

THE PREVALENCE OF EATING DISORDERS WITHIN THE AIR FORCE
ACTIVE DUTY FEMALE NURSE CORPS

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THE PREVALENCE OF EATING DISORDERS WITHIN THE FEMALE
ACTIVE DUTY AIR FORCE NURSE OFFICERS' CORPS

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Abstract

This research study investigated the prevalence of eating disorders with a specific population of active duty female Air Force Nurse Corps officers. The eating disorders investigated included Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder and Eating Disorders Not Otherwise Specified.

The sampling technique was a convenience sample at a large tertiary Air Force medical treatment facility. The total number of research volunteers sampled was 300 with a response rate of 175 (58%). An instrument previously used in a study of eating disorders among Navy personnel was modified to fit the Air Force culture. This questionnaire measured five components: physiological, professional, psycho-social, historical and military culture. This was a descriptive study utilizing percentages, frequencies, and standard deviations.

The findings, when compared to similar lay populations, were not statistically significant. Less than 1% of respondents reported behaviors consistent with Anorexia Nervosa. One percent noted bulimic or binge eating behaviors. Approximately 4-15% of the study group reported eating behavior disorders not otherwise specified.

In summary, for this sample of active duty female Air Force nurses, there was no statistical difference when compared to the lay population with respect to the prevalence of eating disorders. However, within the military culture and with its emphasis upon readiness, these numbers may hold clinical significance. For

example, within a small readiness team composed of multi-tasked health care providers, one member who may have an eating disorder can compromise the mission effectiveness.

The Prevalence of Eating Disorders Within the Air Force Active Duty Female
Nurse Corps

By

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Thesis

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Chapter One

Introduction

The purpose of this study was to survey the eating habits and attitudes of current Air Force female nurse corps officers to see if they engage in any abnormal eating behaviors. Eating disorders are a significant health and psychiatric problem among adolescent girls and adult women, yet eating behavior is not routinely assessed in primary health care settings (Wilfley & Grilo, 1994).

A study of the following eating behaviors studied incorporated the operationalized definitions of the American Psychological Association (APA, 1994):

- Anorexia Nervosa (AN): intense fear of becoming obese, disturbed body image, weight loss of at least 25% of original body weight, refusal to maintain minimal normal weight for age and height.
- Bulimia Nervosa (BN): recurrent episodes of binge eating (rapid consumption within 2 hours), repeated attempts to lose weight by severely restrictive diets, self-induced vomiting, or use of cathartics and/or diuretics.
- Binge Eating Disorder (BED): recurrent episodes of binge eating which are characterized by 2 features- loss of control during the binge episode and eating large amounts of food rapidly within 2 hours.
- Eating Disorders Not Otherwise Specified (NOS): disorders of eating that do not meet the criteria for a specific eating disorder.

With the exception of McNulty's (1994) study of eating behaviors within the Navy Nurse Corps, little research has been done to study the prevalence of eating disorders among other branches of the Department of the Defense. This baseline information will enable further research to evaluate eating disorders within the Air Force Nurse Corps.

This topic is important because family nurse practitioners have never been utilized in the Air Force and part of their scope of practice is to evaluate dietary habits of the active duty population and their families (Holdcroft, 1988). Family Nurse Practitioners have traditionally embraced health promotion and preventive care in their ambulatory practice settings. With the exception of Wilford Hall Medical Center at Lackland Air Force Base in San Antonio, Texas; the Air Force Medical Service has Family Practice Clinics at every Air Force Base (briefing by Col W. Campbell, Family Practice Consultant to the Air Force Surgeon General, April, 1996). If Air Force Family Nurse Practitioners are to serve in Air Force Family Practice Clinics, then assessing, evaluating, and promoting healthy dietary habits are a natural part of the multidisciplinary role. Recognition of abnormal dietary habits and referral to a multidisciplinary health care team is key to the treatment of abnormal eating behaviors and to the health and well being of the active duty corps. A logical question arises, is there a significant problem with eating disorders among active duty Air Force female nurse corps officers and does it impact readiness? Recognition of and skillful interviewing techniques regarding eating behaviors and dietary patterns are

incorporated in any academic nurse practitioner program and are looked upon as integral skills which a Family Nurse Practitioner must have (Kjervik, 1986).

Background

The pressure to lose and maintain weight exists in the United States Air Force. The Air Force and other branches of the military place a limit on weight and restrict promotion opportunities and military transfers if an individual's weight is not within the boundaries set by service established standards (AFI 36-3207, 1993).

During the Vietnam Era, nurses could enter active duty on a weight waiver if they exceeded the weight per height limitation set for entering the service. At that time, 20% additional weight allowance was granted to all new overweight nurses due to the needs of the Department of Defense (DOD) (McNulty, 1994). Today's Air Force is quite different. Nurses who entered under the weight waiver 20 years ago are now in zone for promotion to Colonel and are faced with newer, more stringent regulations for advancement and retention - restrictions that did not exist when their Air Force careers began (McNulty, 1994).

In the early 1990s, the Air Force changed its criteria for those individuals who did not meet the standard height weight requirements. If an individual failed to meet height and weight requirements, percent body fat was measured. Today a female member who is above 30% body fat is considered ineligible for orders or promotion and faces possible discharge if no reduction is seen within a specified period of time, usually six months (AF I 36-3207, 1993; AFI 40-502,

1994). Many women have no alternative but to lose unwanted pounds quickly at various times during their military careers if promotion and retention in the service is their desired goal. Because weight, fitness and Air Force career progression are closely linked, it seems likely that eating disorders might develop (AFI 40-501, 1994; AFI 34-107, 1994).

This study sought to determine demographic characteristics, weight loss techniques and prevalence of eating disorders in a select population of Air Force nurses. The eating disorders investigated included Anorexia Nervosa (AN), Bulimia Nervosa (BN), Binge Eating Disorder (BED) and Eating Disorders not Otherwise (NOS). AN and BN are frequently related disorders, typically beginning in adolescence or early adult life. All eating disorders are more prevalent in women, with a commonly cited female to male ratio of 10 to one (Yates & Seileni, 1987).

The Military Environment

In 1972, the U.S. Department of Defense initiated plans to increase the number and expand the role of women in the military. During the ensuing decade, the percentage of women in the military rose from 1.5% to over 9%, with a projection of 11% anticipated by 1987 (Johnson, 1989). Female Air Force active duty personnel currently total 12,322 (17.9%) compared to the total male population of 68,681 (Airman Magazine, 1995). The Air Force Nurse Corps currently employs 4,589 active duty nurses, of which 3,534 (77%) are females

(personal communication, Major Sharon Wright, USAF Nurse Utilization Officer, Randolph AFB, TX, March 7, 1996).

By 1974, occupational specialties were opened to women, with the exception of combat related jobs. In March 1994, women were assigned to Navy combat ships for the first time and were flying fighter aircraft within the Air Force (McNulty, 1994). Another change that affected the utilization of women was the modification of the pregnancy policy which, beginning in 1975, enabled military women to remain on active duty during and after a pregnancy (Holberg, 1984). Post pregnancy weight loss opens yet another issue of concern for military women (McNulty, 1994).

The nursing profession draws a certain type of individual with unique personality characteristics and motivational drives (Kjervik, 1986). Nurses are driven to nurture everyone but rarely take the time to nurture themselves or their peers (McNulty, 1994). Their personalities as perfectionists fit the personalities of many anorexics and bulimics (Woodman, 1982). Thus, one would think that military nurses may have a greater incidence of eating disorders. Research by Garfinkel and Garner (1980) revealed that individuals who must focus increased emphasis on a thin body shape are at risk of developing anorexia nervosa and related dieting problems. Intense performance expectation is also relevant to the expression of these eating disorders (Garfinkel & Garner, 1980). The Air Force, with its unique structure and demands for fitness and achievement, may attract

women who are predisposed to eating disorders (Garner & Garfinkel, 1980; Minuchin, 1970).

