Binge eating and bulimic behaviors in a select Native American adolescent population
by Luana Mae Auker

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Nursing
Montana State University
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Abstract:
Although many studies concerning binge eating and bulimia have been completed over the last decade, no documentation of studies concerning binge eating and bulimic behaviors for the Native American population was found in the literature. Most studies have been conducted among college student populations. There are few studies of the adolescent population. Because the onset can occur in the younger age groups and no data are documented concerning Native American populations, binge eating and bulimic behaviors need to be studied among Native American adolescents.

Therefore, the purpose of this study was to describe binge eating and bulimic behaviors in a Native American adolescent population. A self-report questionnaire was used to determine the patterns of binge eating and bulimic behaviors. The sample consisted of 109 students enrolled in a high school within the boundaries of a Northwest Plains Indian tribal reservation. Forty-five percent of the sample were women and 55% were men. The age range was from 14 to 19 years, with a mean age of 16.07 years. Thirty-nine percent reported binge eating episodes, with 11% binge eating weekly and 2.7% daily. Seventy-six percent reported binge eating episodes beginning from 10 to 14 years of age. Purging behaviors included induced vomiting (15.5%), laxative abuse (1.8%), and diuretic abuse (1%). Vigorous exercise was reported by 18.3% as a method of weight control after a binge episode, while 32.1% reported frequent highly restrictive dieting. Following the DSM-IIIR criteria and Binge Scale scores, the estimated prevalence for bulimic behavior was 13.7%, mostly in women. When the criterion for binges was restricted to weekly episodes, only 5.5% were classified as having bulimic behaviors. Data indicated a slightly greater rate for binge eating episodes among modern orientation students (53%) compared to traditional orientation students (47%).

The data from this study provided a baseline for future studies concerning binge eating and bulimic behaviors in Native American adolescents. In addition, nursing's role in primary and secondary prevention programs was discussed.

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Luana Mae Auker

A thesis submitted in partial fulfillment
of the requirements for the degree

of

Master of Nursing

MONTANA STATE UNIVERSITY
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Date July 19, 1993

This work is dedicated to my husband, Ed, our two sons, Steve and David, and to my parents, Adolph and Ann Mittelsteadt, for their love, encouragement, confidence in me, and patience throughout the difficult times

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## ABSTRACT

Although many studies concerning binge eating and bulimia have been completed over the last decade, no documentation of studies concerning binge eating and bulimic behaviors for the Native American population was found in the literature. Most studies have been conducted among college student populations. There are few studies of the adolescent population. Because the onset can occur in the younger age groups and no data are documented concerning Native American populations, binge eating and bulimic behaviors need to be studied among Native American adolescents.

Therefore, the purpose of this study was to describe binge eating and bulimic behaviors in a Native American adolescent population. A self-report questionnaire was used to determine the patterns of binge eating and bulimic behaviors. The sample consisted of 109 students enrolled in a high school within the boundaries of a Northwest Plains Indian tribal reservation. Forty-five percent of the sample were women and 55% were men. The age range was from 14 to 19 years, with a mean age of 16.07 years. Thirty-nine percent reported binge eating episodes, with 11% binge eating weekly and 2.7% daily. Seventy-six percent reported binge eating episodes beginning from10 to 14 years of age. Purging behaviors included induced vomiting (15.5%), laxative abuse (1.8%), and diuretic abuse (1%). Vigorous exercise was reported by 18.3% as a method of weight control after a binge episode, while 32.1% reported frequent highly restrictive dieting. Following the DSM-IIIR criteria and Binge Scale scores, the estimated prevalence for bulimic behavior was 13.7%, mostly in women. When the criterion for binges was restricted to weekly episodes, only 5.5% were classified as having bulimic behaviors. Data indicated a slightly greater rate for binge eating episodes among modern orientation students (53%) compared to traditional orientation students (47%).

The data from this study provided a baseline for future studies concerning binge eating and bulimic behaviors in Native American adolescents. In addition, nursing's role in primary and secondary prevention programs was discussed.

# CHAPTER 1

# INTRODUCTION

## Purpose

The goal of this research study was to describe binge eating and bulimic behaviors in a Northwest Plains Indian tribe. The study examined variables such as gender, age, weight history and socio-cultural and psychological factors, to determine risk factors for bulimic behaviors. The data from this study provided health care providers with statistical data and a knowledge base concerning binge eating and bulimic behaviors in a select Native American adolescent population. The knowledge will assist the health care providers to develop appropriate primary and secondary prevention programs to reduce or prevent the more serious consequences of bulimia.

