality structure, since it is an important motivation for the development of competencies, creativity, and relationship with others. *Interest* underlies the personality trait of *openness to experience* (McCrae and Costa, 1985), which consists of curiosity about internal and external experiences, as well as openness to new ideas and experiences. The ability to tolerate and reflect upon such experiences is a necessary component for affect-regulation and self-regulation.

Freud conceptualized affects as derivatives of instinctual drives rather than as primary motivating factors (Sulloway, 1979). Secondary to drives, affects were considered to be discharge processes occurring only when the drive was not completely gratified. Jones (1995) noted that Freud later began to separate affects from drives and

stated that anxiety could be a signal affect in response to perceived environmental dangers or drive-related impulses that were threatening. Freud never developed a system to describe affects as separate from the drive theory framework. Prompted by Tomkins' affect theory and developmental psychology's infant research, a number of theorists have revised the psychoanalytic theory of affects to view affects, rather than drives, as the primary motivators in human life. In particular, Jones (1995) developed a psychoanalytic theory of affect and stated that affects are the "experiential representation of a non-symbolic information-processing system that can serve as the central control mechanism for all aspects of behavior" (p. xxi). He conceptualized affects as nonsymbolic signals that relay information, even without the influence of cognition or conscious reflection.

There are affect theorists that assert that cognitive and/or perceptual processing precedes emotional processing (Lazarus, 1991, Plutchik, 1980). Much of this work has its roots in the work of Schachter (Schachter and Singer, 1962), who stated that environmental stimuli can create a state of autonomic arousal that develops into unique emotional experiences by the meanings that the individual assigns to the stimuli. He suggested that there was no emotion without autonomic arousal. He also stated that there was no emotional experience when the arousal state is attributed to non-emotional sources. Furthermore, Schachter & Singer (1962) were able to conduct empirical research that produced findings suggesting that emotional experiences may be determined by the manner in which individuals interpret the arousal state.

Lazarus (1991) proposed a cognitive theory of emotion in which the *cognitive appraisal* of the significance of the relationship between the individual and the environment is both sufficient and necessary for emotional experience. Emotional

experiences are essentially initiated by the unique appraisal and, without this assignment of meaning, there will be no emotional experience. Plutchik's (1980) theory asserts that cognitive appraisal precedes all emotion, but his definition of appraisal is based on using perceptual information rather than formal cognitive processing. To clarify this issue, Davidson & Ekman (1994) state that emotional experience does not depend on formal cognitive operations, rather, most emotional experience is preceded by some sensory information.

It appears that emotion and cognition are unique processes that are fundamentally indivisible, yet are separated for ease of conception and discussion. Zajonc (1984) stated that affect development does precede cognitive development, but that both emotion and cognition can be primary at any given time. He noted that cognition becomes inseparably connected with emotions early in development and that cognition can activate emotional processes. Izard (1994) stated that cognitive processes assume a critical role in affect regulation, regardless of whether they active or are activated by emotional experience.

Affect Development

Basic innate emotions are present in infancy and are primarily experienced and expressed physiologically and behaviorally (Tomkins, 1984; Schore, 1994). Krystal (1988) explained that the expressive aspects of affect become the principal mode of communication for the infant, with the experiential aspects of affect manifesting as undifferentiated precursor states of contentment and distress. As the infant matures into childhood, cognitive processes and social contact have progressive influence on the experiential aspects of affect. The developing complexity and range of emotion involves desomatization and differentiation of the affect precursor states. With the development of

cognition and ultimately language, emotions become represented symbolically and can be communicated through verbal exchange (Krystal, 1974, 1988; 1997). Lane, Quinlan, Schwartz, Walker, & Zeitlin (1990) stated that emotion is transformed and proceeds through developmental steps of desomatization, differentiation, and integration.

Lane & Schwartz (1987) developed a theory of affect development based upon Piaget's theory of cognitive development and infant/child observation research. They suggested that affect development involves cognitive structural transformations that determine the way we experience ourselves and the world around us. The levels of affect development are as follows: 1) *sensorimotor reflexive* stage- affect is experienced only through somatic sensations; 2) *sensorimotor enactive* stage - awareness of body sensations and the body in action is based upon global and consuming states of contentment or distress; 3) *preoperational* stage - individual emotions are experienced somatically and psychologically, but descriptions of the emotion tend to be simplistic and one-dimensional; 4) *concrete operational* stage - differentiated and complex blends of emotion are aspects of one's subjective experience; 5) *formal operational* stage. Full awareness of a range of complex blends of emotion coupled with ability to distinguish subtle nuances of emotion and understand the full range of emotional experiences of others.

Lane & Schwartz's (1987) model of affect development helps to promote better understanding of the information processing of the cognitive aspects of affects. Their model also provides a framework to discuss variability in how affects are individually experienced, expressed, regulated, as well as how this information can be used in social exchanges. Krystal (1987, 1988) stated that this scheme associates developmental stages

with 1) differentiation of affect; 2) one's ability to identify and express emotions; 3) level of complexity of the mental representation of self and objects; 4) the use of emotion as data on internal and external experiences; 5) degrees of differentiation between self-representation and object-representation; and 6) the capacity for empathy. He noted that their system provides a structure upon which clinical observations may be discussed in cognitive-affective terms.

Frosch (1995) presented a similar but less complex framework for discussing affect development. His *preconceptual* stage includes affects experienced as bodily sensations, perceptual stimuli, and impulses to engage in action, without access to affect in symbolic representation. Frosch stated that typical affect development enables a move from the sensorimotor level to a more *abstract logical* stage in which the individual experiences affect in a differentiated and symbolic manner that can be considered and expressed verbally. These two stages represent qualitatively different ways of regulating affect, namely *sensation/action* versus *abstraction/verbalization*.

Affect Regulation & Dysregulation

The word "emotion" is derived from the Latin verb *emovere*, which means to 'move out'. Similarly, Tomkins (1984) stated that affects are primary factors in motivation, amplifying drives, needs, thoughts and behavior. A major task for individuals is the management and regulation of these "moving" affects. *Affect regulation* is defined as what we do to influence the emotions we have and how these emotions are experienced and expressed (Kopp, 1987; Krystal, 1988; Schore, 1994; Gross & Munoz, 1995). It is a process that involves reciprocal interactions between physiological, behavioral-expressive, and cognitive-experiential realms of affect response

processes. Affect regulation is an integral aspect of *self-regulation* - the ability to organize and manage aspects of one's own physiological and psychological processes to promote independent functioning within personal and social realms.

When the degree of affect becomes excessive and unregulated, it can adversely influence mental and physical health and function. Dysregulated emotions become out of sync from one's self-organizing reciprocal feedback loop and may alter biopsychosocial systems at random. This concept involves an almost indivisible connection between affects and their contribution to the cognitive processing of them as the valid data of one's personal experience

Affective Regulation: Origins in Attachment

Developmental research findings indicate that the early relationship between infant and caregiver plays an integral role in the development of cognitive abilities for affect- and self- regulation (Stern, 1984, 1985; Emde, 1988a, 1988b; Edgumbe, 1984; Beebe & Lachmann, 1988; Furman, 1992; Osofsky, 1992; Goldberg, MacKay-Soroka, & Rochester, 1994). It is the synchrony and attunement to an infant's emotional expression that guides the caregiver to respond with facial/gestural expressions that help organize and regulate the emotional life of the infant (Stern, 1984; Emde, 1988a, 1988b). Early on, the parent reads and regulates the infant's emotional cues by providing an external "container" in service of the infant. The parent cognitively holds, processes and transforms the infant's undifferentiated sensations and affects into meaningful, reassuring affective experiences that can be given back to the infant. This function is the beginning of the teaching of affect tolerance (Krystal, 1988).

The development of language skills significantly impacts the child's developing emotional awareness and capacity for affect regulation, since they can begin to be taught names and meanings for their somatic affective sensations and experiences (Edgumbe, 1984). Stern (1985) stated that language, along with the process of labeling and validating, permits the verbalization of affect and the growing awareness of the complexities of emotions. Furman (1992) added that when children and parents discuss feelings, they experience the beginnings of empathy, and it encourages them to seek assistance in soothing their distress. Kopp (1989) noted that children can state their feelings to others, get information about the appropriateness of their emotional displays, and develop coping skills to regulate emotional expression.

The developmental research of Kopp (1989), Stern (1985), and Bretherton, Fritz, Zahn-Waxler, and Ridgeway, (1986) supports the idea that the ability to form verbal representations helps the child organize and integrate affective experiences, reflect on his feelings, and plan affect-regulating strategies. Labeling emotions provides a sense of control in handling emotions, rather than feeling overwhelmed and reliant on others to help contain and process the emotions. Krystal (1988) added that, in developing affect tolerance, the child learns to identify emotions as signals that can be evaluated and used to act in a way to eliminate or change stressful situations. He suggested that developing the capacity to represent the idea of an affect and other subjective experiences, as well as developing an awareness of how one feels and others feel, suggests that the child has acquired an understanding of the concept of mind.

Goldberg, MacKay-Soroka, & Rochester's (1994) research on attachment and affect has supported that the sensitivity and responsiveness of the parent to a child's

emotional experience is a critical influence on the way a child learns to regulate distressing emotions and to form relationships with others. They found that children who form secure attachments have learned that regulated emotional expression leads to positive results. These children, as compared to insecurely attached children, tended to maintain higher levels of symbolic play, exhibited more positive affect, and showed greater competence in their relationships with others. Research by Main (1991) revealed that deficient responsiveness may result in insecure attachment behavior, compromised affect regulation skills, and poor behavioral control.

Affective Regulation: Symbolic Representation

Most infants will attempt to engage in some independent self-soothing behavior. These behaviors typically take the form of thumb/finger sucking, body rocking, playing with caregiver's clothing etc., or rhythmic sounds. These behaviors also may serve as a precursor for development of transitional objects and phenomena (Winnicott, 1953; Gaddini, 1978; Tustin, 1981). Winnicott (1953) described *transitional object* as the infant's first creation - an attempt to independently self-soothe. The object, often a soft toy or blanket, is sought out in times of distress and/or separation from the mother. The behavior, typically surfacing around 4-6 months of age, functions as a means of affect regulation and a way to preserve union with the soothing qualities of the mother. Over time, the object takes on these characteristics, becomes a symbol of the mother and bridges the space and tension created by her periodic absences. Similarly, *transitional phenomenon* include babbling, engaging in 'sing-song' talk, and later developing imaginary friends, are also used to reduce tension and regulate distress.

Mayes & Cohen (1992) stated that the connection between the child and an attuned, empathic caretaker is necessary for the development of imagination and creativity. This symbolic play activity helps the child form a mental picture of the caretaker in her absence, which takes on some of the affect regulating and cognitive processing skills of the mother. The development of imagination, usually through play, is a resource that aids the child in organizing complex experiences into manageable forms. Play also wards off overwhelming emotions and promotes opportunities for positive emotions. Izard & Kobak (1991) see play as essential developmental work whereby feeling, thinking and acting can be organized

Dreams, imagination and creative stories also serve as a vehicle for regulation of affect, as well as opportunities for displacement and storage of affect-laden events into long-term memory (Taylor, 1987). Typically, transitional objects and phenomena are replaced by progressively more symbolic representations and activities as means of tension reduction and self-regulation. Although the development of interest sometimes reflect innate skill and predisposition, the activities secondarily serve affect-regulating functions for which the primary caregiver was once solely responsible. Development of imagination and activities which stimulate positive affects such as interest and joy tend to lead to broadening of experiences and strengthening of relationships, which further influence affect regulating functions (Izard & Kobak, 1991). Individuals with narrow imagination, limited play, few interests, and superficial relationships may rely on less effective means for temporary regulation of affect, such as excessive eating.

Affect Regulation: Neurobiological Findings

The empirical research findings on the neurobiologic processing of emotion highlight the interdependence of brain function systems. Affect processing and regulation depends on the interrelation of subcortical and cortical systems, the interdependence of both the left and right cerebral hemispheres, and the converging actions of different neurotransmitters (Derryberry & Tucker, 1992; Ciompi, 1991; Schwartz, 1987; Cicchetti & Tucker, 1994).

MacLean (1949) wrote of the 'triune brain', involving the interactive functions of the brainstem and hypothalamus (regulates autonomic and endocrine bases of emotional processes), the limbic system or 'visceral brain' (interprets experience in terms of emotional states and visceral manifestations), and the neocortex or 'word brain' (cognitive processing/symbolic representation of emotion into feeling states that can be reflected upon, expressed and modulated).

Findings from empirical research on the neurobiology of alexithymia has supported the idea that alexithymia is associated with some kind of variability in brain organization. Researchers have found that alexithymia is associated with right hemisphere dysfunction (Parker, Taylor, & Bagby, 1992; Weintraub & Mesulam, 1983); over-activation of the left hemisphere and inhibition of the right hemisphere (Berenbaum & Prince, 1994), and interhemispheric transfer deficits (Hoppe, 1977; Zeitlin, Lane, O'Leary, & Schrift, 1989). It is clear that both the left and right hemispheres play their own unique and complementary roles in the processing of emotion, cognition, and symbolic representation of emotion. However, results from these studies have been equivocal and the exact nature of the neurobiologic function and/or dysfunction underlying alexithymia is not yet clear.

Alexithymia: "Without Words for Emotion"

Alexithymia Construct

Krystal (1988) stated that “the assumption that other people’s emotional responses are similar to ours is the basis of empathy and is basic to human interaction.”

Nevertheless, he stated that the uncritical acceptance of this assumption has led to the “false belief that all patients have available to them the affective functions necessary for the utilization of psychotherapy.” Psychotherapists and psychoanalysts reported that particular patients, especially those with psychosomatic presentations, were difficult to treat with insight-oriented psychotherapy (Sifneos & Nemiah, 1970; Bruch, 1961, Waysfield et al, 1977; Taylor, 1995). Many observed that the patients experienced difficulty identifying and communicating feelings, presented a paucity of imagination and fantasy, report few dreams, and displayed an externally-oriented style of thinking (Horney, 1952, Bruch, 1962). Such characteristics have also been observed with patients presenting a variety of psychiatric disorders, notably post-traumatic stress and substance abuse disorders (Krystal 1962, 1968, 1971; Krystal & Raskin, 1970), eating disorders (Bruch, 1982, 1983), and somatization disorders (Nemiah, 1984).