The mental health of all Air Force nurses is critical to the mission they perform. It is well documented that once the onset of an eating disorder occurs, the individual may exhibit obsessive-compulsive traits, may have paranoia from lack of nutrition, and may demonstrate impaired skills affecting judgment, recall, prioritization, and physical strength (Garfinkel & Garner, 1985). Nurses need to be mentally alert at all times. Nurses are frequently assigned to intensive care units, emergency rooms, operating suites and pediatrics where even the slightest error could cause a patient irreversible damage or death. Whether at peace in Air Force hospitals, at war in field hospitals, in aircraft, or during humanitarian efforts, the decisions nurses make are critical to life and the military mission.

At the present time, females in the Air Force with a diagnosis of anorexia nervosa or bulimia are medically released from active duty (AF Instruction 36-3207, 1993). Nurses typically will not gamble losing their retirement by admitting to such a disorder, therefore the disease becomes a 'closet illness' to be handled alone (McNulty, 1994). Contemporary Air Force nurses who suffer from illnesses of anorexia nervosa, bulimia nervosa, binge eating disorder and NOS eating disorders may face negative career implications if they reveal their condition. Admission can be professional 'suicide', according to nurses surveyed by McNulty (1994). Seeking assistance may adversely affect evaluations,

promotional opportunities and possibly jeopardize current nursing positions held (McNulty, 1994).

There has been much concern among medical providers who have encountered numerous females with behaviors of purging, bingeing and fasting (Johnson & Birch, 1994). There is no treatment available for the active duty member afflicted with anorexia nervosa, bulimia nervosa, BED, or the NOS eating disorder in the current military health care system (McNulty, 1994). Treatment is offered to only selected overweight members through the Air Force's Weight Program (AFI 40-502, 1994).

If there is a significant problem found in the nursing community, it is likely that a similar problem exists in the line, aviation, engineering, legal, medical, chaplain corps, and in all military communities that employ women. If all females are affected equally by the diseases of AN, BN, BED and NOS eating disorders, then females assigned to aircraft put the security and safety of troops at distinct risk if their ability to function is jeopardized. Females assigned to areas of engineering and aviation put thousands at increased safety risk. Female officers cleared through top security put the security of the nation at risk if affected by distortions of thinking and paranoia which may occur during the semi-starvation phases of anorexia nervosa.

Women in the Air Force are now assuming command positions and demands for excellence and achievement will only become greater and more competitive in the future (McNulty, 1994). These avenues for service, challenge

and professional growth attract nurses of particular dedication, enthusiasm and imagination (Hall, 1989). Dual role distinguishes females in the officer ranks from those civilians in the same profession. Similarly, the roles and responsibilities of military nurses go beyond those usually associated with nursing (McNulty, 1994).

The military requires a high degree of conformity, standardization, regimentation and wartime readiness (Holberg, 1984). The practice of nursing requires individuality, self-accountability and professional responses to health care dilemmas (Hall, 1989). Military life also separates families for many months at a time, thereby adding extra stress and strain on a military female who functions as a single parent during spousal absence or who functions as the absent spouse, far removed from family and friends (Holberg, 1984).

Garner (1985) states that by leading a highly regimented ritualized life, regulated by rules, taken up by schedules and obligations, the anorexic precludes any chance to look inward and consider her wishes and needs. She thereby negates her selfhood. Instead she directs her attention to pleasing, accommodating, and being sensitive to others. The guiding rule for life is to serve others by meeting their needs. She strives to become a self-object and not a self (Garner, 1985; McNulty, 1994).

Theander (1970) suggested that eating disorders may become more prevalent among all social classes as attitudes about such issues as achievement, appearance, weight, and control become more pervasive

throughout all sectors of society. Boskind-White and White (1983) hypothesized that the conflict between the dual messages of conformity and competitiveness being presented to women in Western societies renders them particularly at risk for these disorders.

The pursuit of perfection is a socio-cultural phenomena today. Woodman (1982) theorized that many individuals in Western society are addicted, in one way or another to food, drugs, or alcohol, because patriarchal cultures emphasize specialization and perfection. Research addressing why women are more at risk for an eating disorder in a society that stresses perfection reflect that as a gender class, women are more concerned with their body and appearance (Boskind-White & White, 1983). For women, perfection is defined in terms of the perfect body, by shape or by weight (White, 1992). Therefore, a cycle of striving to be perfect (defined as thinner, weighing less, or being more toned), expecting approval, and receiving approval becomes established (Woodman, 1982). In fact, it has been established that eating disordered women consider their performance across the many domains of their lives to be central to their self definition (White, 1992).

As a family nurse practitioner, it is essential to recognize that given unrealistic societal ideals and strict military weight requirements, many women experience discontent with their weight and shape. Family nurse practitioners must be aware that eating disorders lie on a continuum ranging from normative concerns about body weight and shape to rigid dieting and diagnostic eating

disorders (Streigel-Moore, Silberstein & Rodin, 1986). Family nurse practitioners have a distinct advantage of being on the clinical front-line in terms of diagnosis, treatment and referral.

Statement of the Problem

With the exception of McNulty's research (1994), recent literature fails to identify current trends relating to the prevalence of eating disorders within a profession dominated by the female gender and with a culture which stresses body image and physical fitness. It is the purpose of this thesis to replicate and examine the prevalence of eating disorders among a select group of active duty female Air Force nurse corps officers.

Research Question

This descriptive study replicated a portion of McNulty's (1994) doctoral dissertation "Eating Disorders in Active Duty Female Navy Nurses: Who, What and Why?" Research questions included:

1. What is the prevalence of Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder, and Eating Disorders Not Otherwise Specified in a select population of active duty female Air Force nurses?
2. What factors within the Air Force environment might predispose these nurses to an eating disorder?

Definitions of Terms

There exist several major categories of eating and weight problems. The current psychiatric diagnostic system specifies several disorders characterized

by gross disturbances in eating (American Psychiatric Association, 1987). The Diagnostic Statistical Manual of Mental Disorders (APA, 1994) specifies four categories of eating disorders: Anorexia Nervosa (AN); Bulimia Nervosa (BN); a new, less established, category of Binge Eating Disorder (BEN); and eating disorder not otherwise specified (NOS) (Yager, Anderson, Devlin, Mitchell, Powers & Yates, 1992; Wilson & Walsh, 1992). The categories of pica and rumination disorder of infancy are mainly disorders of young children and will not be considered. For the purposes of this study, the eating disorders were defined as follows using DSM IV criteria (APA, 1994):

Anorexia Nervosa (AN)

AN is characterized by the following features:

- abnormally low body weight which is at least 25% below expected body weight.
- in postmenarcheal females, amenorrhea defined as the absence of at least three consecutive menstrual cycles.
- disturbance in the way in which one's body weight or shape is experienced such as denial of the seriousness of abnormally low weight or the undue influence of weight and shape on self-evaluation.

Bulimia Nervosa (BN)

BN is characterized by the following:

- recurrent episodes of binge eating
- a loss of control during these eating binges

- use of extreme methods designed to prevent weight gain, such as purging (self - induced vomiting, laxative abuse)
- a persistent over-concern with body image, shape and weight
- a minimum of two binge episodes per week for at least three months

Binge Eating Disorder (BED)

BED criteria is characterized by recurrent episodes of binge eating and by the necessary presence of two features:

- eating in a discrete period of time an amount of food that is objectively viewed as larger than what most persons would eat in similar circumstances
- a sense of loss of control experienced during that particular episode

Eating Disorder not Otherwise Specified (NOS)

Disorders of eating that do not meet the criteria for a specific eating disorder.