## Background and Significance of the Study

During the last two decades there has been an increased awareness of pathological eating behaviors. Only recently bulimia has been classified as a distinct eating disorder, with the diagnosis based on attitudes and style of eating behavior rather than weight status (American Psychiatric Association, 1987). Nationally,

bulimia has been reported to be more prevalent in the last 10 to 15 years (Cauwels, 1983; Marx, 1991). Influence of American cultural pressure toward slimness is thought to contribute to the recent increase in bulimia cases in both men and women. Adolescents and young adults may be highly susceptible to social pressures to conform to this image of thinness as an indicator of beauty, health, and success. The main characteristic for bulimia is the overwhelming desire to become and remain excessively thin. Other characteristics of the bulimic individual are episodic binge eating, a sense of loss of self-control over eating practices, an awareness that this eating pattern is abnormal, general lack of self-confidence and self-esteem, depression, self-condemnation, and an inability to break the obsessive cycle of binging and purging (Gormally, 1984; Herzog, 1982; Mitchell & Pyle, 1985).

The age range for bulimia is from 11 to 51 years with a mean age of 18 to 23 years (Fairburn & Cooper, 1982; Herzog & Copeland, 1985; Lakin & McClelland, 1987; Pyle, Mitchell, & Eckert, 1981; Schotte & Stunkard, 1987). This eating disorder has been noted to continue for 5 to 10 years, or longer, before being diagnosed (Herzog & Copeland). Bulimia is usually presented by self-reporting. Brownell and Foreyt (1986) stated that more than 70% of bulimia cases are client-volunteered to physicians. Frequently, little evidence on physical examination is available during early stages to indicate the existence of bulimia. Therefore, it is often difficult to make the diagnosis for bulimia on the basis of routine history or

physical examination until the severe medical complications have developed after several years of binging and purging.

Problem Statement

Although many studies concerning bulimia and binge eating have been completed over the last decade, no documentation concerning binge eating and bulimic behavior for the Native American population was found in the literature review. Most studies have been conducted among college student populations (Halmi, Falk, & Schwartz, 1981; Hawkins & Clement, 1980; Pope, Hudson, & Yurgelun-Todd, 1984; Schotte & Stunkard, 1987). There are few studies of adolescent populations (DuPont, 1984; Johnson, Lewis, Love, Stuckey, & Lewis, 1984; Lakin & McClelland, 1987). Because the onset can occur in adolescent groups, binge eating and bulimic behaviors need to be studied among adolescents. The research questions addressed in this study are:

1. What is the prevalence of binge eating and bulimic behaviors in a Native American adolescent population?

2. Is there a difference in the prevalence of binge eating among women and men?

3. Is there a difference in the prevalence of bulimic behaviors in women and men?

4. At what age did the binge eating episodes begin?

5. What is the frequency and length of binge eating episodes?

6. What particular food or type of food is eaten during a binge eating episode?

7. What circumstances are associated with or precede a binge eating episode?

8. What percent of the sample use each of the purging methods: vomiting, laxatives, diuretics, excess exercise, restrictive diets?

9. What percent of the sample reported the following attitudinal behaviors: loss of control over eating, increased dissatisfaction with body image, poor self-esteem, depression?

10. Is the prevalence of binge eating and bulimic behaviors higher in the Native American students who consider themselves "traditional" than in the Native American students who consider themselves "modern"?

## Definition of Terms

The terms used in this study are defined as follows:

1. Bulimia is an eating disorder characterized by frequent uncontrolled binge eating and then purging of food.

2. Binge eating episodes are episodes of consuming great quantities of food in a short period of time (Cauwels, 1983).

3. Purging is the evacuation of food from the body, either by the use of laxatives or enemas, or by induced vomiting.

4. Obesity is a bodily condition in which there is an excess of fat in relation to the rest of the body. Obesity is presumed to exist

when a person is 20% to 30% or more over his or her normal weight (Gormally, 1984).

5. Traditional orientation refers to maintaining the beliefs and behaviors that have persisted for generations (Leininger, 1978).

6. Transitional orientation refers to maintaining some of the beliefs and behaviors that have persisted for generations, but also developing some new beliefs and behaviors that are consistent with the current life style (Leininger, 1978).

7. Modern orientation refers to developing the new beliefs and behaviors that are consistent with the current life style (Leininger, 1978).

## Assumptions

Two assumptions were identified prior to the institution of this study. The first assumption was that although some of the student population may not have English as their primary language, the informants do have a functional understanding of the English language and can complete the questionnaire. The second assumption was that the informants would complete the self-reporting questionnaire with valid responses.

## Conceptual Framework

As the prevalence of bulimia has increased during the last decade, health professionals have begun to study this eating disorder in more detail. Theoretical contributing factors have been

identified, but relationships of these contributing factors to the onset and severity of binge eating and bulimic behaviors have not always been measured. The conceptual framework for this study was based on five of the factors which have been identified in the literature. First, bulimic behavior occurs most frequently in women who are adolescents or young adults. However, bulimia also occurs in men. Second, bulimic behavior is more likely to occur in normal to overweight individuals. Third, bulimic individuals demonstrate specific personal psychological traits (low self-esteem, depression, preoccupation with food, and lack of control over eating behavior). Fourth, modern American infatuation with slimness influences the prevalence of bulimic behaviors. Fifth, individuals with bulimic behaviors have a family history of obesity. The prevalence of binge eating and bulimic behaviors and the presence of these five potential risk factors in Native American adolescent populations are unknown.