Focusing on the cognitive disturbances of such patients, such as the reduced fantasy life, externally oriented style, and operational thinking of these patients, the term “pensee operateire” was offered by Marty & de M’Uzan (1963). The term “pensee operateire”, emerging from work with psychosomatic individuals, described a similar concrete style of restricted, stereotyped relating, and operational thinking which reflected deficits in symbolic function as well as fantasy production. Sifneos (1973) coined the term “alexithymia”, which derived from the Greek roots a = lack, lexis = word. thymos =

emotion, with particular focus on the impairments in identifying and verbalizing feelings. Krystal (1988) noted the importance of related problems of impairment in the capacity for self-care and anhedonia. The cluster of the cognitive and affective characteristics described by Sifneos and Marty & de M'Uzan were more precisely defined and integrated into the personality construct of "alexithymia" as we know it today. It is of note that, alexithymia is not a disorder, per se, but characterizes a personality style that overlaps various diagnostic categories.

Alexithymia: Affective Components

Krystal (1988) provided a focus on the disturbances in affect as they related to the alexithymia construct. He stated that such individuals' impaired ability to "utilize emotions as signals to themselves is based in the form that their emotional responses take." Their responses emerge from the physiological, "expressive", aspects of affect and are basically somatic in nature with limited verbalization. Their emotions tend to be undifferentiated, vague, and nonspecific, "as if they represented an undifferentiated form of common affect precursors." Thus, differentiation among the physiological and psychological aspects, as well as separation of feelings per se, does not appear.

The undifferentiated affective experience and minimization of affective verbalization leaves such individuals experiencing somaticized and distressing reactions rather than more "complete" experience and expression of emotions. He noted that only when one can experience the cognitive aspects of emotions (i.e., its meaning and source), and can concurrently have both the expressive reaction and an adequate capacity for introspection, is one free to experience and identify a "feeling". Alexithymics have difficulty differentiating between physiological and psychological experiences, and

although they are aware of generalized distress and may comment on vague physiological aspects of affective experience, they do not recognize or identify particular emotions or states. The inability for reflective self-awareness, which allows one to identify feelings as being an appropriate response to self-evaluation, is typical of alexithymia. What can emerge, through observation of others or what they think they should experience, is use of common expressions denoting affect but absent of a concomitant introspection and self-awareness with conviction and life that enhances their view of themselves.

Flannery (1978) noted that some individuals seem to experience distressing affects in somatic manner, often as illness. He noted the problems in diagnostics and treatment of such persons in medical settings. Similarly, he discussed that those with chronic pain syndromes often display alexithymic characteristics. With such individuals, and other psychosomatic illnesses, there is a common theme of presenting with emotions that are undifferentiated and nonverbalized. When such individuals are invited to explore feelings and when they do produce “affect” words (e.g. sad), they tend to have a loss of appropriate language to convey the experience further. Thus, emotions are not experiences as distinct, separate, identifiable responses, but rather generalized states of tension and discomfort (Nemiah, Freyberger, & Sifneos, 1976). They also tend to be unable to identify common autonomic somatic sensations that accompany the experience of particular feelings, and if able to identify as somatic component it is identical with symptoms of their presenting illness.

McDougall (1974, 1982) discussed that many patients displaying psychosomatic illnesses tend to exhibit deficits in proprioception, and seem faithful to their tendency to ignore physiological and psychological distress signals from the body. She also

described the concomitant rigidity in facial expression and body posture. Taylor (1991, 1995) stated that the alexithymic, prone to addictive behavior (e.g. substances, food), may show heightened focus on affective sensations that are distressing and present a driven need to block them. McDougall related this to the overabundance of sensory perceptions in place of introspection and self-awareness. Wurmser (1978) commented on the importance of such substitution of sensory preoccupation as being related to the insistence on the concrete and tendencies toward externalization, which is common in addictive personalities.

Given the lack of self-reflective behavior and absence of identification of specific feelings, alexithymic persons may be subject to a building up of affective components to an intolerable intensity, where sudden outbursts of affect can occur. Nemiah et al (1976) noted that such outbursts do not appear to aid in the awareness of the feeling, and individuals may see it as attributable to distressing somatic symptoms or external intrusions upon the body.

Alexithymia: Cognitive Component

The countertransference of many psychotherapists to alexithymic clients is one of feeling bored and drained, which reflects that such individuals present a style that tends to be dull and utilitarian with an emphasis on externally-oriented concrete details and facts (de M'Uzan, 1974; Nemiah, 1970; Taylor, 1984, 1995). Marty and de M'Uzan's (1963) classic study on "pensee operateire" noted that diminished symbolizing capacity is associated with unimaginative, factual expressions. They also remarked on an affective flatness that characterized speech. Nemiah & Sifneos (1970) described the alexithymic's relating of mundane facts in the place of wish-fulfillment fantasy. Krystal (1979) added

that, although dull and monotonous communication is common, he also found hysterical and verbose expressions that were similarly vague about the individual's wishes and needs. He noted that a severe impoverishment of imagination and difficulty using dreams were characteristic of both presentations. Several clinicians have commented on the lack of introspection and awareness, precluding revelation of inner attitudes, feelings, or wishes that usually animates speech (Nemiah & Sifneos, 1970; de M'Uzan, 1974, Taylor et al, 1984, 1992, 1995; Krystal, 1988).

Nemiah (1975) noted the tendency toward a utilitarian way of relating to others. McDougall (1974, 1982 a,b) stated that "their love objects are interchangeable, the central demand being that someone must be there". De M'Uzan (1974) spoke to the alexithymic's perception of herself and others as being stripped of personal, human qualities, which leads to the operative and concrete thinking. Taylor (1984, 1992, 1995) indicated that their communication style is marked by a reduced ability to form symbolic representations, so that inner attitudes, feelings, wishes, and drives are not revealed.

Krystal (1979, 1982, 1988) remarked on the impairment in the capacity for fantasy and association, with few dreams and difficulty utilizing dreams. He noted the need for fantasy and symbolization to permit creativity and neurotic formulations. This absence of symbolic formation regarding conflicts makes it difficult to deal with the cognitive aspects of affects, thus permitting verbalization and communication. Such individuals are left with only awareness of generalized physiological states, and are prone to communication through psychosomatic syndromes. The discomfort and tensions can be overwhelming, and the need to block physiological, affective tension is seen in the compulsive use of substances such as alcohol, drugs, food due to impairments in

symbolization and internalization of self-regulating functions which were limited to the external and omnipotent object representation. McDougall (1982) noted that an alexithymic style is characterized by “elimination of mental representations of their own parts and parts of their object representations.” The outcome is a stereotyped existence with an over-adaptation to reality, and imagination, fantasy, and feeling has been eliminated. McDougall (1974) saw the cognitive deficits as the failure to form essential self- and object-representations and functions, with a lack of symbolic structures with which representation of feelings and fantasy is possible.

Segal (1957) stated that the early symbols for objects are not experienced as symbolic or representative, but stand for the object itself, and she termed this “symbolic equations”. She stated that the symbolic equation between the original object and the symbol in the external and internal world is the basis of concrete thinking where substitutes for original objects can be used freely and are not experienced as significantly different from the object itself. The symbol and the object are treated as though they are identical and possess similar functions. Thus, the differentiation between the self and the object are obscured. She noted that when advanced symbolic capacities are absent, symbolic equivalents that involve use of the symbol as the actual object itself, renders the individual dependent on external objects. This is observed in addictive behaviors.

Alexithymia and Compulsive/Addictive Behavior

Krystal (1988) explained that the dynamic process underlying addiction is an inability to assume responsibility for soothing oneself. Relief for the alexithymic often comes from the use of some external agent and/or repetitive act. The objective of blocking distress reactions can be accomplished temporarily by the use of substances such

as drugs, food, and compulsive behaviors. When in distress, alexithymics feel overwhelmed, tense and helpless because they are not “free” to relieve their own distress. Alexithymics live as though some “external agent” must provide the “mothering” task of reducing distress. This process parallels that of a mother who must “read” the communications of her infant and take the appropriate actions to relieve the infant’s distress. Krystal (1988) stated that their self-presentation tends to seem immature and that the assumption of responsibility for self-soothing functions appears “dangerous” to them. He stated that, with such a presentation, distress can only be signaled - verbalizing, considering, and resolving the needs are reserved for the mother (Krystal, 1988).

The verbalization of affect allows one to communicate distress on one’s own. Krystal (1988) stated that alexithymics are unable to consciously assume responsibility for organizing and composing their thoughts, and depend on a chronological or thing-oriented scheme for their thoughts. He noted, “inhibition of self-caring tasks interferes with the adult potential to use and organize images, memories, and ideas and express them in adult language” (Krystal, 1988). Krystal (1979;1988) noted that if alexithymics make an effort to verbalize and clarify feelings, they may make sense of the dull, mundane “ babbling”. Krystal understands their monotonous, fact-based speech as their way of pretending that time itself will organize their thoughts for them if they continue the act of talking. He noted that any therapist must maintain a balance between verbalizing feelings and ideas in a way that is meaningful and erring in the way of informing the person about what they should think or feel (Krystal, 1988).

McDougall (1978) stated that their speech represents is an “act” rather than a symbolic means of communication of ideas or affect. The act is an effort to induce

feeling in the analysts so that the analyst will “act” in their behalf. McDougall (1982) stated that the objective is to make sure the analyst understands and relieves the distress that they signal. She described this process as primitive communication, suggestive of early psychic trauma that requires special intervention. She stated that alexithymic patients have difficulty observing and verbalizing their own mental processes. Such communications, permeated with messages not yet verbalized, are made known through countertransference affect. On a similar note, Taylor (1984) highlighted the alexithymic’s use of projective identification that, like the barrier that prevents the alexithymia from introspection, “serves to create massive barriers between their own inner world and the therapist-listener”(Taylor, 1984).

Depression and Alexithymia

Some clinicians and researchers have suggested alexithymia and depression may not be distinct, independent constructs. This criticism largely comes from empirical research finding moderate correlations between measures of alexithymia and the Beck Depression Inventory (BDI; Beck & Steer, 1983), a structured, self-report measure of depression (Haviland, Shaw, Mac Murray, & Cummings, 1988; Hendryx, Haviland, & Shaw, 1991).

In an effort to empirically examine the relationship between alexithymia and depression, Parker, Bagby, & Taylor (1991) conducted factor analyses using the items from the TAS and the BDI. In both undergraduate and psychiatric outpatient samples, a four factor solution was produced, with no overlap between BDI items (Factor 1) and TAS items (Factors 2, 3, 4). The factors corresponded closely with each particular construct. Factor 1 was comprised of BDI items suggesting depression; Factor 2, represented by TAS items assessing difficulty discriminating feelings from bodily

sensation and ability to communicate feeling states; Factor 3, was made up of TAS items suggesting imagination capabilities; and Factor 4 was comprised of TAS items assessing an externally-oriented thinking style. There was a weak but significant correlation ($r = .22, p < 0.01$) between the BDI and TAS Factor 2 (discriminating and communicating feelings) for both the undergraduate and psychiatric samples. There was also a weak negative correlation between the BDI and Factor 3 (imaginal capacities) correlation ($r = -.10, p < 0.05$). Thus, while there seems to be a relationship between depression and alexithymia, they appear to be distinct constructs that can be measured independently.

Longitudinal studies with substance abusers (Keller, Carroll, Nich, & Rounsaville, 1995; Pinard, Negrete, Annable, & Audet, 1996), psychiatric outpatients (Salminen, Saarijarvi, Aairela, & Tamminen (1994) and inflammatory bowel patients (Porcelli, Leoci, Guerra, Taylor, & Bagby, 1996) revealed that alexithymia scores remain stable after depression and general distress has diminished.

Measurement of Alexithymia: Empirical Data

The failure to develop reliable and valid measures has been a fundamental obstacle to the development and elaboration of the alexithymia construct. Confusion tends to lie in the broad definitions of deficits in affective and cognitive function. Several authors have described various problems with the measurement of alexithymia (J. Krystal, 1988; Taylor et al, 1984, 1986, 1993,1996).

A variety of measures have been developed over the years and can be divided into three main categories: interviewer-based, projective, and self-report. Each presents some problematic issues for consideration (Borenstein & O'Neill, 1993; J. Krystal, 1988). Interviewer-based measures, the most well-known being the Beth Israel Psychosomatic

Questionnaire (BIPQ; Sifneos, 1973; Apfel & Sifneos, 1979), have presented methodological problems such as difficulty with the administration and scoring procedure, susceptibility to interviewer bias, variable effects of the interview setting and experimenter skill, and unacceptable inter-rater reliability (Sneider, 1977; Taylor, 1981). Projective measures used have been based on existing projective tests (Rorschach and TAT) as well as those constructed for the purpose of assessing alexithymia (SAT-9; Cohen & Demers-Desroisiers, 1984). Most obvious concerns stem from the required prior training in the projective theory, administration and scoring (J. Krystal, 1988; Cohen, 1992). Although particular projective measures have been noted by several authors as promising (Taylor, 1993), reliability and validity information for use in different populations is needed. Self-report methods, such as the Toronto Alexithymia Scale (TAS; Taylor, Ryan, & Bagby, 1985), tend to address the problems with interviewer-based and projective methods. They are easy to administer and score, and relatively free of examiner bias effects. Nevertheless, construct validity issues have been noted, and research on reliability and validity is warranted.

An important issue that has been problematic in the assessment of alexithymia is that several measures have only successfully measured particular aspects of the alexithymia construct. For example, the TAS has been most useful in assessing self-report of the ability to identify and express emotion, whereas the AT-9 has been quite promising as a tool with particular focus on assessing symbolic functioning. To date, the Rorschach indices advanced by Acklin et al (1988) appear to be the most promising effort at the global assessment of the alexithymia construct (Taylor, 1996). Nevertheless,

assessment of alexithymia in various populations and utilization of control groups is needed (J. Krystal, 1986, 1988, Taylor, 1994).