Examples:

- a person of average weight who does not have binge eating episodes, but frequently engages in self-induced vomiting for fear of gaining weight
- all of the features of AN in a female except absence of menses
- all of the features of BEN except the frequency of binge eating episodes

Family nurse practitioner (FNP) : a nurse practitioner possessing skills and legal authority necessary for the detection and management of acute self-limiting conditions and management of chronic stable conditions within a family. A FNP provides primary, ambulatory care for families in collaboration with primary care

physicians. The FNP provides health care and guides or counsels families as required. Consultation, joint-practice and referral to associated providers are aspects of the FNP's practice (Holdcraft, 1988).

Health care provider: Nurse practitioner, physician, or other person identified by the subject as a health care provider.

Military: The Armed Forces of the United States. Specifically, the Army, the Navy, the Marines, and the Air Force.

Conceptual Framework

Erikson described eight phases of human development which he called ages of man, each of which has certain developmental tasks, risks, and potential favorable outcomes (Erikson, 1963). Disordered patterns of eating may develop at any stage of human growth and development. Erikson's ages and stages will be reviewed briefly, with particular attention to the potential development of positive and negative outcomes in relation to eating.

Trust versus Mistrust

This stage begins at birth and extends to about 12 months of age. It corresponds to the oral sensory stage of psychological development. Erikson described three factors that demonstrate social trust in infants, one of which was 'the ease of his feeding'. In this stage the infant's range of significant relations is narrow, including only maternal figures.

Politt and Wirtz (1981) observed that the maternal figure's behavior during feeding affects the amount an infant consumes. In their study of thirty six failure

to thrive infants, active mothers disrupted a smooth continuous feeding in a variety of ways such as removing the nipple frequently, turning and changing the position of the nipple, and actively grooming the infant while feeding. The researchers noted that infants of overly active mothers ate less than infants whose mothers provided continuous feeding, fewer position changes, and fewer distractions.

Researchers have also observed that mothers of infants below their birth weights tend to ignore the infant's behavioral cues, such as turning away from the nipple or closing the mouth. They persisted in pushing the nipple into the baby's mouth in spite of these cues (Wright, Fawcett & Crow, 1980).

Hunger and satiety cues must be properly interpreted and responded to in order to prevent both overfeeding and underfeeding in infants. Maternal figures need to be taught how to detect and respond to these cues and to provide a calm, smooth, uninterrupted feeding pattern (Wright, et al. 1980).

Because food is one of the most basic of human needs, the provision of food to the young, when desired and in amounts determined by the infant is essential to a favorable outcome of this developmental stage. Erikson (1963) described a favorable outcome as the predominant presence of drive and hope. As the sensitive caregiver learns and responds to the infant's cues, the infant learns that he can trust the world to provide for his basic needs.

Autonomy versus Shame and Doubt

Feeding at this stage is more complex. The child develops and vigorously expresses preferences for various tastes and textures as well as modes of eating. Self-feeding becomes important and is mastered. Parents must be responsive to the child's cues. Judicious permissiveness by parents and the willingness to sacrifice expediency and neatness in feeding for a more autonomous experience helps lead to favorable outcomes during this stage. The desired outcomes of self-control and will power develop as children learn that they control their own behavior (Erikson, 1963).

Initiative versus Guilt

In terms of eating, a child at this stage is more likely to be integrated into the adult family member's eating patterns. No longer a baby, the child in this stage is often expected to eat at the family table and often on the family's schedule. Parents need to know that an afternoon snack may be necessary if the child is to wait until the adult mealtime. Young children should be allowed to leave the table when finished eating and not be required to sit until the adults are finished (Johnson & Birch, 1994).

It is during this period that power struggles may develop as the child dawdles over meals. Children who generally feel that they can become independent from their parents and explore their limits have mastered the essential developmental tasks of this age (Erikson, 1963).

Industry versus Inferiority

This stage, which Freud labeled latency, lasts from about 6 years to the onset of puberty and is relatively free of eating problems. Eating patterns established at earlier stages are usually continued, but the child's focus is turned outward. The child begins to adapt to the outer world as formal education begins and the school culture assumes influence (Murphy, Youatt, Sawyer, & Andrews, 1994).

In late childhood, appetite increases in preparation for the growth spurt of adolescence. However, the feeding relationship is not usually tested again until the storm of adolescence occurs (Kaplan & Garfinkel, 1993).

Identity versus Role Confusion

Extending from puberty to about 18 years, this stage corresponds to the adolescent stage of psychological development and resurrects many of the conflicts of earlier years. Questions such as "Who can I trust?" "Who is in control here?" and issues of independence from parents reemerge. A new concern, "How do I appear to others?" takes center stage. Appearance issues are related to the desire not to be different and make this group susceptible to outside influences because the predominant significant relationships are with members of the peer group (Subar, Zeigler, & Patterson, 1994).

Ingroups and outgroups are often established based on appearance. The mass media's influence on body shape and size comes into play. The emaciated look so valued by models and rock stars can create concern about

the adolescent's own appearance and eating habits (Brumberg, 1988). The reality is that because of genetic and other factors, most adolescents are unable to achieve the idealized level of slimness without excessive restrictions in diet (Brumberg, 1988). Increasing time away from home and more meals taken in fast food restaurants compound the dilemma for this age group (Elmer-Dewitt, 1995).

During this phase achievement in sports and other activities sometimes depends on weight. The desire to achieve weight goals for ballet, cheerleading, wrestling, football and other endeavors creates a double whammy effect when combined with the usual adolescent preoccupation with appearance (Agras, 1987).

Intimacy versus Isolation

In early adulthood, the range of significant relations has yet a different scope. The drive is to fuse with partners in friendship, sex, competitive and cooperative endeavors (Garfinkel & Garner, 1980). Intimacy defined by Erikson (1963) is "the capacity to commit..to concrete affiliations and partnerships and to develop the ethical strength to abide by such commitments, even though they may call for significant sacrifices and compromises" (p.263).

There are no additional developmental tasks in this stage that relate to eating but carryover concerns related to dissatisfaction with one's size and shape have the potential to disrupt the establishment of adult genital intimacy (Holdcraft, 1988). Unrealistic expectations about perfection of a partner's

physique can also be present in this stage, particularly in terms of love relationships. Preoccupation with one's own or a partners' physical appearance may interfere with the ability to give fully to another through affiliation and love (Gupta & Wattell, 1995).

Generativity versus Self-absorption

Adult generativity involves producing and guiding the development of the next generation. It involves the division of labor surrounding childrearing activities and requires respect and cooperation between marital partners. Overeating and resulting obesity are the predominant eating problems with this age group. Adults of both sexes can experience all types of eating disorders (Kayman, Bruvold, Stern, 1990).

The prominent eating disorder centers around the pervasive problem of obesity in women during childbearing and childrearing years (Gupta & Watteel, 1995). The ability to conceive and bear children requires adequate levels of estrogen and progesterone, which are fat based and fat hoarding hormones. Pregnancy itself is fattening. The metabolic changes of pregnancy, combined with breastfeeding and little regular exercise, all compound the problems experienced by many women during this stage of development (Kaplan & Garfinkel, 1993).

A central task in nurturing a family includes feeding them. Spending more time cooking also compounds the problem for many mothers. The combination of hormone disturbances, fatigue, and extra pounds following childbirth can

contribute to the breakdown of marital sexual relations during this stage (Kaplan & Garfinkel, 1993; Erikson, 1963).

Overweight women are particularly vulnerable to diet aids such as over the counter appetite suppressants, diet clubs, etc.(Elmer - Dewitt, 1995). The cycle of weight loss and weight gain is believed to be more damaging than maintaining extra pounds, but crash diets still receive pages and pages of attention in women's magazines (Elmer-Dewitt, 1995).

Ego Integrity versus Despair

This stage, which encompasses late adulthood to old age, brings other developmental tasks. Having more or less successfully launched their offspring, older adults must face other questions. Typical concerns at this stage center around finding contentment in one's own accomplishments in life and facing the approaching end of life (Holdcroft, 1988).

Eating disorders at this stage of development include the unintentional anorexia of old age and obesity (Holdcroft, 1988). Unintentional anorexia may involve impaired senses of smell and taste; loss of painful teeth; inability to shop for or prepare food; constipation and a resulting feeling of fullness; less money being available for food; and the desire not to eat alone (Holdcroft, 1988).

Disease processes such as neoplasm or chronic obstructive pulmonary disease may also create anorexia in the elderly. Obesity may be related to changes in mobility and activity, change in type and caloric value of food consumed, or the phenomenon of eating being the only remaining pleasure (Holdcroft, 1988).

The motivation to begin and maintain weight control measures during adulthood is influenced by many factors, both physiologic and psychological. Because of the increased morbidity associated with both significant underweight and overweight in the elderly, such measures warrant nurse practitioner consideration (Holdcroft, 1988).

The framework that Erikson developed is predominantly developmental. One may develop tendencies for pre-occupation with eating, weight fluctuations, and elimination patterns anywhere along the developmental timeline of one's life. When a health care provider or Family Nurse Practitioner encounters a patient with a suspected eating disorder, it is essential to obtain an indepth social and family history. (Holdcroft, 1988).

Limitations

There are several limitations to this study. One must consider the characteristics of the Air Force nurses who tend to volunteer their time to fill out a questionnaire. The length of the questionnaire may have prevented some of the respondents from completing it fully. There is the question of the reliability of self reporting. The instrument is a relatively new instrument without extensive validity and reliability. Also the potential negative career implications associated with an eating disorder may have negatively influenced both return rates and honesty of subjects' reponses.

This study is reflective of the practices and attitudes of a group of Air Force nurse corps officers. Since the sample was non random and is relatively

small in size, done under limited time constraints and limited financial budget, extreme care should be taken before attempting to generalize these findings to other Air Force medical environments.

Assumptions

Several assumptions have been made for the purpose of this study:

1. That the active duty female Air Force nurse officers were answering the questionnaire truthfully giving answers that were representative of their beliefs and practices.
2. That the instrument was a valid and reliable measure of the attitudes of Air Force active duty female nurse corps officers.
3. That the Air Force facility chosen for the study was truly representative of the Air Force as a whole.
4. That all questionnaires were completed by active duty female Air Force nurse corps officers.

This chapter has described the purpose and importance of surveying the attitudes and practices of current active duty female Air Force nurse officers. It is important to examine and quantify the current state of eating disorders in the Air Force health care environment. The next chapter will review and critique studies of relevance to the present investigation. Description of the methodological research process used in this study will be presented in a step by step process to include instrumentation and protection of human subjects.

Chapter Two

This review of the literature will discuss the prevalence of eating disorders. Most of the literature deals with civilian student populations; only one is a military study.

Studies of student populations indicate that between 5% and 20% of females report a fear of obesity and occasional binge eating (Kayman, Bruvold, & Stern, 1990). Where binge eating and vomiting on at least a weekly basis is necessary for a diagnosis of bulimia nervosa, the prevalence estimates drop to between 2% and 5% from the much higher documented research performed prior to the criteria revision in 1987 (Levy, 1989). With the revised DSM - III criteria, a bingeing disorder was diagnosed if bingeing occurred at least twice weekly for a period of three months (Yates & Seileni, 1987). This newest criteria has decreased the prevalence of bulimia to 2% (Vitousek & Orimoto, 1993).

There is no accurate prevalence rate established for the NOS category of eating disorders, mainly because many women who do not meet the criteria for AN and BN get clumped into this category of illness. This category might include women with very minimal eating disturbances and also include those who are bingeing, vomiting, and starving but not to the extent required for BN, AN and BED criteria for diagnosis (Kaplan & Garfinkel, 1993).

It has been noted that eating disorders are unique because they appear to be the only form of psychopathology in which culture appears to play a major role in determining the prevalence (Yates & Carney, 1990). Several authors

have suggested that changes in cultural values and attitudes may play a significant role in this increase in the development, incidence and prevalence of eating disorders (Pumariega, 1986; Garfinkel & Garner, 1980). The rise in the prevalence of eating disorders may be a result of the wider adoption of the ideal, that thinness has come to be symbolized in Western culture. This ideal symbolizes: self-discipline, control, sexual liberation, assertiveness, competitiveness, and affiliation with a higher socioeconomic class, as well as the traditional value of attractiveness (Nasser, 1986).

In a study of the prevalence of pathogenic weight-control behaviors among native American females between the ages of 12 and 55, Rosen and colleagues (1986) found that 74% of the 85 individuals studied were trying to lose weight (Rosen, Silberg, & Gross, 1986, p. 305). Seventy-five percent of those dieting were employing potentially hazardous weight-loss methods. The mean age of the subjects using pathogenic weight-loss methods was 28.8 years, and the subjects with a higher body mass index were more likely to use these dangerous methods. It was found that 24% of the dieters used one or more purging behaviors (Rosen, Silberg, & Gross, 1986, p. 306).

Whitehouse and Cooper (1992) studied the prevalence of eating disorders in 540 women aged 16-35 enrolled in a family practice. Of these 540 women, 101 were chosen for interview based on initial screening. The prevalence of AN was 0.2% (one case), of BN 1.5% (eight cases) and NOS 5.4% (29 cases) (Whitehouse and Cooper, 1992, p. 58). Half of the BN cases had not

been identified by the general practitioner. These researchers concluded that hidden cases of BN and NOS are relatively common in general practice.

In a study of 343 patients conducted by Hall and Hay (1991), the annual referral rate for bulimia increased from six to 44 per 100,00 females ages 15-29 years (Hall and Hay, 1991, p. 698). All new referrals to the eating disorder clinic at Wellington Hospital for the years 1977 to 1986 inclusive were seen for a minimum of a two hour interview by Hall and colleagues, who obtained and recorded a detailed eating disorder history. Patients included in the study were those who fulfilled the DSM-III (APA, 1980) criteria for the exclusive diagnosis of AN, BN or NOS. It is important to note the criteria for the diagnosis was not as strict prior to the 1987 revision of the DSM-III. Therefore, the diagnosis of illness is more inflated than the criteria utilized by researchers today.

The results of the Hall study showed that over a 10 year period, 343 patients with eating disorders were seen. One hundred and sixty-two females and eight males were suffering from AN, 121 females and five males from BN and 47 females from NOS. The patients with AN presented at a mean age of 21 years (range 9-54). Their mean age at onset was 18. Only 11% had any previous treatment for an eating disorder (Hall and Hay, 1991, p. 699).

The bulimic patients presented at a mean age of 23 years (range 14-50). Their mean age at onset was 19 years. Thirty-three percent had a history of a previous episode of AN (weight loss of 25% or more of original body weight accompanied by at least 3 months of amenorrhea). Only 12% had any previous

treatment for an eating disorder. They were all concerned about weight and shape and 73% fulfilled DSM-III-Revised criteria for BN which includes two episodes of bingeing per week for at least three months (Hall and Hay,1991, p. 699).