In his review on the assessment of alexithymia, J. Krystal (1988) noted several important issues that should be considered when conducting further research on the assessment of alexithymia. One of the overriding concerns is that the objective assessment of alexithymia is in its youth. However, he stated that the construct “rings true” to many clinicians, and may help to clarify the obstacles to effective intervention for several populations, historically those with psychosomatic traits. He stated that, while much of the literature has treated alexithymia as a dichotomous variable, the research actually provides more support for its consideration as a continuous variable (Kleiger & Kinsman, 1980; Martin, et al, 1984; Taylor, 1992). Thus, he noted that documenting the percentage of alexithymic patients is not useful, and that using means and standard deviations to reflect base comparisons on the actual data is more appropriate. He also indicated that dichotomizing patients as alexithymic or non-alexithymic should be considered arbitrary, and that it may be sufficient to identify those that are at risk so that attention may be drawn to the potential need to modify psychotherapeutic interventions.

Alexithymic Disturbances in Eating Disorders

Alexithymia & Disordered Eating

There have been a number of studies assessing alexithymia in eating disordered populations, with more investigations with anorexic and bulimic populations than with the obese or compulsive eaters. Based on clinical work, Bruch (1962, 1973) and Stunkard (1975) observed that women with eating disorders had difficulty discriminating

between bodily sensations and the inner qualities of emotions, a capacity Bruch labeled as “interoceptive awareness”. Both authors noted that obese individuals experienced their emotional state in a relatively undifferentiated way that subsequently led to overeating to relieve unpleasant and generalized emotional tension or anxiety. Additionally, Wolff (1977) and Goodsitt (1983) observed that anorexics and bulimics both tend to display high rates of alexithymic characteristics, with a specific inability to differentiate among specific emotional states. Results of formal testing tended to relate to the particular aspects of the alexithymia construct that were assessed and the various measures that were employed.

Toronto Alexithymia Scale (TAS)

The vast majority of studies assessing alexithymia with eating disordered populations have utilized the Toronto Alexithymia Scale (TAS). The original TAS (Bagby, Ryan, & Taylor, 1985) attempted to assess all four aspects of the alexithymia construct: 1) identification of feelings, 2) verbalization/description of feelings, 3) fantasy life, and 4) externally-oriented thinking. The TAS has had two subsequent major revisions, which resulted in the TAS-R (Taylor, Bagby, and Parker, 1992), TAS-26 and the TAS-20 (Bagby, Taylor, and Parker, 1994). It is notable that on the most recent version, the TAS-20, the two factors regarding emotion have been shown to be most stable (Haviland & Reese, 1996). The factor assessing fantasy, included on the TAS and used in many of the studies, has been dropped from the TAS-20 due to lack of correlation with the global TAS score and high correlation with measures of social desirability. Thus, it does not appear that alexithymia, as defined by impairment in fantasy and symbolic representation, has been adequately assessed by the TAS in these studies.

Furthermore, assessment of externalized-thinking may not be as stable as those for emotional awareness, as reflected by the factor breaking into two separate, unrelated factors for a drug-dependent sample (Haviland & Reise, 1996).

Other studies using the TAS found higher TAS alexithymia scores for eating disordered groups than non-eating disordered controls (Bourke Taylor, Parker & Bagby 1992, Walton et al, 1992, Schmidt et al 1993, Cochrane et al 1993). There has been no relationship found between global TAS scores and binge eating frequency, duration of illness, amount of weight loss, and BMI (Bourke et al, 1992; Garrow & Webster, 1985; Schmidt et al, 1993; Cochrane et al, 1993; Jimmerson et al , 1994). Regarding level of depression, Schmidt et al (1992) found no relationship with TAS scores, but Cochrane et al (1993) found a positive relationship between those variables. Taylor et al (1985) stated that while depression and alexithymia were related, they were clearly different constructs.

Schmidt, Jiwany and Treasure (1993) conducted a controlled study of alexithymia in female patients referred to a hospital-based eating disorders clinic (n=173) who met DSM-III-R criteria for bulimia nervosa (BN) (n = 93), anorexia nervosa/ restrictor type (AN/R) (n = 55), and anorexia nervosa/ bulimic type (AN/BN) (n = 25). In the first part of the study, the mean TAS scores of the three eating disordered groups were compared to one another, as well as to those of a control group (n = 95) of undergraduate students (females = 48, males = 47). The AN/R group (M = 76.5; SD = 12.8) produced a significantly higher mean TAS score than the BN (M = 72.4; SD = 10.9) and AN/BN (M = 74.2; SD = 13.1) groups. All three eating disordered groups produced significantly higher alexithymia scores than the female (M = 66.8, SD = 9.3) and male (M = 63.6, SD = 11.2) control groups. For 56% of the AN/R group, 48% of the AN/BN group, and 50%

of the BN group, alexithymia was identified using the recommended pre-established TAS cut-off point (≥ 74) (Taylor et al, 1990; Bagby et al, 1990) for alexithymia, compared to 27% of the female controls and 9% of the male controls. TAS scores were not correlated with Body Mass Index (BMI) for eating disordered groups.

In the second part of the study, Schmidt et al (1993) investigated whether alexithymia is a personality trait common in bulimia or if it is a state-dependent effect of bulimia. The study also investigated whether alexithymia predicts short-term outcome in bulimia. Bulimic patients ($n = 41$) were administered the TAS, Hamilton Depression Scale (HAM-D; Hamilton, 1967), and measures assessing bulimic symptoms, body shape concerns, and symptom frequency before and after 10-week treatment with antidepressant therapy (2 week single- blind placebo trial followed by an 8 week double-blind placebo-controlled fluvoxamine trial). Researchers found significant improvement in eating pathology (binge / purge frequency), but no significant change in mean TAS or HAM-D scores from baseline to week 10. This finding suggests that alexithymia does not vary with clinical improvement. However, for those who had not fully recovered by the end of treatment, it could be stated that alexithymia may be associated with persistent symptoms. At treatment end, 73% of patients who scored as alexithymic at baseline ($TAS \geq 74$) were still alexithymic at week 10, and 87.5% of the patients who were not alexithymic at the outset remained in this category at week 10.

Schmidt et al (1993) did find a highly significant positive correlation between TAS scores at week 1 and 10, although baseline TAS scores did not correlate with any other variables. Assessed eating pathology at week 10 was positively correlated with HAM-D depression scores, and the TAS score at week 10 was positively correlated with

binge frequency at week 10. Contrary to previous suggestion/report of an association between alexithymia and depression, TAS scores did not correlate with HAM-D scores at the beginning nor the end of treatment. Interestingly, the researchers noted that alexithymic prevalence in their eating disorders sample was comparable, if not higher, than that reportedly found in other psychiatric samples, such as substance abusers (Taylor, Parker, & Bagby, 1990), psychiatric patients (Bagby, Taylor, Parker, & Loisele, 1990; Parker, Bagby & Taylor, 1991), and psychosomatic patients (Rubino, 1991).

Cochrane, Brewerton, Wilson, and Hodges (1993) interviewed and administered the TAS and the self-report measure Diagnostic Survey for Eating Disorders (DSED; Johnson, 1985) to patients being evaluated for a university-based eating disorders program. Patients met DSM-III-R criteria for anorexia ($n = 19$), bulimia ($n = 52$), mixed anorexia and bulimia ($n = 18$), and eating disorder NOS (obese and/or non-purging binge eaters) ($n = 25$). They compared the performances from these four eating disordered groups to published norms for female college students ($n = 370$) (Taylor, Ryan & Bagby, 1985).

Cochrane et al (1993) found no significant differences in mean TAS scores were found among the eating disordered groups, but the scores of the total group of eating disordered patients ($M = 74.8$, $SD = 10.8$) were significantly higher than that of the comparison control group ($M = 61.1$, $SD = 11.3$). The majority of eating disordered patients scored in the alexithymic range, with 63% of anorexics ($M = 72.4$, $SD = 12.2$), 56% of bulimics ($M = 74.9$, $SD = 11.2$), 61% of mixed anorexics-bulimics ($M = 78.5$; $SD = 11.1$), and 64% of the eating disorders NOS patients ($M = 74.1$, $SD = 8.4$) producing a

TAS score ≥ 74 (TAS cut-off score). Mean TAS scores were not significantly correlated with age, body weight, or binge or purge frequency. Mean TAS scores were significantly related to the DSED total score and DSED ratings of depression ($\rho = .50, p < 0.01$), anxiety ($\rho = .29, p < 0.01$), crying ($\rho = .38, p < 0.01$), irritability ($\rho = .29, p < 0.01$), sleep difficulty ($\rho = .24, p < 0.05$).

Jimmerson, Wolfe, Franko, Covino, and Sifneos (1994) administered the TAS, and two other measures of alexithymia - the Beth Israel Hospital Psychosomatic Questionnaire (BIQ; Sifneos, 1973) and the Revised Schalling Sifneos Scale (SSPS-R; Apfel & Sifneos, 1979) to non-medicated female outpatients who met DSM-III-R criteria for bulimia nervosa ($n = 20$) and to healthy females controls ($n = 20$). The bulimic group produced a mean TAS score that was significantly higher than that of the control group, with 40% of the bulimic sample scoring higher than the TAS cut-off score (≥ 74). None of the control group produced TAS scores above the cut-off score. Additionally, the bulimic group produced higher mean scores than controls on both the BIQ and SSPS-R. Although none of the participants met criteria for a major depressive disorder, the bulimic group produced higher depression scores on the Beck Depression Inventory (BDI) and Hamilton Rating Scale for Depression (HAM-D).

Laquatra and Clopton (1994) examined the relationship between alexithymia and characteristics associated with disordered eating (anorexia, bulimia, and obesity) in a non-clinical female undergraduate sample ($n = 308$). They administered the TAS and the Eating Disorders Inventory (EDI; Garner, Olmstead, Polivy, 1982). Overall, TAS scores and weight were not significantly correlated. A plot of the relationship between global TAS and the weight index suggested that the relationship differed for those subjects who

were more than 10% overweight and more than 10% underweight. For those more than 10% overweight, the TAS subscale scores for difficulty identifying emotion was positively correlated with weight ($r = .28, p < 0.05$). EDI subscale scores (except Perfectionism) were all significantly correlated with TAS subscales for difficulty identifying and difficulty expressing feelings (affective deficits), but not to TAS subscales for lack of fantasy life and externally-oriented thinking (cognitive deficits). They also found that suicidal ideation frequency was positively correlated with TAS subscales for difficulty identifying ($r = 0.32, p < 0.01$) and difficulty communicating emotions ($r = 0.29, p < 0.01$), and negatively correlated with externally- oriented thinking ($r = -0.17, p < 0.01$). Suicidal ideation frequency was also significantly correlated with EDI subscales for Ineffectiveness, Interoceptive Awareness and Interpersonal Distrust ($r = 0.52, 0.38$, and $0.34, p < 0.01$, respectively).

Laquatra and Clopton (1994) highlighted the finding that this sample had difficulty identifying feelings, adding to past findings that eating disordered individuals have difficulty expressing emotions (Kent & Klopton, 1990; Rybicki, Leppkowsky & Arndt, 1989). They attempted to explain the finding that disordered eating was related to the affective deficits, as opposed to the cognitive deficits, of alexithymia. Similar to implications made Morrison and Pihl (1989), these researchers suggested that the affective deficits are the primary feature of alexithymia and that individuals develop other difficulties (e.g., externally-oriented thinking) as they attempt to cope with their affective deficits. Making analogy to the qualitative differences associated with severity levels in depression, Laquatra and Clopton (1994) suggested that milder forms of alexithymia (nonclinical samples) may reveal only affective deficits, but more severe forms may

include both affective and cognitive deficits. The nonclinical college sample used may not have included the severity of alexithymia or disordered eating necessary to produce a significant relationship between disordered eating and cognitive deficits of alexithymia. The researchers did note that even women with subclinical eating and affective difficulties may be at some risk for distress and suicidal ideation.

de Groot, Rodin, and Olmstead (1995) conducted a longitudinal study to evaluate the relationship among alexithymia, depression, and somatic symptoms in a bulimic sample ($n = 31$) and a comparison control group ($n = 20$) following treatment at a hospital-based eating disorder unit. The researchers wanted to investigate whether intensive group psychotherapy contributes to a decrease in alexithymia. The bulimia group was significantly more depressed and more alexithymic (69% has TAS scores ≥ 74 cut-off) than the control group (5% had scores ≥ 74).

de Zwaan, Bach, Mitchell, Ackard, Specker, Pyle and Pakesch (1995) investigated whether obese patients with binge eating disorder have higher rates of alexithymia than obese patients who do not binge eat. The sample consisted of obese females ($n = 182$) who were entering a treatment study at a university based eating disorders program that involved a 26-week supplemented diet plus group psychotherapy. Participants had no significant health problems, no history of substance abuse, no history of schizophrenia or bipolar disorder, and were not taking psychotropic medication at the time of the study. Participants were categorized as having Binge Eating Disorder (BED) ($n = 83$) or non-BED ($n = 99$) according to DSM-IV criteria.

de Zwaan et al (1995) administered to participants the Hamilton Depression and Anxiety Scales (HAM-D, HAM-A; Hamilton, 1959, 1960), and the Beck Depression

Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) to assess mood symptoms. Mean scores on HAM-D and HAM-A did not differ between the BED and non-BED groups and generally fell within normal limits. The BED group did have a significantly higher mean BDI score than the non-BED group, but the mean score for the BED group reflected only mild depression. Participants were administered the Binge Eating Scale (BES; Gormally et al 1982) which assesses binge eating severity specifically designed for use with obese subjects, the Eating Disorder Inventory (EDI; Garner, Olmstead, Polivy, 1982) which measures eating-related and general psychological characteristics judged to be of significance with eating disordered populations, the Three Factor Eating Questionnaire (TFEQ; Stunkard & Messik, 1985) which assesses cognitive restraint, eating disinhibition, and hunger susceptibility, and the Control/Impulsivity subscale of the Multidimensional Personality Questionnaire (MPQ, Tellegen, 1982). The BED group produced significantly higher mean scores than the non-BED group on the BES, EDI, TFEQ, and Control/Impulsivity scale. Mean scores were not significantly different on EDI Maturity Fears and Interpersonal Distrust scales or the TFEQ Cognitive Restraint scale.

de Zwaan et al (1995) administered the 26-item Toronto Alexithymia Scale (TAS-26, Taylor, Ryan & Bagby, 1985) to participants. Considering alexithymia as a categorical personality variable, 17% of subjects had TAS scores of 74 or higher, which is comparable to rates found in nonpatient control groups (Parker, Taylor & Bagby, 1989) but significantly lower than other eating disordered groups studied (Bourke et al, 1992; Cochrane et al, 1993; Schmidt et al, 1993). They did find a higher prevalence of alexithymia in the BED group (24%) compared to the non-BED (11%) group, but the

difference was not significant after correcting for multiple comparisons. No significant difference was found between mean TAS scores for BED ($M = 63.8$, $SD = 11.5$) and non-BED ($M = 61.9$, $SD = 8.9$) groups. They did find that high scores on EDI subscales of Interpersonal Distrust and Ineffectiveness, and low educational level, were independent predictors of global TAS scores and together explained 27% of the variance. The BMI, depression, and eating pathology were not significant predictors of TAS scores.

de Zwaan et al (1995) qualified the low level of alexithymia found in their total sample, compared with normal sample, by stating that the pre-selection included women paying for treatment which involved group psychotherapy. They suggested that the sample may have been a more psychologically-minded group than other obese and/or binge eating individuals in the general population. Furthermore, they added that their sample was highly educated, with more than half possessing a college degree.