The sufferers of atypical eating disorder (NOS) were all overly concerned about body shape and weight. They presented at a mean age of 22 years (range 13-37). Their mean age at onset was 19 years. Sixty five (19%) had a past history of possible AN. Four (9%) had previous treatment for an eating disorder. Twelve patients had amenorrhea for a minimum of three months but did not fulfill the weight loss criteria for diagnosis of AN (Hall and Hay,1991, p. 700).

The results of this study indicated that BN patients presented at an older age and that both BN and NOS cases had a later age of onset than AN. The average annual rate of referral for female AN remained stable at 5 per 100,000 population (34 per 100,000 females aged 15-29 years). Between 1977 and 1981 the average annual BN was six per 100,000 ages 15-29 years and between 1982 and 1986 this rate increased to 44 per 100,000 females ages 15-29 (Hall and Hay,1991, p. 699).

The researchers concluded that if higher morbidity is not the cause of the increased referral rate, then it needs to be attributed to increasingly knowledgeable relatives, friends and doctors whose efforts have brought these sufferers to acceptable and available services. This research is notable since it

provides prevalence for females over 20-30 years, compared to most research performed on the adolescent to mid-20 age range.

A study completed by Johnson and Hillard (1990) studied the prevalence of eating disorders in the psychiatric emergency room. Over a 3 week period, 143 subjects were selected from patients presenting to the University Hospital psychiatric emergency department in an urban catchment area of 1,000,000 people and consisted mainly of young adults and lower socioeconomic status patients. Subjects were selected from a random sample of shifts over a 3 week period. Screening questionnaires were given to all patients aged 18-45 years of age presenting to the emergency room for treatment. Those with positive screening answers were interviewed by a staff psychologist for evaluation of an eating disorder.

A higher percentage of eating disorders was found than originally expected. Active bingeing within the past year was reported by 22.4% of the women and 14.5% of the men, with 10.4% of the women and 6.6% of the men reporting that they were bingeing at least twice weekly. Of the women, 4.5%, compared to 5.3% of the men, reported bingeing on a daily basis within the past year. Of the 76 men surveyed, 6.6% reported purging behavior (such as taking laxative, fasting, and exercising excessively) within the last year, compared to 9.0% of the 67 women surveyed, while 2.6% of the men admitted to purging behavior at least twice a month as opposed to 1.5% of the women (Johnson and Hillard, 1990, p. 339).

Daily purging behavior was reported by 1.3% of the men and 1.5% of the women. The prevalence of any current eating disorder was 13.3%. There were no cases of AN seen. DSM-III-R BN was diagnosed in 3.0% of the females and in 2.6% of the males. Atypical NOS eating disorders showed the highest prevalence rates, with 12% of the women and 9.2% of the men being diagnosed with eating disorders that did clearly meet the DSM-III-R criteria for AN and BN (Johnson and Hillard, 1990, p. 339).

All 16 subjects diagnosed with NOS reported active bingeing. Affective disorders were diagnosed most frequently (eight cases). There were seven cases of substance abuse disorders; and five individuals were diagnosed with personality disorders; one with post traumatic stress disorder; two with adjustment disorder with depressed mood; four with schizophrenia; one with AIDS dementia and one with impulse control disorder (Johnson and Hillard, 1990, p. 340). This research showed a higher prevalence than in most research reviewed; however, it needs to be noted that the study sample was screened from a psychiatric population.

Schotte and Stunkard (1987) found a difference between clinically significant BN and bulimic behaviors in a sample of 87 patients. According to their findings, only 1.3% of women and 0.1% of men met the criteria for BN, although a large percentage (10.1% of women and 15% of men) reported binge eating at least twice weekly (Schotte and Stunkard, 1987, p. 1214).

Perhaps one of the most valuable articles reviewed was one that discussed the frequency of bulimic behaviors and associated social maladjustment in female graduate students. Herzog and Norman (1986) conducted a questionnaire survey of 550 female medical, business, and law students and found that 12% met the criteria for BN (Herzog and Norman, 1986, p.355). The criteria for BN was based on only 1 episode per week, prior to the DSM-III-R criteria of 1987. The bulimic students reported significantly more social maladjustment (difficulty with interpersonal peer relationships) than their non-eating disordered peers.

Herzog and Norman (1986) found that of the 550 students who returned the questionnaire, 26% represented the law students, 54% were medical students and 20% were business students. Fifty-six (10.2%) were bingeing and purging at least once per week, and 22 students were bingeing and purging one to three times per month. Of the 56 bulimic students, 35 were from the law school, none from the medical school and 12 were from the business school. The mean age for the bulimic subjects was 25.8 years. The mean age of onset was 18.6 years and the mean duration of symptoms was 7.4 years (Herzog and Norman, 1986, p.359).

In this study, students who binged and purged at least once each week had significantly elevated overall social maladjustment scores, while those whose symptoms were less frequent failed to demonstrate a significant difference in social adjustment.

Female medical students with eating disorders described how food can become a remedy for loneliness, depression, academic stress and low self-esteem. This study further suggested that the DSM-III-R binge criteria of twice weekly might be too restrictive. This criteria, however, has been adopted by the DSM-IV.

Eating disorders have been associated with significant morbidity and, in fact, with mortality. They likewise have been associated with serious psychopathology (Johnson, 1989) as well as with a concurrent high prevalence of affective disorders (Levy, 1989), as was documented in the prevalence study of eating disorders in the emergency room (Johnson and Hillard, 1990).

Love & Seaton (1991) found that in a survey of 406 high school students, binge eating was present in 46% of students sampled with 8% reporting that they sometimes or always vomit after a binge. The fact that apparently normal or nonclinical populations engage in abnormal eating practices challenges assumptions about normal eating and adolescent development (Love & Seaton, 1991, p. 681).

The prognosis for AN and BN is fairly dismal. It has been estimated that about half of patients with AN go on to have food-related difficulties or other psychiatric problems, whereas 6% to 10% will die of complications related to attendant physiologic complications or suicide (Love & Seaton, 1991, p. 688).

Little is known about the longitudinal course for BN because of its relatively recent identification as a distinct clinical entity. Prognosis is generally

thought to be poorer for those with a concomitant substance abuse problem or a history of AN prior to the development of BN. It has been recently suggested that mortality for BN may be approaching that of AN (Love & Seaton, 1991).

It appears that, eating disorder syndromes are tenacious, far from benign, and extend beyond simply the desire to be fashionably thin. For both disorders, the longer the patient has been engaging in the behavior and the more extreme or difficult the systems and cycles are to interrupt and replace, the more protracted is the outcome. For both illnesses, the sooner these patterns are interrupted and replaced, the better are the chances that the person will recover completely (Love & Seaton, 1991).

McNulty (1994) studied 706 (n= 1323) active duty Navy nurses aged 21-58 years regarding eating disorders and found significant risk if nurses were rotated from an inpatient setting to an outpatient setting. She speculated that the Navy does tend to attract women who are predisposed toward an eating disorder. She also speculated that the Navy provided an environment that enabled the eating disorder to thrive and survive with its emphasis on looks and the pressure to advance in rank. The statistics of her study indicated 3.3% (23/706) of nurses had entered active duty with pre-existing eating disorders yet nearly 50% of the 23 nurses were classified as either AN/BN or NOS. Her findings suggested that a military lifestyle may attract those predisposed for an eating disorder. Although she found no significance between military or nursing

professions, her prevalence rate of bulimia of 12.5% clearly indicated concern in her sample of women (McNulty, 1994, p248).