Morosin and Riva (1997) investigated the presence of alexithymia in an obese, non-bingeing eating sample ($n = 165$) from an inpatient eating disorders clinic compared with a normal-weight female control sample ($n = 135$). Participants were administered the TAS-20, Minnesota Multiphasic Personality Inventory-2 (MMPI-2), Anxiety Scale Questionnaire, and the Eating Attitudes Test (EAT). Alexithymia was not characteristic of the obese sample, as they had mean TAS-20 global and subscale scores below the established cut-off (≥ 61) and did not differ significantly from the control group. Only a subgroup of the obese sample presenting psychopathological traits displayed significantly higher rates of alexithymia, with a mean TAS-20 score ($M = 63.4$, $SD 13.6$) above the cut-off.

Thematic Apperception Test (TAT)

Taylor and Doody (1985) obtained monadic speech samples from neurotic and psychosomatic patients using responses to selected TAT cards. They found the latter group to be less verbally productive (total words) and produced a more limited emotional vocabulary ([unambiguous] affect vocabulary score: AVS) than the former group. The investigators suggested that the AVS correlated with total word count and number of human movement responses (M) on the Rorschach, which they stated reflected fantasizing ability. Given that the samples were collected from a monadic situation, the investigators reported more support for a trait, rather than state concept of alexithymia, as past studies found differences between the same groups only when an interactional or dyadic situation was used (Lolas & von Rad, 1981). Taylor, Doody, and Newman (1981) found that in using the TAT, inflammatory bowel patients uttered less affect words and less total words than a neurotic sample. Defournay, Hubin, Luminet (1977) also investigated alexithymia by examining total word production to TAT cards and found diminished production in a coronary-prone Type A sample group. There were no investigations available that examined the relationship between obesity and affect word production using the TAT.

Gray (2001) further examined the presence of affective and cognitive deficits using the TAT (with a battery of other measures) in an sample ($n = 61$) of outpatients and inpatients classified into eating disorder (ED), borderline personality disorder (BPD), and mixed ED / BPD groups and a sample of non-patients controls ($n = 10$). To assess alexithymic characteristics, TAT narratives were coded for amount and quality of verbal expression across the four dimensions of the alexithymia construct. She found that eating disordered patients were less likely than non-patients to refer to their own affective

experiences on the TAT, but did not present narratives that reflected reduced fantasy/imagination or a concrete/externalized style.

Archetypal Test with Nine Elements (AT-9 and SAT-9)

The AT-9 is a grapho-projective test used to measure symbolic function, a central aspect of the alexithymia construct, was created by Durand (1967) and introduced into the alexithymia literature by Demers-Desroisiers (1982). Cohen, Demers-Desroisiers, and Catchlove (1983) developed a quantitative scoring system (SAT-9) which resulted in highly acceptable inter-rater reliability. On the SAT-9, the participant is presented with 9 items and asked to integrate them into a drawing and provide a written explanation for the drawing. Two of the nine items (fall, devouring monster) elicit anxiety, three items resolve anxiety (sword, refuge, something cylindrical which turns/ progresses), one item is the resolving agent (character), and three accessory items which reinforce the constructed myth (water, fire, animal). The items become symbols when integrated into a myth through a drawing, to which meaning is given with a written explanation. The objective is the acknowledgment and resolution of the anxiety elicited by some of the items using other items for that purpose. Prerequisite to adequate performance is the ability to use symbolic representation and imaginative processes. Those with inhibited symbolic function are unable to integrate the items into a drawing/story and are unable to acknowledge or resolve the anxiety.

The AT-9 and SAT-9 have most often been used to assess symbol functioning of psychosomatic individuals, including chronic pain patients and various types of psychosomatic patients (Cohen et al, 1983; Catchlove et al, 1985) patients with various somatic symptoms and psychiatric outpatients (Cohen et al 1994). Regarding eating

disorders, only two studies could be found. Bourke et al (1985) found that anorexic inpatients assessed with the SAT-9 manifested impaired symbolic function. The authors stated that they found a lack of correlation between symbolic function and performance on a scale of interoceptive awareness; it was suggested that this finding supported the trait-cluster concept of alexithymia.

Legorreta et al (1988) investigated symbolic functioning aspects of alexithymia in moderately and morbidly obese women and found that both groups presented a higher degree of impaired symbolic function inhibition than normal-weight controls. The authors suggested that the type of measure revealed inconsistent results. Self-report measures of alexithymia suggested that moderately obese individuals perform more like normal weight controls than the morbidly obese; however, it is notable that the measure used has questionable reliability and validity. Conversely, interviewer-based measures suggested that the two obese groups were more similar in alexithymic symptoms. This finding highlighted the idea that different scale formats for measuring alexithymia can blur results. The authors also stated that, given clear alexithymic impairments in the morbidly obese, surgical intervention was the treatment of choice. However, they noted surgery was more concrete and parallel to obese individuals' style of cognition, but their assumption that physical capacity and overeating response would be diminished neglected to consider how the underlying conflict might then be resolved.

Rorschach Inkblot Test

Multiple studies using the Rorschach have identified alexithymic characteristics in various types and severity levels of psychosomatic pathologies (Waysfield et al, 1977; Acklin & Alexander, 1988; Faleide et al 1988). Results of these investigations revealed

limited productivity, inhibited affective expression and poorly modulated affect, reduced fantasy, and cognitive constriction. Earlier studies of alexithymia in psychosomatic individuals (Leavitt & Garron, 1982; Vogt et al, 1977; Safar et al, 1978; Taylor et al, 1981) were fraught with methodological difficulties, as different methods of test administration, scoring, and interpretation precluded reliable comparison of findings from different studies (Bash, 1986). These factors included lack of control for response productivity, inter-rater reliability checks, and normative reference data (Acklin & Alexander, 1988). More recent studies have utilized the Rorschach Comprehensive Scoring System (Exner, 1985) to facilitate comparisons among results from various studies.

Acklin and Alexander (1988) assessed four groups of psychosomatic patients and found that, not only were psychosomatic patients significantly more alexithymic than nonpatients, but that there exist a number of differences in the personality processes among different patient groups. They suggested that research assessing alexithymia using heterogeneous groupings of psychosomatic patients is of questionable validity and reliability. Psychosomatic patients produced significantly more impaired performances on the seven variables assessing the four characteristics of the alexithymia construct. The variables reflected functioning in the areas of fantasy (low R, low M), affect (low wtd SumC, low FC), cognition-perception (low blends, high lambda), and available adaptive resources (low EA).

Acklin and Bernat (1987) used the same Rorschach variables to investigate the relationship among alexithymia, depression, and chronic low back pain symptoms. These patients were distinguishable from inpatient depressives, in their exhibition of

alexithymic symptoms, and were more similar to a comparable personality disorders group. The back pain patients were impaired on all seven alexithymic variables, and were most impoverished in capability for fantasy (low M), affective responsiveness (low SumC), and adaptively integrated affect (low FC). Compared to the other groups, back pain patients exhibited the greatest degree of cognitive constriction (low blends) and perceptual stereotype (high lambda). The latter finding is notable, as the authors indicated that response productivity was controlled by eliminating protocols with $R < 13$. Although not included as a variable representing aspects of the alexithymia construct, most of the low back pain patients displayed an ambivalent style (EB) suggesting vulnerability to poor coping under stress.

Clerici et al (1988) explored alexithymic characteristics in a morbidly obese sample preparing for surgical treatment, a group the investigators considered to be representative of psychosomatic patients. With this study, they utilized the same Rorschach variables to reflect alexithymic characteristics, except for concrete cognition reflected in low blends. To examine whether the obese group was significantly more alexithymic than normal weight controls, the authors used the Exner general population reference group norms. Impoverished fantasy and poor perceptual interpretation were noted. The controlled affective experience and expression were related to the Exner's comment on the rigidity frequently exhibited by children and adolescents reflecting incapability to show emotions and conflicts without fearing retaliation. The reduced adaptive available resources were related to diminished use of emotional and self-reflective resources. The investigators also noted reduced ability to express and elaborate

aggression (low S) and social conformity (high H, high A). These results confirmed earlier findings of alexithymic style in psychosomatic symptomatology.

Purpose of the Study

The intent of this study was to assess alexithymia in an obese female population displaying a wide range of levels of overweight. It was hypothesized that a mediating variable, compulsive eating, may be the significant factor in the relationship between alexithymia and obesity. Although there have been a number of investigations assessing alexithymia in various populations, questions about measurement abound the literature. Assessment of alexithymia in eating disorders, specifically obese populations, has tended to focus on particular aspects of the alexithymia construct. Therefore, it is unclear whether alexithymia is 1) characteristic of the obese in general, 2) characteristic of compulsive overeaters, or perhaps 3) unrelated to obesity and/or compulsive overeaters.

This investigation examined the utility of two kinds of measures of alexithymia within this population. A projective measure, the TAT, was administered to assess affective verbalization (total affect words) and fantasy production (total word score and story development). The TAS-20 was administered to assess identification of emotion, verbalization of feelings (attitude and behavior), and an externalized cognitive style. To understand the role of alexithymic characteristics in those with overeating disturbances, these characteristics are discussed within a theoretical framework highlighting the overeating process as serving a self-regulatory function.

In documenting alexithymia in the obese and/or in compulsive eaters, it is hoped that a better understanding of possible impediments to effective insight-oriented therapy

for overweight individuals will be revealed. It was hypothesized that an alexithymic style is more common with the obese population as compared to a non-eating disordered population, but may be especially characteristic of a subset of the population whose compulsive eating or bingeing symptoms are notoriously difficult to treat. The literature has implicated alexithymic impairments in the problem of obesity, which involve difficulty identifying and expressing feelings, reduced fantasy and impaired symbolic functioning, and an externally-oriented cognitive style. These characteristics are believed to play an integral role in the meaning inherent in the process of eating and the food itself to the obese individual.

In uncovering alexithymia as a characteristic of compulsive overeaters, we may better understand the difficulties in treating such individuals in psychotherapy. Finally, we can develop better methods for assessing which individuals will be better suited for various methods of psychotherapeutic interventions. Understanding the nature of the symptomatic process may lead to ideas toward resolving the conflicts underlying the symptom, especially as the symptom leads to a condition having detrimental physical, psychological, and social effects.

Hypotheses

Hypothesis One

There is a positive correlation between weight (BMI) and alexithymia.

- a) As BMI increases, TAS-20 total score will increase
- b) As BMI increases, TAT total word score will decrease
- c) As BMI increases, TAT total affect word score will decrease

d) As BMI increases, TAT total vague affect word score will increase

Hypothesis Two

The relationship between weight and alexithymia is mediated by compulsive eating.

Hypothesis Three

Non-compulsive eaters (NCE) have lower alexithymia scores, as measured by the TAS-20, than moderate compulsive eaters (MCE) or severe compulsive eaters (SCE).

Hypothesis Four

Non-compulsive eaters (NCE) are more likely to have lower alexithymia scores, as measured by the TAT scores (TAT total word, total affect words, total vague affect words), than moderate compulsive eaters (MCE) or severe compulsive eaters (SCE).

Hypothesis Five

Compulsive eaters have higher somatization scores than non-compulsive eaters

Hypothesis Six

Non-compulsive eaters (BES cutoff < 15) will have less self-reported somatic complaints for which they have sought medical services than either moderate (BES 15-24) or severe (BES $\geq$ 25) compulsive eaters.

Hypothesis Seven

There is a significant positive relationship between somatization and alexithymia.

- a) As BSI somatization increases, TAS-20 total score increases
- b) As BSI somatization increases, TAT total word score decreases
- c) As BSI somatization increases, TAT-20 total affect score decreases
- d) As BSI somatization increases, TAT-20 vague affect score increases.

Hypothesis Eight

Moderate and severe compulsive eaters are significantly more likely than non-compulsive eaters to have other self-reported addiction problems.

METHOD

Population

This study involved an experimental group (N = 97) consisting of female participants, ranging from mildly to morbidly obese, who are enrolled in local Weight Watchers programs. Participants at least age 18. Age, educational level, and occupation will vary significantly. The control group (N = 80) will consist of individuals from the community with a variety of weight levels and eating patterns. This group was obtained by sampling 1) university non-professional staff, 2) clerical staff at a local community mental health center, 3) individuals from the community at large.

Procedure

During a formal meeting, individuals enrolled in a Weight Watchers program were presented with an detailed overview of the study. The disclosure allowed enough information so that they could decide if they would like to volunteer, but they were kept blind to purpose and hypotheses of the actual study. They were informed that the investigation is part of a dissertation project that focuses on learning more about individuals participating in a weight reduction programs with the goal of improving current services aimed at enhancing weight loss and improving health. The general nature of the tests and time commitment involved were disclosed. Potential participants were informed of the importance of their anonymity during and after the assessment, and that only assigned numbers will be paired with demographic information and responses. Information regarding their rights in psychological investigations will be provided

verbally and in writing, with particular emphasis on the right to withdraw from participation at any time. Participants were told that they will be paid \$5.00, not for their time but, rather, in appreciation of their involvement.

Individuals that agreed to participate signed-up and were contacted by this investigator to schedule a testing appointment. Participants were informed that testing would last approximately 90-minutes and that rest breaks would be included. Testing was conducted on an individual basis at the Weight Watchers facility and at a nearby community center. Participants completed consent forms that provided information about participant rights and the investigator's phone number for any questions or comments.

Measures

Structured Clinical Questionnaire (SCI)

A questionnaire was administered to obtain demographic information, past and present weight-loss strategies and goals, and past and present medical and psychological services used. A copy of the questionnaire is provided in Appendix A. The questionnaire was self-administered and required approximately 15 -20 minutes.

Determinations regarding weight status, such as overweight and obese, were established by use of the Quetelet's Body Mass Index (BMI), a method of standardizing body weight across height, was calculated for all subjects' reported weight as kg/m^2 . To compute one's BMI, weight is measured in kilograms (pounds x 0.45), and that product is divided by the square of height in meters (inches x 0.0254). BMIs between 19 and 25 are considered within normal limits. However, Manson (1995) conducted a study of over 100,000 nurses and found that women weighing at least 15 percent less than

average were the least likely to die prematurely and that death rates rose steadily with increasing weight - even in women that were not considered obese. Findings from that study suggested that a BMI of less than 20 is optimal.

For the proposed study, BMI was used as a continuous variable and was converted into categories indicating average weight ($BMI < 25$), moderately overweight ($BMI = 25-29$), and severely overweight/obese ($BMI \geq 30$). The categories are made in accordance with the World Health Organization's recommendations and accepted medical standard for obesity being at 20% over expected/ideal weight and 40% over expected weight being severely overweight. It should be noted that the BMI, as with most other weight measures, has its limitations.

Binge Eating Scale (BES; Gormally, Black, Daston, & Rardin, 1982).

The BES is a self-report assessing binge eating in obese individuals. It has been applied in clinical research studies with a variety of samples to categorize individuals according to severity of binge eating. This tool assesses behavioral aspects of binge eating episodes, in addition to the feelings and thoughts associated with bingeing. It yields one total score providing a general measure of severity, but precludes measurement of binge frequency or establishment of a specific diagnosis. The BES is free of clinical jargon and is written with "I" statements in which the participant is asked to choose the statement in each item with which she most identifies. Scoring involves an uneven distribution of weights for each item.

Norms are available for two obese samples, with cutoffs established by comparing interview data for severity of binge eating with the BES scores. Gormally et al (1982) demonstrated satisfactory internal consistency by comparing overall total BES scores

with scores on individual items. Concurrent validity was demonstrated by comparing scores on the BES with binge eating severity ratings made by trained interviewers. BES scores were significantly different across rated severity levels in two different obese samples. There have been no known studies assessing test-retest reliability, or discriminant and predictive validity for the BES. Completion of this scale required approximately 10 minutes.

Wechsler Adult Intelligence Scale-Revised, Vocabulary subtest (Wechsler, 1981).

There are conflicting findings regarding the correlation between intelligence and alexithymia. Although some studies did not show any significant relationship (Parker et al 1989; Taylor, Parker, Bagby & Acklin, 1992), others studies reported that lower educational level or intelligence was associated with higher rates of alexithymia (Bagby et al 1986; Bourke et al 1992; Pasini et al 1992). Thus, the vocabulary subtest of the WAIS-R will be administered to provide a brief screening of intelligence. The Vocabulary subtest has a correlation with Full Scale IQ score of 0.86, and is considered adequately reliable with a test-retest reliability coefficient of 0.92 and split-half coefficient of 0.96 (Kaufman, 1990). Administration time was approximately 10 minutes. Individuals trained to administer the subtests were kept blind to the purpose and hypotheses of the study. Scoring was completed by the principal investigator.

Brief Symptom Inventory (BSI; Derogatis, 1993)

This 53-item Likert self-report scale provides a brief, standardized measure of the presence and severity of psychiatric symptoms experienced by the subject over the past week. It includes subscales for somatization (SOM), obsessive-compulsive (O-C), interpersonal sensitivity (I-S), depression (DEP), anxiety (ANX), hostility (HOS), phobia

(PHB), paranoia (PAR), and psychoticism (PSY). It also provides for a global symptom severity index (GSI), positive symptom total index (PST), and a positive symptom distress index (PSDI).

The reliability and validity of the BSI has been demonstrated with both clinical and non-clinical populations. The BSI has also been used with eating disordered and alexithymic populations (Taylor, 1994). The measure has good concurrent validity. The administration took approximately 10 minutes and served as a good screen for psychiatric symptoms and mood problems that might have impacted performance on the other measures.

Toronto Alexithymia Scale-20 (TAS-20; Bagby, Parker, & Taylor, 1994).

This twenty item self-report scale consists of a three-factor structure theoretically congruent with the alexithymia construct. This version is the result of the second major revision of the original TAS, which purported to measure the four aspects of the alexithymia construct. On the TAS-20, those items originally included to assess daydreaming and fantasy activity were dropped due to low item-total scale correlations ($r < 0.20$) and high correlation with a measure of social desirability ($r < 0.20$). The stability and replicability of this three-factor structure has been demonstrated with both clinical and non-clinical populations by the use of confirmatory factor analysis. This revision documented good internal consistency, test-retest reliability, as well as good convergent, discriminant, and concurrent validity. Factor 1 consists of seven items that collectively represent difficulty identifying feelings; Factor 2 consists of five items which represent difficulty describing feelings; Factor 3 consists of eight items which reflect externally-oriented thinking.

The TAS-20 demonstrated good internal consistency (Chronbach's $\alpha = .81$), as did each of the three factors ($F1 = 0.78$, $F2 = 0.75$, $F3 = 0.66$). Test-retest reliability over a 3-week period was also demonstrated ($r = 0.77$; $p < 0.01$). Convergent validity was adequate, as revealed by the negative relationship with the NEO-PI domain scales of Openness to Experience ($r = -0.49$, $p < 0.01$), and the subscales of feelings ($r = -0.55$, $p < 0.01$), and fantasy ($r < -0.30$, $p < 0.01$). The TAS-20 was also negatively correlated with a measure of psychological mindedness ($r = -0.68$, $p < 0.01$). Discriminant validity was demonstrated by non-significant relationships between the TAS-20 and traits of agreeableness ($r = -0.09$, $p < 0.05$) conscientiousness ($r = -0.21$, $p < 0.05$) and excitement-seeking ($r = 0.07$, $p < 0.05$). Concurrent validity was demonstrated by a significant positive relationship between the TAS-20 ($r = 0.53$, $p < 0.01$) and all three factors ($r = 0.36, 0.57, 0.30$, $p < 0.05$) with the Beth Israel Psychosomatic Questionnaire (BIPQ).

Haviland and Reise (1996) evaluated the factor structure utilizing a sample of medical students and corroborated the three factors. However, they found that use of the scale with a psychoactive substance-dependent inpatient sample resulted in the first two factors actually formed one factor, and the third factor split into two unrelated factors. Thus, they recommended checking the factor structure when practicable. For this study, the scale provided information regarding the participant's self-reported ability to identify and express feelings and acknowledgment of a cognitive style relying on external stimuli. Administration time for the measure was approximately 10-15 minutes. Scoring was conducted by the principal investigator.

Thematic Apperception Test (TAT; Murray and Morgan, 1932).

TAT Cards 1, 2, 3BM and 4, which consist of characters in various situations, and Card 20, a blank card, will be administered to assess expression of affect and fantasizing ability. The TAT is expected to reveal the overt expression of affect that is an essential feature of the alexithymia construct; that is, the actual identification and communication of feelings, rather than the self-report of such behavior. There is evidence to suggest that, compared with controls, psychosomatic populations use fewer affective words and fewer total words on the TAT (Taylor & Doody, 1985; Taylor, et al 1981). To this investigator's knowledge, The TAT has not been used in this manner to assess alexithymia with an eating disordered population. The goal was to obtain objective ratings on frequency of word type, rather than scoring it for content/theme, related to assessing alexithymic characteristics of affective expression (affect /vague affect words) and imagination/fantasy production (total word production).

In this study, the TAT total affect score was obtained by tabulating the total number of words that are reflect unambiguous affect or its derivatives (e.g., "sad", "angry", etc.). A vague affect score was obtained by tabulating all words/short phrases that suggest affect but are ambiguous. These words either leave the reader guessing the nature of the emotion (e.g., "feels bad") or reflect physiological states of experience (e.g., "worn out" or "tired"). The scores of three independent raters were recruited to identify and score "affect" and "vague affect" words. The TAT total word count is the sum of the total word production across cards. Administration was verbal and in written format and lasted approximately 20 minutes. Assistants administering the TAT were trained to use an administration technique that included both spoken and written instructions. Subjects

were informed that they had 5 minutes to write a story for each TAT card. (see Appendix D). The examiner left the room during the writing of each story. This process was intended to create a monadic (one-person) situation that is associated with a trait concept of alexithymia, rather than a dyadic situation (two-person) that is associated with a state-dependent concept of alexithymia.

RESULTS

Demographic Data

One hundred seventy-seven females participated in the study. Participants ranged in age from 23-70 years (mean = 39.05, SD = 11.14). The sample was 70.1 percent Caucasian (n = 124), 13 percent African-American (n = 23), 5.1 percent Latin American (n = 9), 5.1 percent Native American (n = 9), 3.4 percent Asian American (n = 6), 1.1 percent East Indian (n = 2), and 2.3 percent West Indian (n = 4).

Forty percent of participants were married (n = 72), 16.4 percent were divorced (n = 29), 9.6 percent were separated (n = 17), 2.3 percent were widowed (n=4), 6.8 percent were living with a significant other (n = 12), and 24.3 percent identified themselves as never married (n = 43).

Thirty-three (18.6 percent) of the participants identified themselves as unemployed and/or homemakers. Twenty (11.3 percent) were employed in unskilled labor positions, 27 (15.3 percent) held clerical positions, 29 (16.4 percent) held skilled/trade positions, 52 (29.4 percent) held semi-professional positions, and 16 (9 percent) held professional positions.

Three participants (1.7 percent) had obtained some high school education, 35 (19.8 percent) were high school graduates, 40 (22.6 percent) had some college education, 19 (10.7 percent) had two-year/associate degrees, 51 (28.8 percent) had graduated from college, 8 (4.5 percent) had some graduate/pre-master's degree education, 13 (7.3

percent) had master's degrees, 1 (0.6 percent) had some doctoral level training, and 7 (4 percent) had their doctoral/law degrees.

Approximately 28 percent (n = 51) of participants were in individual counseling or psychotherapy at the time of testing or within the past six months of testing. Seventy-eight of the participants (47 percent) had been in some kind of individual psychotherapy or counseling during their life. Thirty of these individuals (45 percent) reported seeking psychotherapy primarily for assistance with depression, twenty-nine (27 percent) for anxiety, nineteen (17 percent) for mixed depression and/or anxiety, seven (5 percent) for obsessive-compulsive disorder, seven (5 percent) for bipolar disorder, two (0.5 percent) for psychosis. Two individuals (0.5 percent) had been in psychotherapy for disordered eating. Forty-one individuals (28 percent) had been in marital therapy. Twenty-two percent (n = 39) of the participants were taking psychotropic medication. Of the individuals taking psychotropic medication, 13.6 percent (n = 24) of participants received prescriptions from a psychiatrist and 9 percent (n = 16) from their primary care or other physician.

Nine (5.1 percent) of the participants were receiving counseling for addiction to drugs/alcohol and/or gambling. Eighteen (10.2 percent) were attending 12-step (AA, NA, OA) meetings at least monthly. Six (3.4 percent) of participants reported being addicted to illegal drugs, 13 (7.3 percent) to alcohol, 1 (0.6 percent) to prescription medication, 5 (2.8) to gambling, and 11 (6.2 percent) to shopping. Thirty-one (17.5 percent) participants reported that they were addicted to food. Eighty-seven (49.2 percent) reported an addiction to nicotine and 45 of these individuals reported that they continue to smoke cigarettes daily.

Participants reported their medical conditions and/or physical complaints. Some of these difficulties included whether they were experiencing symptoms of a potential psychosomatic illness. Somatic complaints not associated with specific disease etiology, such as migraine headaches, chronic headaches, essential hypertension, stomach discomfort/gastritis, irritable bowel syndrome, chronic pain, dermatitis and chronic fatigue were classified as psychosomatic symptoms, in concert with past research on classic psychosomatic illness. Forty-six (26 percent) participants reported seeking medical treatment for these somatic complaints within the past 6 months. Twelve (6.8 percent) individuals reported seeking medical treatment for more than one somatic complaint within the past 6 months. Seven (4 percent) participants reported seeking medical treatment for nonspecific somatic conditions in the past. At the time of testing, 26 (14.7 percent) participants were taking prescription medication for somatic symptoms, and 5 (2.8 percent) were taking medication for multiple somatic symptoms.

Sixty-nine of the participants (43 percent) had used psychotropic medication. Forty-three of these individuals were taking psychotropic medication at the time of the study and 26 individuals had taken psychotropic medication in the past. Twenty-nine individuals (21 percent) received psychotropic medication from their primary care physician (PCP), 16 (11 percent) from a psychiatrist, 7 (3 percent) from another specialty physician, and 17 (12 percent) from multiple physicians (e.g., PCP, psychiatrist).

Mean and standard deviation scores of BES scores for participants are reported in Table 3. Quetelet's Body Mass Index (BMI), a method of standardizing body weight across height, was calculated for all subjects' reported weight as kg/m(m).

Crosstabulations for level of compulsive eating (BES level) and level of overweight (BMI level) are summarized in Table 3.

To ensure that the TAS-20 did indeed assess the three components of the alexithymia construct with this population, a confirmatory factor analysis was conducted. Three factors emerged: 1) difficulty distinguishing between feelings and bodily sensations, 2) difficulty communicating feelings to others, and 3) a focus on concrete stimuli and orientation toward action. These factors mirror those factors that have emerged in empirical studies using the TAS-20. A chi square goodness of fit was significant ($\chi^2 (2, 174) = 76.4, p < 0.01$).