In a study performed by Swain (1991), the assumption that diagnostic grouping is the most helpful method of distinction among eating disordered women was abolished. Relationships between the clinical features of eating disorders and individual psychological functioning were investigated in a population of 114 eating disordered females. The study group consisted of 63 bulimics, nine anorexics, seven bulimic-anorexics, 23 with NOS and 12 with indications of an eating disorder. No significant differences in psychological functioning were found when diagnosis was used to classify the subjects into groups. But significant differences did emerge when subjects were classified by clinical associated features. Among the clinical features associated with greater psychopathology were: low body weight, frequent weight fluctuations, amenorrhea of longer than 3 months duration, purging via laxatives, frequent exercising, and binges of more than 3 times a week. This clearly indicates that a diagnosis is not needed to establish deep concern for women who employ such methods of weight reduction.

The majority of investigations concerning eating disorders studied relatively young populations of females and classified the disorders into DSM criteria . Generally such studies involved distinct populations of college students, psychiatric patients and one military population. All studies yielded descriptive information that indicated an eating disorder problem in the population. This

study sought to discover if the prevalence of an eating disordered population exists within a selected group of Air Force nurse corps officers.

Based on the research cited, all forms of eating disorders need to be taken seriously and intervention needs to be implemented at the earliest levels. While it seems important to establish a diagnosis, in most research articles reviewed, the establishment of a diagnosis did not identify seriousness of illness in and of itself. In this research, no diagnosis will be established. Rather, a review of symptoms which may or may not fit the criteria for AN, BN, BEN or NOS were elicited.

Chapter Three

Methodology

This chapter will discuss the research design and research methods that were undertaken in this study. In this chapter descriptions of the modification of the questionnaire and techniques used to establish its validity and reliability will be discussed. Information on data collection and protection of human rights will be noted. The research methodology used in this study will be discussed in a step wise approach. This study was a descriptive quantitative study whose goal was to describe and quantify eating behavior patterns and attitudes within an active duty female Air Force nurse population.

McNulty's demographic tool was developed to study various military variables significantly associated with the presence of eating disorders. McNulty's tool was modified for this study to increase its applicability to the Air Force environment. The modified tool was comprised of 50 questions of yes and no and of Likert design (see Appendix A). Those surveyed were also asked to list their behaviors and frequency of events such as bingeing, vomiting, purging, use of laxatives, diuretics, diet pills, enemas, and excessive exercise patterns. Information was asked pertaining to past and current eating behaviors employed while on active duty in the nurse corps. DSM IV (APA, 1994) definitions of anorexia nervosa, bulimia nervosa, binge eating disorder and atypical eating disorder not otherwise defined (NOS) were utilized by the researcher to determine the status of the respondent.

There was assured anonymity (no coding) granted to those surveyed and the researcher was unable to identify specific cases. For example, if a respondent admitted to vomiting two or more times weekly with associated purging efforts, thus fitting the DSM IV (APA, 1994) criteria for BN, it was assumed that the respondent was a high suspect for having BN and was categorized as such.

The questionnaire established the person's self reported scoring of their current and past self-esteem, motivation, achievement, body satisfaction, job stress and job satisfaction. The survey inquired about family and prior history of eating disorders, including whether the subject entered active duty with a pre-existing eating disorder. Height, weight and age, as of February 28, 1996, were also assessed. The respondent also reported her fitness level as measured in the Air Force by cycle ergometry.

Multiple demographic and psychosocial variables were assessed through the questionnaire and were used as independent variables (see Appendix A).

A. Descriptive

- age
- height
- weight
- within weight and body fat standards
- cycle ergometry category

B. Professional

- years on active duty
- current nursing practice
- job stress
- history of failed promotion
- history of perceived mentorship in current nursing practice
- current job title
- job satisfaction

C. Psycho-social

- level of self esteem
- level of motivation
- body satisfaction
- level of achievement
- family separation

D. History

- prior history or an eating disorder (family or self)
- history of illness other than routine screening

Those who responded were asked to assess on a scale of 1-5 (5 being the most significant) the following reasons that they might have developed an eating disordered event while on active duty based on the following:

- rotating shifts
- being on their own the first time
- having a prior history of an eating disorder

- being separated from family and friends
- being dissatisfied with their job
- having no one to talk to about their eating behavior
- being stationed overseas
- being on flying status
- being placed in an area they did not want
- failing to be promoted
- trying to pass the AF fitness standards
- being overweight
- feeling overweight
- competitiveness experienced in climbing the ladder of success
- failing to be selected for job or school
- non-availability of low-fat meals
- no time for physical fitness
- being harassed by superiors concerning weight
- personal marital/relationship problems
- poor command morale
- non-support by supervisors
- lack of help for eating problem
- fear of being kicked out of the service for overweight
- fear of being kicked out of the service for admitting an eating problem
- lack of proper role modeling by supervisors

- maintaining Air Force height/weight standards

Internal Consistency

McNulty (1994) reported a Cronbach's alpha of 0.5184 on the psycho-social portion of the survey. The physiological areas of the questionnaire were also reported as having a Cronbach's alpha of 0.4736. Cronbach alphas' for the modified tool were reported to be: psycho-social 0.2585 and 0.1935 for the pshyiological areas (SPSS 6.1.2).

Validity

The revised tool was reviewed by Captain McNulty, USN, FNP (DPH) who did the original study; Dr. Tracy Sbrozzo, a clinical psychologist at the Uniformed Services University of the Health Sciences specializing in eating disorders; and Lt. Col (Ret) Patricia Ravella, USAF, NC , a doctorally prepared nurse knowledgeable about AF policy and procedures and currently Chief of Medical Education at Wilford Hall Medical Center. All three experts reviewed the questionnaire to establish content and construct validity.

Approvals for this study were obtained from the selected thesis committee members and Institutional Review Board (IRB) at medical treatment facility.

Four hundred and eighty eight active duty Air Force nurses were assigned to medical treatment facility (10.6% of the AF Nurse Corps) as of February 1996. The number of female active duty nurses assigned to medical treatment facility was 377 (personal communication, Captain Spicer, Nurse Utilization Office, February 2. 1996). The minimum acceptable level of power for this study which

would result in a 20% chance of a Type II error at a significance level of .05 utilizing a one-tailed test was determined to be a sample size of 152 (Kraemer & Theimann, 1987).

A convenience sample of 300 active duty female Air Force nurse officers was drawn from the population of 377 assigned to the facility. This Air Force medical treatment facility was chosen due to its large percentage of active duty female Air Force nurse officers (10.6% of the entire AF Nurse Corps). The 50 item questionnaire was distributed by the researcher to the mail boxes of active duty female nurses in both inpatient and outpatient settings.

Each active duty female Air Force nurse received a 4 page questionnaire with a pre-addressed stamped envelope. The initial paragraph on page one of the questionnaire discussed the purpose of the study and informed them of who the principle investigator was and to contact her if there were any questions. The questionnaire was completed by the AF nurse and placed in the pre-addressed stamped envelope and mailed to the researcher's post office box at the Uniformed Services University of the Health Sciences (USUHS).

This was an anonymous survey and participation in this study was voluntary, consequently the need for the participants to sign informed consents was not required. Consent was implied by completion and return of the survey. Confidentiality of the subjects was preserved at all times. Institutional Review Board approval from the medical treatment facility was obtained for the protection of human subjects.

Chapter Four

Data Analysis

The goal of this thesis was to: survey the eating habits and attitudes of current Air Force female nurse corps officers; determine the prevalence of eating disordered behaviors, i.e., anorexia nervosa, bulimia, binge eating, and eating disorders not otherwise specified; explore factors that might be related to the development of abnormal patterns in eating behavior of Air Force nurses; and to identify areas that might be targeted for change for the prevention of future cases of eating disorders. SPSS 6.1.2 version was the statistical and information analysis software used for this study.