Table 3: Body Mass Index (BMI) and Binge Eating Scale (BES) summary scores

<u>Variable</u>	<u>Mean</u>	<u>SD</u>	<u>Minimum</u>	<u>Maximum</u>	<u>N</u>
BMI	32.59	6.42	20.00	51.00	177
BES	16.65	9.26	0	46.00	177

Table 4: Number of participants by levels of compulsive eating and degree of overweight/obesity by BMI (body mass index):

	<u>Normal BMI</u>	<u>Moderate BMI</u>	<u>Severe BMI</u>	<u>Totals</u>
<u>NCE</u> Non-compulsive eaters	17	24	25	66
<u>MCE</u> Moderate compulsive eaters	16	17	28	61
<u>SCE</u> Severe compulsive eaters	10	14	26	50
Totals	43	55	79	N=177

On the TAT, three independent raters scored the cards for individual card and total word count, affect word count, and vague affect count. Each record was scored by two independent raters. Initial inter-rater reliability for scoring the first 10 TAT administrations was $r = 0.90$. Additional review and training on the scoring procedure and discussion among raters on how to score difficult items (e.g., “not good”, “tired”) resulted in inter-rater reliability increasing to $r = 0.97$. Inter-rater reliability checks were conducted on five records after every 20 administrations.

Results of Hypotheses

Hypothesis One

There is a positive correlation between weight (BMI) and alexithymia.

- a) As BMI increases, TAS-20 total score will increase
- b) As BMI increases, TAT total word score will decrease
- c) As BMI increases, TAT total affect word score will decrease
- d) As BMI increases, TAT total vague affect word score will increase

A Pearson-product moment correlation revealed that the relationship between BMI and alexithymia TAS-20 total score was significant ($r = 0.25, p < 0.01$). The relationship between BMI and TAT total word score was not significant ($r = 0.03, p > 0.05$). BMI was significantly correlated with both the TAT total affect word score ($r = -0.33, p < 0.05$) and TAT total vague affect score ($r = 0.28, p < 0.05$). Intercorrelations between variables are presented in Table 5.

Table 5: Interrelations among BMI, BES, TAS-20 total score, TAT total word score, TAT total affect score, and TAT total vague affect score

- - Correlation Coefficients - -						
	BMI	BES	TAS-20	TATword	TATaffect	TATvague
BMI		.6411 p< .01	.2518 p< .05	.0279 p< .05	-.3306 p< .05	.2829 p< .01
BES			.4126 p< .01	.1144 p> .05	-.5334 p< .01	.4373 p< .01
TAS-20				.2322 p> .05	-.3104 p< .01	.4142 p< .01
TATword					.1411 p> .05	.0516 p> .05
TATaffect						-.3415 p< .05

Note: BMI = Body Mass Index; BES = Binge Eating Scale; TAS-20 = Toronto Alexithymia Scale; TAT = Thematic Apperception Test ; TATword = TAT word summary score; TAT affect = TAT affect summary score; TAT vague = TAT vague affect summary score.

Hypothesis Two

The relationship between weight and alexithymia is mediated by compulsive eating.

A partial correlation revealed that, when compulsive eating (BES) was controlled for, the significance of the relationship between BMI and TAS-20 was eliminated ($r = -0.18, p > 0.05$). The significance of the relationships between BMI and TAT total affect score ($r = -0.09, p > 0.05$) and BMI and TAT total vague affect score ($r = 0.11, p > 0.05$) were also eliminated.

Hypothesis Three

Non-compulsive eaters (NCE) have lower alexithymia scores, as measured by the TAS-20, than moderate compulsive eaters (MCE) or severe compulsive eaters (SCE).

Hypotheses related to participants' scores on the TAS-20 were tested using a one-way analysis of variance. The difference between TAS-20 scores for the NCE, MCE and SCE groups was significant ($F(2, 175) = 24.15, p < 0.01$). A planned comparison of TAS-20 scores across groups revealed that the NCE group's mean TAS-20 was significantly lower than that of the MCE or SCE group ($T(47.5) = 6.329, p < 0.05$). This post hoc comparison also revealed that the SCE group's mean TAS-20 score was significantly higher than that of the MCE group ($T(55.2) = 5.139, p < 0.05$).

Hypothesis Four

Non-compulsive eaters (NCE) are more likely to have lower alexithymia scores, as measured by the TAT summary scores (TAT total word, total affect words, total vague affect words), than moderate compulsive eaters (MCE) or severe compulsive eaters (SCE).

Hypotheses related to participants' summary scores on the TAT were tested using a one-way analysis of variance. The difference between TAT total word (TATW) scores for the NCE, MCE and SCE groups was not significant ($F(2, 174) = 3.15, p > 0.05$). The difference between TAT total affect (TATA) scores for the NCE, MCE and SCE groups was significant ($F(2, 174) = 21.09, p < 0.05$). A planned comparison of TATA scores across groups revealed that the SCE group's mean TATA score was significantly lower than that of the NCE or MCE group ($T(40.4) = 1.917, p < 0.05$). There was no significant difference between The NCE and MCE groups on the TATA mean scores.

The difference between TAT total vague affect (TATVA) scores for the NCE, MCE and SCE groups was significant ($F(2, 174) = 23.53, p < 0.01$). A planned comparison of TATVA scores across groups revealed that the SCE group's mean TATVA score was significantly higher than that of the NCE or MCE group ($T(34.2) = 1.347, p < 0.01$). There was no significant difference between The NCE and MCE groups on the TATVA mean scores.

Hypothesis Five

Compulsive eaters have higher levels of somatization than non-compulsive eaters

- a) Non-compulsive eaters (BES cut-off score < 15) will have significantly lower scores on the BSI somatization scale than moderate compulsive eaters (BES 15-24) and severe compulsive eaters.
- b) Severe compulsive eaters (BES > 25) will have higher levels of somatization than moderate compulsive eaters (BES 15 - 24).

Hypotheses related to participants' scores on the BSI somatization subscale were explored using a one-way analysis of variance. Means and standard deviations of each group's BSI somatization scores are presented in Table 6.

Table 6: Means T-scores (standard deviations) for BSI subscale and index scores:

	NCE	MCE	SCE
SOM	48.3 (4.9)	50.1 (5.1)	56.7 (7.2)
O-C	43.5 (6.1)	46.2 (7.8)	43.9 (6.3)
IS	53.1 (8.1)	57.1 (8.9)	57.7 (8.8)
DEP	57.7 (7.7)	59.7 (8.9)	62.1 (7.1)
ANX	49.9 (9.4)	53.8 (9.1)	54.0 (7.5)
HOS	48.6 (5.1)	48.8 (4.7)	54.3 (7.3)
PHOB	48.6 (5.9)	50.3 (6.5)	48.1 (5.3)
PAR	45.1 (5.3)	47.3 (7.5)	46.8 (5.2)
PSY	44.4 (4.7)	46.3 (6.4)	47.1 (5.5)
GSI	48.4 (6.9)	49.8 (7.4)	49.9 (5.0)
PSDI	52.6 (8.7)	54.5 (8.5)	56.6 (7.6)
PST	47.9 (6.3)	45.8 (6.0)	46.1 (5.4)

Note: SOM = Somatization; O-C = Obsessive Compulsive; IS = Interpersonal Sensitivity; DEP = Depression; ANX = Anxiety; HOS = Hostility; PHOB = Phobia; PAR = Paranoia; PSY = Psychoticism; GSI = General Symptom Index; PSDI = Positive Symptom Distress Index; PST = Positive Symptom Total

The mean differences across NCE, MCE, and SCE groups on the BSI somatization scale were significant ($F(2, 175) = 4.35, p > .05$). A Bonferroni planned comparison of BSI somatization scores across groups revealed that the SCE group's mean somatization score was significantly higher than that of the NCE or MCE group ($T(32.2) = 4.111, p < 0.01$). There was no significant difference between NCE and MCE groups on the BSI somatization mean scores.

Hypothesis Six

Non-compulsive eaters (BES cutoff < 15) will have less self-reported somatic complaints for which they have sought medical services than either moderate (BES 15-24) or severe ($BES \geq 25$) compulsive eaters.

A Chi square test of significance indicated significant difference between groups (Chi square $\chi^2(4, N = 177) = 7.85, p < 0.05$). The difference between the expected and observed frequency of somatic complaints was only significant between the MCE and SCE groups.

Hypothesis Seven

There is a significant positive relationship between somatization and alexithymia.

- a) As BSI somatization increases, TAS-20 total score increases
- b) As BSI somatization increases, TAT total word score decreases
- c) As BSI somatization increases, TAT-20 total affect score decreases
- d) As BSI somatization increases, TAT-20 vague affect score increases.

The Pearson product moment correlation between the BSI somatization score and the TAS-20 total was significant ($r = 0.42, p < 0.01$). There were significant negative correlations between the BSI somatization score and TAT total word score ($r = -0.16, p <$

0.05) and TAT total affect score ($r = -0.36$, $p < 0.01$). There was a significant positive correlation between the BSI somatization score and the TAT vague affect score ($r = 0.37$, $p < 0.01$).

Hypothesis Eight

Moderate and severe compulsive eaters are significantly more likely than non-compulsive eaters to have other self-reported addiction problems.

Chi square tests of significance were conducted to assess the relationship between compulsive eating and addictive behavior with nicotine, alcohol, narcotics, and shopping. A chi-square test of significance with the variables of compulsive eating and nicotine use indicated significant difference between groups (Chi square χ^2 (2, $N = 175$) = 6.79, $p = 0.03$). The difference between the expected and observed presence of nicotine use was only significant for the SCE group. A chi-square test of significance with the variables of compulsive eating and excessive shopping indicated significant difference between groups (Chi square χ^2 (2, $N = 175$) = 11.28, $p < 0.01$). The difference between the expected and observed presence of excessive shopping was significant for the SCE group.

Compulsive eating and psychiatric symptoms

Brief Symptom Inventory (BSI) scale and index means and standard deviations for NCE, MCE and SCE groups are presented in Table 2. In addition to being correlated with the BSI somatization score, compulsive eating was also significantly correlated with BSI hostility scores ($r = .15$, $p < .05$). A one-way analysis of variance was conducted to examine this relationship. The mean differences across NCE, MCE, and SCE groups on

the BSI hostility scale were significant ($F(2, 174) = 13.46, p > .01$). A Scheffe post hoc comparison across groups ($\alpha = .05$) revealed that the SCE group's mean hostility score was significantly higher than that of the NCE or MCE group. There was no significant difference between NCE and MCE groups.

Verbal Intelligence and Alexithymia

Intellectual functioning was obtained using WAIS-R Vocabulary subtest scaled scores. IQ scaled scores had a normal distribution, with a mean of 12.49, median of 12, standard deviation of 1.99, and range of 8 - 17.

One measure of alexithymia was related to verbal intelligence. There was a significant positive correlation between IQ and the TAT total word score. Total scores from the TAS-20 ($r = -0.10, p > 0.05$), TAT affect word score ($r = -0.06, p > 0.05$), and TAT vague affect word score ($r = 0.10, p > 0.05$) were not significantly related to the WAIS-R Vocabulary subtest score.

DISCUSSION

Descriptive Information

This investigation provides support for the assertion that it is compulsive eating, rather than obesity, that is associated with the affective and cognitive deficits of alexithymia. Overall, results suggest that more severe levels of compulsive eating are associated with alexithymia and somatization. Results do not consistently support the assertion that milder levels of compulsive eating are associated with significant differences from non-compulsive eaters.

Demographics

Overall, a diverse population was obtained for this project. The participants were diverse in age, education and occupation, although less so for ethnicity/race (70% Caucasian sample). A normal distribution of IQ scores suggested representation of individuals at various levels of intellectual functioning women. The sample appeared to be psychiatrically stable, in that BSI score means generally fell within one standard deviation of the normative mean (50th percentile). Participants were recruited from Weight Watchers in an effort to obtain a non-clinical sample that is representative of relatively healthy women from the general population that have concerns about eating patterns and weight management. None of the participants were recruited from medical or psychiatric clinic settings. All participants were employed and/or homemakers. Those participants that were not recruited from Weight Watchers came were recruited from community, business, and educational university settings.

Compulsive Eating

Obesity and Alexithymia

As indicated by prior research (Brownell, 1995; Fairburn & Brownell, 2002), obese individuals appear to be a heterogeneous group. *Hypotheses one and two* were supported and indicated that it is a subgroup of the obese, compulsive overeaters, and not the obese generally, that are more likely to demonstrate alexithymic deficits. Most research has not shown a significant relationship between BMI and alexithymia scores (Schmidt et al, 1993; Cochrane et al, 1993; Jimmerson et al, 1993; Laquatra & Clopton, 1994).

Past research finding a significant relationship between obesity and alexithymia did not account for the role of compulsive eating within the population (Legorreta et al, 1988; Clerici, et al, 1992; Fukunihi & Kaji, 1997). Morosin & Riva (1997) found alexithymic only in a subgroup of the obese that exhibited psychopathologic traits. de Zwaan et al (1995), investigating differences between obese binge and non-binge eaters, found no difference in alexithymia levels. They qualified these results with the finding that their sample of obese women were selected from a group seeking psychotherapy treatment and may have been more psychologically-minded than obese women in general.

It should be noted that, even within the population of compulsive overeaters, those with severe compulsive eating demonstrate more severe alexithymic difficulties. In this investigation, severe compulsive eaters were more likely than moderate compulsive or non-compulsive eaters to show alexithymic deficits (*Hypotheses three and four*). The severe compulsive eaters were significantly more alexithymic than moderate compulsive eaters and non-compulsive eaters on both the self-report measure (TAS-20) and verbal

production samples (TAT) assessing alexithymia. These results support the notion that individuals with severe compulsive overeating patterns have difficulty processing and regulating emotions

As discussed by the authors of the BES (Gormally et al, 1983) and others conducting research with eating disordered populations (Cochrane, 1995; de Groot, 1995), the deficits that moderate and severe compulsive eaters display seem to be significantly different. Gormally et al (1982) found that the major difference between moderate compulsive and severe compulsive eaters was their sense of self-control over binge urges. Severe compulsive eaters report that they experience a complete lack of control that leads to an unrelenting struggle to avoid a binge and react to their loss of control with marked guilt and self-loathing. Moderate compulsive eaters report more episodic loss of control, often feel able to restrain themselves from giving in to eating urges, and are more forgiving of their lapses. Non-compulsive obese eaters, report minimal emotional response to overeating and indicate that they overeat because they enjoy eating rather than eating because they have lost control.

The results of this study suggest that the assessment of the presence and severity of compulsive eating is integral to planning treatment. Furthermore, research findings suggest that therapeutic treatment efforts should address impulse control and self-esteem issues in the management of eating and weight.

Somatization

Somaticizing deficits were observed in the performances of severe compulsive overeaters in this study (*hypothesis seven*). Severe compulsive overeaters produced significantly higher somatization scores (SOM) on the BSI. They were also significantly

more likely than moderate compulsive and non-compulsive eaters to report multiple somatic problems for which they sought medical treatment (*hypotheses five and six*).

The clinical explanations of alexithymia (Mc Dougall, 1989, Krystal 1988, 1992, Taylor et al, 1992, 1995, 1997) suggest that limited subjective awareness and cognitive processing of emotions may lead to a focus on, amplification and misinterpretation of the somatic sensations that accompany emotional arousal. Barsky and Klerman (1983) suggested that it is a normal experience for individuals to notice but understand that the perceptions of somatic sensations are usual accompaniments to states of emotional arousal. If this acknowledgement does not occur, the individual experiences an ongoing tension state. The alexithymic individual may become preoccupied with the sensations as a result of failing, and/or being unable, to recognize and use the internal (e.g., sadness, anger) provoking stimulus to understand what he is experiencing. If the sensations are not identified, explored, verbalized, understood, and regulated via affective and cognitive processing, autonomic system responses may be exacerbated and become conducive to the development of somatic discomfort and disease (Kellner, 1990).

The deficits in alexithymia and somatization go hand in hand. The difficulty with the cognitive processing of affect renders affect to a somatic-motoric-sensory level. Somatization has generally and erroneously been labeled as physical symptoms and disease that have underlying psychiatric sources which are misdiagnosed or misrepresented. Affect and its derivatives are primarily biological processes that involve all systems and functions of the body. Using the affect dysregulation model, affective experience remains diffuse, somatized, unverbilized and does not move to the operational level of cognitive awareness, labeling and processing. The affective experience is

experienced primarily at a sensorimotor level. The chronic overwhelming tension that results prompts the individual into action (eating, drinking, smoking etc.), a concrete sensorimotor response to manage the physiological tension that is rising from within.

Addictive Behavior

The results of the study (*hypothesis eight*) supported the idea that severe compulsive eating is associated with self-reported addictive behavioral patterns. Severe compulsive eaters reported significantly higher levels of nicotine use (cigarette smoking) and excessive shopping than moderate compulsive or non-compulsive eaters.

Difficulty modulating emotional arousal through affective and cognitive processing might explain the tendency of individuals with alexithymic deficits to discharge tension arising from unpleasant emotional states through impulsive and compulsive behavior, such as binge eating, excessive shopping, and cigarette smoking. This finding is consistent with past research (Peveler & Fairburn, 1990) revealing that one-third of women seeking alcohol abuse treatment reported binge eating symptoms. Research has found high prevalence of addictive problems in eating disorders groups, although subjects involved were bulimic (prevalence 3% to 55%) or anorexic (prevalence 6% to 13%). Although the research did not specifically include compulsive eaters, the high prevalence in a bulimic group who engage in binge eating is notable.

Alexithymia and Psychiatric Distress

In addition to scoring significantly higher on the BSI index of somatization, severe compulsive eaters scored significantly higher than moderate compulsive or non-compulsive eaters on the BSI index of hostility. This finding is consistent Auerback-Barber's (1998) research finding obese binge eaters having significantly more reported

interpersonal problems and higher scores on measures of passivity, social avoidance, vindictiveness, exploitability and intrusiveness. Specker et al (1994) found that obese binge eaters were three times as likely to meet criteria for a personality disorder.

Notably, there were no significant differences among the groups on BSI indexes of depression, anxiety, or general distress. However, the non-compulsive eaters had lower mean scores on these indexes than moderate compulsive eaters, and moderate compulsive eaters had lower mean scores than severe compulsive eaters. This finding may be related to the fact that the study used a generally non-clinical, community-based sample of women enrolled in a Weight Watchers program. Clinically and empirically, alexithymia and somatization have been linked with personality deficits rather than neurotic conflict/defenses. Bruch (1982, 1983) understands eating pathology as emerging out of an ineffective, deficient sense of self, accompanied by deficits in conceptual development and interoceptive confusion regarding bodily sensation of all kinds.

Interestingly, alexithymia and somatization were not significantly associated with mood symptoms such as depression and anxiety. In fact, the mean scores all remained within normal limits in terms of clinical symptomatology. The finding that severe compulsive eaters are more likely than moderate compulsive and non-compulsive eaters to experience multiple somatic symptoms also supports a trait over state conceptualization of these deficits. The deficits did not appear to be related to mood related changes.

Alexithymia and Affect Regulation

Grotstein (1986, 1987) suggested that compulsive eating, and other kinds of disordered eating patterns, are attempts to reestablish a concrete but temporary self-

regulation of chronic unpleasant emotional states and unpleasant aspects of the self. Goodsitt (1983) indicated that severe deficits in affective and self-regulation leave a person vulnerable to profound states of overstimulation and tension. In this way, compulsive eaters engage in frantic self-stimulatory activities to drown out anguished feelings and diffuse physiological sensations that cannot be discriminated, identified, processed and regulated in an organized manner. Casper (1983) suggested “food and physiological processes become perversely employed to regulate emotions”.

Lane and Schwartz (1987) stated that the “experience of emotion is hypothesized to undergo structural transformation in a hierarchical developmental sequence of progressive differentiation and integration” (p.125). Their five cognitive-developmental levels of emotional organization help explain individual differences in the experience, expression, and regulation of affects. An individual moves progressively from affect being experienced at a purely somatic-motoric level, to being gradually integrated with developing cognitive processing to help differentiate and understand emotions and express a variety of feeling states. If there is some interruption in this process, via neurological or interpersonal insult, an individual may not be able to develop affective functioning in a full way. When affect becomes “stuck” at more somatic levels, the individual experiences chronic states of tension that may be temporarily subdued through repetitive motoric acts (e.g., substance abuse).

CONCLUSIONS

Clinicians and researchers agree that alexithymia and somatization may have their genesis in several sources. Neurobiological impairments (right hemisphere or intrahemispheric transfer deficits) may be associated with constitutional deficits (Banich, 1995). They may also result from early developmental parent-child attachment disruptions (inadequate, unreliable attunement) that influence neurological and psychological development (McDougall, 1982; Schore, 1994). Additionally, overwhelming psychological/physical trauma (Nazi concentration camps) is associated with profound alexithymia and somatization deficits, particularly when anhedonia is part of the picture (Krystal, 1988).

The results of this study add further support to the significant relationship among alexithymia, somatization, addictive behavior and severe compulsive eating. Nevertheless, treatment issues remain a big concern. Due to the cognitive and affective deficits and the somatization of affect, using the medium of psychotherapy seems daunting. Krystal (1988) recommends using psychotherapy to assist the individual in acknowledging that he or she processes emotion differently and has not learned to tolerate and use affect as signals to know what is going on internally. He describes the therapy process as focused on this relearning aspect - sitting with somatic sensations and affects and slowly learning to make use of their signaling function. Bruch (1982) suggests that an orientation toward exploration and interpretation around conflicts is inappropriate for most eating disordered individuals. She suggests that treatment focus at the level of disruption, a disconnect between physiological and subjective feeling components of

emotion. She adds that the approach should be aimed at increasing eating disordered individuals awareness that there are feelings and impulses that originate in themselves and that they can learn to recognize. While pharmacotherapy may assist in helping to regulate tension, it also interferes with assisting the individual in the process of tolerating and using the changes to identify what is being experienced.

Strengths and Limitations

Strengths

A strength of this study is in the empirical examination of the relationship among alexithymia, somatization, and obese compulsive and non-compulsive eaters. Past research in this area has focused primarily on eating disordered groups such as anorexics and bulimics. Furthermore, the sample is a non-clinical one, compared to past research using samples about to begin or involved in formal treatment. This study enables us to obtain information about women in the general community and how their eating and weight issues are related to affective and cognitive processing abilities.

Another strength of the study lay in the use of multiple measures of alexithymia to assess both the affective and cognitive aspects of the alexithymia construct. It also involved both self-report and projective measures to assess whether individuals' reported and actual ability to discriminate, identify and verbalize affect would differ. Additionally, the use of the TAT permitted the assessment of ambiguous or vague affect words (e.g., not good, bad) versus unambiguous affect words (e.g., sad, angry). The study was able to reveal that those individuals who are alexithymic tend to use vague affect references that are either ambiguous or describe somatic sensations and physiological states.

Past research has suggested a relationship between alexithymia and intelligence. Use of a screening instrument, such as the WAIS-R vocabulary subtest, allowed for the clarification of the relationship between intelligence and alexithymia. The results revealed that only total word score produced on the TAT was correlated with IQ subtest scores, while the other measures of alexithymia did not correlate with IQ scores.

The use of the BSI provided examination of the relationship between psychiatric distress and/or symptomatology and alexithymia. Previous research findings were equivocal regarding the relationship of depression and anxiety to alexithymia. This study did not find a significant relationship between these mood difficulties and alexithymia. However, the BSI did reveal a relationship between severe compulsive eating and hostility, which is consistent with the some clinical and empirical research findings.

Limitations

A potential limitation of the study was that the sample did not include a large percentage of severely obese women. Most of the women in the sample were not involved in formal medically supervised treatment for weight management, as might be the case for those with severe to morbid obesity that poses significant medical problems. Nevertheless, the findings may have been stronger with a broader range of overweight/obese. Additionally, the study only involved as sample of women, which precludes the generalization of the findings to men.

Another potential limitation of the study was posed by the method involved with administering the TAT. The test administrator was not present during the writing of the TAT stories, nor did she review them at the time of administration. The literature on alexithymia suggests that, although alexithymic individuals may be able to state “feelings

“ words such as “sad” or “depressed”, they are rarely able to engage in reflective self-awareness, verbally elaborate on emotional states, or provide associations that link emotion with meaningful, internal experiences (Krystal, 1988; McDougall, 1983). If the administrator prompted the participant to elaborate on affect words produced, a richer assessment of cognitive processing of emotional experience would have been available.

Future Directions

Assessment Measures

New assessment measures have been developed to assess emotional intelligence, psychological-mindedness, empathy, and other constructs that are intertwined with the construct of alexithymia. Future research will benefit from extending experimental approaches to construct validation. Research is developing in the areas of physiological assessment measures that provide feedback about physiological arousal and affective states. This research will allow for better understanding of the specific somatic experiences that accompany affective and cognitive processing of emotion. Furthermore, neurobiological research on alexithymia is burgeoning and, as it progresses, we will learn more about the particular mechanisms and systems involved in processing and translating emotional stimuli.

Psychotherapeutic Interventions

In terms of therapeutic intervention, empirical studies need to be conducted to investigate and validate the effectiveness of modified psychotherapies for alexithymic individuals. Further research investigating the relationship among somatization, affect dysregulation, and the development of chronic disease processes is warranted.

APPENDIX A

APPENDIX A

BES - Eating Habits Checklist

Sub. # _____

Instructions: Below are groups of statements about eating. Read all of the statements in each numbered group. Circle the letter next to the statement in each group which best describes the way you feel about your eating.

#1

- a. I don't feel self-conscious about my weight or body size when I'm with others.
- b. I feel concerned about how I look to others, but it normally does not make me feel disappointed with myself.
- c. I do get self-conscious about my appearance and weight which makes me feel disappointed with myself.
- d. I feel very self-conscious about my weight and frequently, I feel intense shame and disgust for myself. I try to avoid social contacts because of my self-consciousness.

#2

- a. I don't have any difficulty eating slowly in the proper manner.
- b. Although I seem to "gobble down" foods, I don't end up feeling stuffed because of eating too much.
- c. At times, I tend to eat quickly and then, I feel uncomfortably full afterward.
- d. I have the habit of bolting down my food, without really chewing it. When this happens I usually feel uncomfortably stuffed because I've eaten too much.

#3

- a. I feel capable to control my eating urges when I want to.
- b. I feel like I have failed to control my eating more than the average person.
- c. I feel utterly helpless when it comes to feeling in control of my eating urges.
- d. Because I feel so helpless about controlling my eating, I have become very desperate about trying to get in control.

BES - Eating Habits Checklist

#4

- a. I don't have the habit of eating when I am bored.
- b. I sometimes eat when I'm bored, but I'm often able to "get busy" to get my mind off of food.
- c. I have a regular habit of eating foods when I'm bored, but occasionally, I can use some other activity to get my mind off of eating.
- d. I have strong habit of eating when I'm bored. Nothing seems to help me break this habit.

#5

- a. I'm usually physically hungry when I eat something.
- b. Occasionally, I eat something on impulse even though I'm not really hungry.
- c. I have the regular habit of eating foods, that I really may not enjoy, to satisfy a hungry feeling even though physically, I don't need the food.
- d. Even though I'm not physically hungry, I get a hungry feeling in my mouth that only seems to be satisfied when I eat food, like a sandwich, that fills my mouth. Sometimes, when I eat food to satisfy my mouth hunger, I spit the food out so I won't gain weight.

#6

- a. I don't feel any guilt or self-hate after I overeat.
- b. After I overeat, occasionally I feel guilt or self-hate.
- c. Almost all the time I experience strong guilt or self-hate after I overeat.

BES - Eating Habits Checklist

#7

- a. I don't lose total control of my eating when dieting even after periods when I overeat.
- b. Sometimes when I eat a "forbidden food" while on a diet, I feel like I "blew it" and eat even more.
- c. Frequently, I have the habit of saying to myself, "I've blown it now, why not go all the way" when I overeat on a diet. When that happens I eat even more.
- d. I have the regular habit of starting strict diets for myself, but I break the diets by going on an eating binge. My life seems to be feast or famine.