Descriptive analyses such as percentages and standard deviations were used to describe the data and sample. Bivariate analysis of the dependent variables was attempted through the use of cross tabulation (chi square) and ANOVA. Results from the ANOVA and cross tabulation resulted in no statistical significance. Out of 300 surveys, 175 questionnaires were returned completed with one questionnaire returned blank , a 58.3% return rate.

The first 10 questions of the survey concerned demographic variables. Data indicated 133/171 (78%) of respondents were between 25 and 54 years old and weighed an average of 137 pounds. The mean height was 65.2 inches. The data showed that 100/ 175 (57%) of the respondents had less than 5 years of active duty and 131/175 (75%) were shift workers. Over 105/175 (60%) worked in either ICU/CCU, Med/Surg units or OB/GYN units and 130/175 (74%)

were staff nurses. Ninety percent (158/175) stated they were within AF height, weight and fitness standards. Forty nine percent (86/175) indicated they were healthy (Tables 1 and 2).

Table 1

Demographic characteristics of survey sample.

<u>Variable</u>	<u>Percentage</u>	<u>n</u>
Age > 25 years	78	175
AD < 5 years	57	175
Shift work	85	175
Within AF Ht & Wt Standards	90	175
Staff nurses	74	175
Content with health	49	175
ICU work area	60	175

Table 2

Height and weight characteristics of survey sample.

<u>Variable</u>	<u>n</u>	<u>Mean</u>	<u>SD</u>
Weight	171	137 lbs	11.3
Height	175	65.2 in	4.6

Table 3

Number of subjects with high risk factors among specific eating groups, n=172.

High Risk Variable	Anorexia Nervosa	Bulimia Nervosa	Binge Eating Disorder	Not Otherwise Specified
Rotate shifts	2	4	22	12
Prior history of eating disorder	1	1	0	0
Separated from family /friends	0	1	2	1
Unhappy with job	1	1	10	5
Family member with eating disorder	1	1	1	2
No time for PT	0	2	19	9
↓availability of low-fat meals	1	4	20	17
Unhappy with weight	2	4	16	8

Anorexia

Questions regarding anorexia nervosa were multiple choice and dealt with self body perception, self-esteem, weight gain concerns, fasting patterns, amenorrhea, and frequency, duration, and motivation of their exercise pattern. Two respondents self-identified as anorexic (less than 1%). Both were over 67 inches and under 110 pounds. Both were unhappy with their weight, were always concerned with their weight, skipped meals prior to weigh-in, and

exercised more than once a day. One was from an ICU and the other was from a Med/Surg unit. Only one under 40 years of age stated she had amenorrhea for more than 3 months.

Binge Eating

There were four questions (20-23) on binge eating behavior on the survey. Of the 27/174 (17.7%) respondents who reported bingeing behavior during the last three months, five nurses self-reported as persistent bingers (more than twice a week). Three of the five worked in an ICU area and all were staff nurses who rotated shifts. Two stated they could stop their binge once started, one nurse reported that she couldn't. All five nurses stated they knew of more than two other active duty females in the Air Force who had an eating disorder.

Bulimia Nervosa

Questions 23 through 39 asked about bulimic eating behaviors. Four nurses self-reported vomiting at least twice a week. All were unhappy with their body weight yet claimed they were content with their life. Only one reported seeing a health care provider more than twice in the last three months, excluding routine exams. All four stated they knew of more than one other AF nurse who had an eating disorder. All four routinely used laxatives prior to weigh-in with only one respondent reported use of diet pills.

Significant factors perceived to contribute to present eating behaviors within the military environment were asked (Table 3). Of 172 respondents, fifty

nurses (29%) stated rotating shifts along with 21% (37/175) of respondents reported that nonavailability of low-fat meals contributed to their eating behaviors. Of significance, 71/174 (41%) reported they had no time for physical exercise. Three questions asked about prior history and family history of eating disorders. Eight percent (12/174) reported an immediate family member with an eating disorder. Only one of these twelve self-reported having a past eating disorder and coming on active duty with an eating disorder. Two professional / career implication questions asked whether admission of an eating disorder would harm one's career with the Air Force and whether if a program were available would they seek it out. Forty two percent (74/173) stated they knew that admitting an eating disorder would harm their career. Only 36% (63/175) stated they would seek help if the Air Force had a program. One serendipitous question asked the respondents if they knew of active duty Air Force women who had an eating problem. Over 50% (87/173) respondents stated they knew one or more active duty Air Force women with an eating disorder.

This chapter has described the sample characteristics of the data collected from the Air Force nurses' responses on the survey. It discussed the variables using descriptive statistics to answer the research questions.

Chapter Five

Conclusions and Recommendations

In answering the first research question, "What is the prevalence of eating disorders among a select population of active duty Air Force nurse officers?", the answer is not statistically significant. Regarding this sample of 175 nurses, less than 1% are anorexic, less than 1% are bulimic, less than 1% are binge eaters, and 12/175 (6.8%) are eating disordered not otherwise specified. With the exception of the NOS category where there is no verifiable documentation on NOS prevalence, this sample falls below the expected values reported in the literature. Based upon Erikson's theoretical framework of behavioral and environmental factors which may impact eating behaviors and the high risk environments within the military milieu, the percentage rates obtained for AN, BN, and BEN categories were surprising. This may be accounted by several limitations.

These low percentages might be the result of the reliability of the instrument itself. The Cronbach alpha results, once obtained, were not the most desirable. The length of the instrument (50 questions) totaling 4 pages may have fatigued the respondents. The Hawthorn Effect, answering questions the way the respondent perceives the surveyor desires, may also have contributed to the low percentages. The sensitive nature of the topic itself and self-report data is known to be a limitation. This sample could be considered a "snap shot"

in time of the nurses attitudes and behaviors peculiar to a particular military environment. All these factors might have affected or skewed the data.

Mission Readiness

Although statistical correlations were not performed, a speculative clinical significance could be considered, especially with respect to mobility and readiness. With present day multi-tasked teams of five to six health care providers, one eating disordered provider could clinically imperil the mission. Each health care provider is mandated to be fully functional both mentally and physically. Having an eating disorder impacts both the mental and physical health of an individual.

The other research question asked was, "What factors contribute to eating disorders within an Air Force environment?" Rotating shifts and the perceived nonavailability of low-fat meals contributed to the eating patterns. Significant and innovative measures have been tried in accommodating shift workers and their circadian rhythm; however, within Air Force culture, the mission always comes first. This is not to say that nurse executives are not sensitive to this issue. Nurse executives tailor their shifts to the individual mission of the medical treatment facility. This sample can only identify rotating shifts as a significant variable peculiar to this particular medical treatment facility. Although Air Force dietitians within the last ten years have pushed the "Healthy Heart Program" in all base cafeterias, by labeling low-fat foods; cafeteria hours and dietary habits may play a part in the perceived non-availability of low-fat foods.

Directions for Future Study

Since this study was a pilot study, there is a need for replication or further study in the area of eating disorders among the military. The probability of a high prevalence rate of eating disorders in the military is reflected in the last serendipitous question asked of the respondents regarding knowledge of other Air Force women with eating disorders. Fifty percent (87/175) replied yes to knowledge of one or more Air Force women with an eating disorder. This is a relatively high report rate. The speculative query might be, did the respondents all know the same woman?

Despite expert panel review of the survey instrument, more modifications should be made if attempting to replicate this study. Shortening the instrument to two pages and randomizing the questions so that not all bulimic questions are bunched together is recommended. To enhance a more neutral tone with the instrument, some key threat words should be changed, e.g., eating disorder to eating behavior.

More than one survey site might also prove more representative. A survey of two specific groups of military women, e.g., female nurses and female flight line officers would help to elucidate environmental factors which may play a role in the development of certain eating disorders.