#8

- a. I rarely eat so much that I feel uncomfortably stuffed afterward.
- b. Usually about once a month, I eat such a quantity of food that I end up feeling very stuffed.
- c. I have regular periods during the month when I eat large amounts of food, either at mealtime or at snacks.
- d. I eat so much that I regularly feel quite uncomfortable after eating and sometimes a bit nauseous.

#9

- a. My level of calorie intake does not go up very high or go down very low on a regular basis.
- b. Sometimes after I overeat, I will try to reduce my caloric intake to almost nothing to make up for the excess calories I've eaten.
- c. I have a regular habit of overeating during the night. It seems my routine is not to be hungry in the morning but overeat in the evening.
- d. In my adult years, I have had week-long periods in which I practically starved myself. This follows periods when I overeat. Seems I live a life of feast or famine

BES - Eating Habits Checklist

#10

- a. I am usually able to stop eating when I want to. I know when “enough is enough”.
- b. Every so often, I experience a compulsion to eat which I can’t seem to control.
- c. Frequently, I experience strong urges to eat which I seem unable to control, but at other times I can control my eating urges.
- d. I feel incapable of controlling urges to eat. I have a fear of not being able to stop eating voluntarily.

#11

- a. I don’t usually have any problem stopping eating when I feel full.
- b. I usually can stop eating when I feel full but occasionally I overeat, leaving me feeling uncomfortably stuffed.
- c. I have a problem stopping eating once I start and usually I feel uncomfortably stuffed after I eat a meal.
- d. Because I have a problem not being able to stop eating when I want, I sometimes have to make myself vomit to relieve my stuffed feeling.

#12

- a. I seem to eat just as much when I’m with others (family, social gatherings) as when I’m by myself.
- b. Sometimes, when I’m with other people, I don’t eat as much as I want to eat because I’m self-conscious about my eating.
- c. Frequently, I eat only a small amount of food when others are present, because I’m very embarrassed about my eating.
- d. I feel so ashamed about overeating that I pick times to overeat when I know no one will see me. I feel like a “closet eater.”

BES - Eating Habits Checklist

#13

- a. I eat three meals a day with an occasional between meal snack.
- b. I eat three meals a day, but I also normally snack between meals.
- c. When I am snacking heavily, I get in the habit of skipping regular meals.
- d. There are regular periods when I seem to be continually eating, with no planned meals.

#14

- a. I don't think much about trying to control unwanted eating urges.
- b. At some times, I feel my thoughts are preoccupied with trying to control my eating urges.
- c. Frequently I spend much time thinking how much I ate or about trying not to eat more
- d. It seems to me that most of my waking hours are preoccupied by thoughts about eating *or* not eating. I feel like I'm constantly struggling not to eat.

#15

- a. I don't think about food a great deal.
- b. I have strong cravings for food but they only last for brief periods of time.
- c. I have days when I can't seem to think about anything else but food.
- d. Most of my days seem to be preoccupied with thoughts about food. I feel like I live to eat.

BES - Eating Habits Checklist

#16

- a. I usually know whether or not I'm physically hungry. I take the right amount of food to satisfy me.
- b. Occasionally, I feel uncertain about knowing whether or not I'm physically hungry. At these times, it's hard to know how much food I should take to satisfy me.
- c. Even though I might know how many calories I should eat, I don't have any idea what is a "normal" amount of food for me.

APPENDIX B

APPENDIX B

TAS-20

Please indicate the extent to which you agree or disagree with each statement. Use the following scale to indicate your answers: **strongly disagree = 1; moderately disagree = 2; neither agree or disagree = 3; moderately agree = 4; strongly agree = 5.**

- | | |
|---|-----------|
| 1. I am often confused about what emotion I am feeling. | 1 2 3 4 5 |
| 2. It is difficult for me to find the right words for my feelings. | 1 2 3 4 5 |
| 3. I have physical sensations that even doctors don't understand. | 1 2 3 4 5 |
| 4. I am able to describe my feelings easily. | 1 2 3 4 5 |
| 5. I prefer to analyze problems rather than just describe them. | 1 2 3 4 5 |
| 6. When I am upset, I don't know if I am sad, frightened, or angry. | 1 2 3 4 5 |
| 7. I am often puzzled by sensations in my body. | 1 2 3 4 5 |
| 8. I prefer to just let things happen rather than to understand why they turned out that way. | 1 2 3 4 5 |
| 9. I have feelings that I can't quite identify. | 1 2 3 4 5 |
| 10. Being in touch with emotions is essential. | 1 2 3 4 5 |

TAS-20

Please indicate the extent to which you agree or disagree with each statement. Use the following scale to indicate your answers: **strongly disagree = 1; moderately disagree = 2; neither agree or disagree = 3; moderately agree = 4; strongly agree = 5.**

- | | |
|---|-----------|
| 11. I find it hard to describe how I feel to people. | 1 2 3 4 5 |
| 12. People tell me to describe my feelings more. | 1 2 3 4 5 |
| 13. I don't know what's going on inside of me. | 1 2 3 4 5 |
| 14. I often don't know why I am angry. | 1 2 3 4 5 |
| 15. I prefer to talk to people about their daily activities rather than their feelings. | 1 2 3 4 5 |
| 16. I prefer to watch "light" entertainment shows rather than psychological dramas. | 1 2 3 4 5 |
| 17. It is difficult for me to reveal my innermost feelings, even to close friends. | 1 2 3 4 5 |
| 18. I can feel someone, even in moments of silence. | 1 2 3 4 5 |
| 19. I find examination of my feelings useful in solving personal problems. | 1 2 3 4 5 |
| 20. Looking for hidden meanings in movies or plays distracts from their enjoyment. | 1 2 3 4 5 |

APPENDIX C

APPENDIX C

TAT

Sub. # _____

Instructions:

On the next task, you will be using your imagination . You will be given six cards, one at a time. The first five cards will provide a picture and the last card will be blank. Your task will be to make up as dramatic a story as you can for each separate picture. For the blank card, you will have to imagine a picture so that you can make up a story about that picture.

You may make up each story any way you please. However, you should make sure to describe what has led up to the event shown in the picture, what is happening at the moment, what the characters in the picture are thinking and feeling, and an outcome or ending for each story.

You will be given only one (1) card at a time and you may use up to five (5) minutes to write a story about that picture. After five minutes, you will be given the next card. This procedure will be followed for each of the six cards. Once you are finished with a card, you will not be able to review it later.

Please do not write your name on the paper. It is important that only a subject number be assigned to all data so that all participants may remain anonymous.

APPENDIX D

APPENDIX D

SCI

Sub. # _____

Please do not include your name or other identifying information.

Please answer the following questions to the best of your ability.

1. Age _____

2. Ethnic/Racial Background (check answer that best applies to you). If the categories do not adequately apply to you, please check "other" and describe your ethnicity/race.

____ African-American/Black	____ Asian-American	____ East Indian
____ Anglo-Saxon/Caucasian	____ American Indian	____ West Indian
____ Pacific Islander	____ Latino/Hispanic	____ other

3. Highest grade of school completed (please check the answer that best applies to you):

____ No school	____ Two-Year/Associate Degree (e.g. AA)
____ Kindergarten - 5th grade	____ Undergraduate degree (e.g. BA, BS)
____ 6th - 8th grade	____ Some graduate school (pre-master's)
____ 9th - 12th grade (no diploma)	____ Master's degree (e.g. MA, MBA)
____ High school diploma or G.E.D.	____ Some doctoral training (post-master's)
____ Some college	____ Doctoral degree (e.g. PhD, MD, DO)

4. Current Occupation (specify position): _____

5. Marital Status:

____ single, never married	____ divorced
____ married	____ widow
____ separated	____ live with significant other

6. List any current prescription medication (if possible, include dosage/duration of use):

7. List any current over-the-counter medication (include dosage/duration of use)

8. List all current medical/physical problems for which you obtained medical advise/treatment. (Indicate how long you've experienced the problem(s)).

9. Please check whether you have been diagnosed with any of the following conditions:

	<u>Past</u>	<u>Present</u>
chronic headaches / migraines	_____	_____
irritable bowel syndrome	_____	_____
ulcers/ ulcerative colitis	_____	_____
gastritis	_____	_____
asthma	_____	_____
rheumatoid arthritis	_____	_____
hypertension (high blood pressure)	_____	_____
dermatitis/ psoriasis / eczema	_____	_____
chronic fatigue syndrome	_____	_____
back pain	_____	_____

10. Is there any history of problems with your mood (e.g. anxiety, depression, etc...) and/or other psychological problems (e.g. phobic, obsessive-compulsive disorders). Please list below and describe as needed:

11. Have you ever been prescribed medications for treatment of problems listed in question # 10? If yes, list problem, medication, duration of use, and treatment provider source (e.g., family physician, psychiatrist, etc..).

SCI

Sub. # _____

13. Have you ever been involved in psychotherapy/counseling for problems listed in questions # 8, #9, or #10?

If yes, list problem, treatment provider source (e.g., psychologist, psychiatrist, counselor etc..) and *approximate* length of treatment (e.g., duration *and/or* number of sessions).

14. Do you believe that you abuse and/or have problems with any of the following: (check all that apply):

- | | |
|--|--|
| ☐ alcohol | ☐ prescription medication |
| ☐ over the counter medication | ☐ other substances/drugs |
| ☐ gambling (lottery, slots, etc.) | ☐ shopping |
| ☐ nicotine/cigarettes | ☐ food/eating |

15. If yes to any item in #14, indicate whether you received treatment for these problems and indicate type of provider (e.g., psychologist, psychiatrist, counselor, etc..)

16. Have you ever attended any self-help/ 12-step groups for yourself (e.g., Overeaters Anonymous, Gamblers Anonymous, etc.)? Indicate duration and/or # of groups attended.

17. Indicate your height ____ ft. ____ in. Indicate current weight _____ lbs.

18. Check the answer that YOU believe describes your weight compared to your height:

- | | | |
|--|--|--|
| ☐ underweight | ☐ average weight | ☐ mildly overweight |
| ☐ moderately overweight | ☐ severely overweight | |

SCI

Sub. # _____

19. When using the term "diet", what is YOUR intention/ end-point /goal of dieting:
Check all that apply, but circle your primary goal:

- | | |
|---|---|
| ☐ to lose pounds | ☐ better fit in clothes |
| ☐ to reduce fat | ☐ fit into smaller size clothing |
| ☐ to tone /shape my body | ☐ build muscle |
| ☐ cardiovascular fitness | ☐ general fitness |
| specify other: _____ | |

20. If you are dieting currently, what methods are being used? Check all that apply:

- | | |
|---|---|
| ☐ reduce intake of amount of food | ☐ increase cardiovascular exercise |
| ☐ reduce intake of total calories | ☐ weight training /resistance training |
| ☐ reduce intake of fat calories | ☐ water pills/diuretics |
| ☐ diet pills | ☐ laxatives |
| ☐ vomiting | ☐ diet supplements (e.g., Herbalife) |
| ☐ I am not dieting at the present time | specify other: _____ |

21. In the past, what dieting methods have you used? Check all that apply:

- | | |
|--|---|
| ☐ reduce intake of amount of food | ☐ increase cardiovascular exercise |
| ☐ reduce intake of total calories | ☐ weight training /resistance training |
| ☐ reduce intake of fat calories | ☐ water pills/diuretics |
| ☐ diet pills | ☐ laxatives |
| ☐ vomiting | ☐ diet supplements (e.g., Herbalife) |
| ☐ I have never dieted in the past | specify other: _____ |

22. Have you ever been prescribed medication for any eating problems? Indicate type of professional (e.g., psychiatrist, primary care physician) and medications prescribed:

23. Have you ever had surgery to reduce body size/weight (e.g. stomach stapled, liposuction)? Please describe as needed:

24. Have you ever had an inpatient hospitalization stay related to eating problems?
If yes, please describe and indicate year / duration of hospital stay.

25. Have you ever sought psychotherapy / counseling for eating problems? Please indicate type of professional (e.g. psychologist, psychiatrist, counselor) and describe treatment process (e.g., talking therapy, homework assignments, weight/exercise charts)

26. Have you ever been enrolled in a formal weight-loss program (e.g., Weight Watchers, Jenny Craig etc.). List type and past or current use of program.

27. Were you ever overweight as a(n)

_____ I have never been overweight
_____ child (11 yrs. old or younger)
_____ adolescent (12 -17 yrs. old)
_____ adult (18 yrs. old or older)

28. Were you ever underweight as a(n)

_____ I have never been underweight
_____ child (11 yrs. old or younger)
_____ adolescent (12 -17 yrs. old)
_____ adult (18 yrs. old or older)

APPENDIX E

APPENDIX E

CONSENT TO PARTICIPATE IN RESEARCH

This research project will require approximately 60 to 90-minutes of your time for which you will be paid \$5.00 immediately following your participation. The study involves questionnaire and assessment measures to clarify characteristics of individuals seeking support/assistance with eating and weight concerns. Your participation in this study will help the investigators better understand the needs of individuals seeking weight loss services so that future services may be improved. Some of the measures used in the study require that participants report past and present health information.

Participants must be over 18 years of age to participate. Individuals who participate in this study do so on a free and voluntary basis. This means that individuals may refuse to participate at all, refuse to complete certain measures, or may discontinue participation in the study at any time without penalty. The study does not involve experimental procedures or treatment of any kind. There are no significant risks associated with participation in this study. Your signature below will indicate that 1) you are voluntarily participating in this study, 2) any risks and benefits have been explained to you, 3) you understand those risks and benefits, and 4) you will receive a copy of this statement.

Total anonymity and confidentiality will be maintained. Subject numbers will be assigned to all data/responses and no names will be recorded or associated with specific responses or findings. Your signed consent form will be kept separate from your responses.

If you have questions about this study, contact:

Regina O'Connell, M.A. (856-251-1459)
Bert Karon, Ph.D. (517-355-2154)
Department of Psychology
129 Psychology Research Building
Michigan State University
East Lansing, MI 48824-1117

Witness

Signature

Date

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