A question on how stress affects job performance should be added, along with patient load and perceived staffing questions. Stress is directly related to

eating disorders and known stresses within nursing are: patient load and staffing issues.

As a future Air Force Family Nurse Practitioner, a more qualitative survey / interview / case study approach may elicit more information on the risk factors and prevalence of eating disorders in the active duty military environment. Despite the questionable confidentiality among active duty clients, an interview technique may elicit more information given the psychological foundations of most eating disorders.

At this time, there is no documented prevalence rate of eating disorders within the Air Force military environment, despite the increasing rates in the general population. It is imperative that this issue be re-visited, especially if medical readiness is to be an issue. It is hoped that this survey has contributed to the Air Force medical service environment by providing a "snap shot" of the prevalence of eating disorders sampled at one military hospital.

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Wilford Hall Medical Center

Active Duty Air Force Nurse Eating Behavior Survey

Please answer the following questions honestly and openly. In no way will your identity be known. Complete anonymity is assured. There is no coding used and this will be the only survey you will receive.

Your valued responses will make it possible to study the factors that contribute toward eating behavior patterns in active duty Air Force nurses. This survey has been sent to a sample of 250 nurses assigned to Wilford Hall.

You play an essential part in the outcome of this study. Eating behaviors have been studied in a population of female military Navy women but have never been studied in a population of active military Air Force women. Your time and input are greatly appreciated.

INSTRUCTIONS:

This survey takes approximately 15 minutes to complete. Please circle your answer. Feel free to write any comments directly on this survey but **do not sign your name**. Do not skip any question. Once completed, please enclose the survey in the self-addressed stamped envelope and **return NLT Feb 23, 1996**. If you have any questions about this survey feel free to call the principle investigator: Maj Harriet Quesenberry at home (301) 599-9184. **Thank you for your valuable time.**

1. Age: a) 18-24 b) 25-34 c) 35-44 d) 45-54 e) 55+
2. My current area in nursing is:
 - a) ICU/OR b) Med-Surg c) OB/GYN d) Pediatrics e) Mental Health f) Other
3. My practice setting is: a) Inpatient b) Outpatient
4. I am a shift worker: a) Yes b) No
5. I am currently within Air Force weight and body fat standards. a) Yes b) No
6. At my last testing, my cycle ergometry category/level was:
 - a) below 3 b) 3 c) 4 d) 5 e) 6
7. I regard my body as: a) Thin b) Average c) Overweight d) Very overweight
8. My current body satisfaction is: a) Happy b) Content c) Unhappy d) Disgusted
9. Are you *always* concerned about gaining weight? a) Yes b) No
10. Have you recently lost weight not due to any medical condition? a) Yes b) No
11. Have you conscientiously skipped more than one meal per day to prepare for weigh-in?
 - a) Yes b) No
12. During the last 3 months, how often have you exercised per week?
 - a) once a day b) twice a day c) 1-3 times a week d) 4-6 times a week e) Never

13. How long do you exercise *each time*?

- a) Not applicable b) < One hour c) 1-2 hours d) 3-4 hours e) 4+ hours

14. What percentage of your exercise is aimed at controlling your weight?

- a) 0% b) 25 % c) 50% d) 75% e) 100%

15. What percentage of your exercise is aimed at preparing for cycle ergometry testing?

- a) 0% b) 25 % c) 50% d) 75% e) 100%

Binge Eating (Defined as eating an amount of food that others of your age and sex regard as unusually large. It does not include times when you may have eaten a normal quantity of food which you would have preferred not to have eaten or special holidays.)

16. During that last 3 months did you ever have an eating binge? a)Yes b)No

17. During the past 3 months how often have you typically had an eating binge?

- a)None b) Once a week c) Twice a week d) > Twice a week

18. Do you currently binge eat? a)Yes b) No

19. Do you feel you can stop once a binge has started? a) Yes b) Sometimes c)No d) Not applicable

20. During the past 3 months, have you *ever tried* to vomit after eating in order to get rid of the food?

- a)Yes b)No

21. During the past 3 months, how often have you purposely vomited your food after eating?

- a) Never b) Once a week c) Twice a week d) > Twice a week

22. Are you currently vomiting your food for the purposes of weight control? a)Yes b)No

23. Do you vomit your food to prepare for weigh-in? a)Yes b)No

24. During the past 3 months, did you ever use laxatives to control your weight or get rid of food?

- a)Yes b)No

25. During the past 3 months, how often did you take laxatives for weight control?

- a) Never b) Once a week c) Twice a week d) > Twice a week

26. Are you currently using laxatives for weight control? a)Yes b)No

27. Do you use laxatives prior to weigh-in? a)Yes b)No

28. During the past 3 months, have you used water pills (diuretics) to control your weight?

- a)Yes b)No

29. During the past 3 months, *how often* did you take water pills to control your weight?

- a) Never b) Once a week c) Twice a week d) > Twice a week

30. Do you use water pills prior to weigh-in? a)Yes b)No

31. During the past 3 months, have you used diet pills to control your food intake or weight?

- a)Yes b)No

32. During the past 3 months, how often did you use diet pills?

- a) Never b) Once a week c) Twice a week d) > Twice a week

33. Are you currently using diet pills to control your weight?

- a)Yes b)No

34. Do you use diet pills prior to weigh-in?

- a)Yes b)No

For the questions (# 35 through # 42), please rate each on a scale of 1 to 5 (with 5 being the strongest or most significant for each).

I believe that the following reasons have contributed to my eating patterns:

35. Rotating shifts.

- a) 1 (least significant) b) 2 c) 3 d) 4 d) 5 (most significant)

36. Being on my own for the first time.

- a) 1 (least significant) b) 2 c) 3 d) 4 d) 5 (most significant)

37. Having a prior history of an eating disorder.

- a) 1 (least significant) b) 2 c) 3 d) 4 d) 5 (most significant)

38. Being separated from my family/friends.

- a) 1 (least significant) b) 2 c) 3 d) 4 d) 5 (most significant)

39. Being dissatisfied with my job.

- a) 1 (least significant) b) 2 c) 3 d) 4 d) 5 (most significant)

40. Having no one to talk to about my eating behavior.

- a) 1 (least significant) b) 2 c) 3 d) 4 d) 5 (most significant)

41. Having been stationed overseas.

- a) 1 (least significant) b) 2 c) 3 d) 4 d) 5 (most significant)

42. Having been on flying status.

- a) 1 (least significant) b) 2 c) 3 d) 4 d) 5 (most significant)

43. During any or all of the above mentioned eating behaviors/pattern, did you skip your menses for more than a 3 month period?

- a) Yes b)Uncertain c)Not applicable

44. A member(s) of my immediate family has or has had a history of an eating disorder.

- a) Yes b)Uncertain c)No

45. I have had problems with an eating disorder in the past.

- a) Yes b)Uncertain c)No

46. I came on active duty with an eating disorder.

- a) Yes b)Uncertain c)No

47. In your opinion, would admitting an eating behavior disorder affect one's career?

- a) Yes b)Uncertain c)No

48. In your opinion, if there were a program for active duty personnel specifically dealing with the disorders of eating and the assurance of treatment was granted with no threat to your career, would you then be willing to seek treatment?

- a) Yes b)Uncertain c)No

49. How many active duty Air Force nurses do you know that have an eating behavior problem?

- a) None b) One c) 2-3 d) > 4

50. In the last 3 months and excluding routine screenings, how many times have you seen a health care provider?

- a) None b) One c) 2-3 d) > 4

Thank you for completing this survey. Please return this survey in the self-addressed stamped envelope **NLT 23 Feb 96.**

Results can be obtained from the researcher at the following address:

Major Harriet Quesenberry