## Gender, Age, Weight History

The research to date indicates that bulimia is more common in women than in men (Halmi et al., 1981; Mitchell & Pyle, 1985), in fact one study reported eating disorders occurring in a 10-1 ratio for women to men (Andersen, 1986). Investigators have demonstrated that this eating disorder occurs most frequently in adolescents and young adults (Comerci & Williams, 1985; Crowther, Post, & Zaymor, 1985; Johnson et al., 1984; Lakin & McClelland, 1987) and it is thought that adolescents may be highly susceptible

to social pressures to conform to the premise that slimness equals beauty and success.

This eating disorder has been noted to continue for 5 to 10 years or longer before diagnosis (Herzog & Copeland, 1985). In addition, the onset of self-induced vomiting has been reported to occur 1 to 7 years after the onset of the binge eating behavior (Fairburn & Cooper, 1982; Mitchell & Pyle, 1985). Rarely does the bulimic disorder begin after 30 years of age (Pyle et al., 1981). The symptoms of binge eating and bulimic behaviors are more likely to appear in individuals with a history of being normal weight to overweight. Research study data (Fairburn & Cooper, 1982) and clinical findings demonstrated that bulimic individuals are slightly overweight before the onset of bulimia, tending first to restrict their food intake and then to binge and purge (Johnson & Berndt, 1983). Adolescents who eventually become bulimic may be particularly vulnerable to social pressure toward thinness due to a tendency to be heavier than their peers.

## Personal Psychological Traits

Bulimics have reported a loss in ability to have self-control (Gormally, Black, Daston, & Rardin, 1982; Hunt, 1987), and even though they maintain normal weight or their desired weight, all will periodically lose control over their eating. In some situations, if bulimics allow themselves to eat even a small amount of a favorite food, especially a food they consider fattening, a binge occurs as the

bulimics lose the control to stop eating. Therefore, rather than denying hunger, the bulimic gives it excessive importance. Bulimics report a preoccupation with food and the urge to eat (Fairburn & Cooper, 1982; Herzog, 1982; Pyle et al., 1981). They place a high level of importance on food and report that they are always thinking of food, eating and vomiting to such an extent that their everyday activities are impaired.

Bulimic individuals also demonstrate a preoccupation with weight and body image. The individuals commonly report an exaggerated fear of becoming obese and a perception of feeling fat, when they really are not (Fairburn & Cooper, 1982; Garfinkle & Garner, 1982; Pyle et al., 1981). A distorted body image is evident in the bulimics' discrepancy between "normal" weight and desired weight. The weight bulimics indicate as desired weight is below the minimum weight for height.

Bulimic individuals are also preoccupied with dieting. In an attempt to avoid foods they consider fattening or forbidden, bulimics are often in an all-or-none cycle in their eating patterns, alternating between periods of severe dieting or fasting and binge eating. The use of vomiting and laxatives imposes some control after a binge eating episode, but bulimics sense no real power over their own weight and eating patterns. Hawkins and Clements (1980) reported that frequency of binge-eating was highly and positively correlated with the degree of diet concern and with negative physical self-image.

After preoccupation with eating and dieting and with weight and body image, depressive symptoms are frequently noted in bulimics. Fairburn (1980) reported that depressive symptoms in bulimic individuals increased as weight increased or if there was no opportunity to vomit after binge eating. A standard finding in the research literature is that the high level of depression and anxiety in the bulimic is thought to be related to the following: (a) increased eating and the increased fear of gaining weight, (b) anticipated lack of control to stop eating and (c) distorted body image after binge eating (Bruch, 1973; Johnson & Reed, 1982; Mitchell & Pyle, 1985; Weiss & Ebert, 1983). In addition to feelings of anxiety and depression, the bulimic tends to have feelings of guilt, shame, self-contempt, and self-condemnation following binge eating episodes (Bruch; Mitchell & Pyle).

## Family History

A high incidence of dysfunctional families and weight problems in first-degree relatives was reported in the family history of bulimic individuals (Linden, 1980; Strober, 1981; Strober, Salkin, Bourroughs, & Marrell, 1982). Individuals' eating habits and coping skills are learned during childhood from other family members. The importance and value of food are taught through modeling by adults in the family unit. In some cultures, such as Native American, in which obesity is perceived to be a sign of good health, the rate of obesity is high for all age groups (Hunt, 1987;

Marx, 1991; Schultz, 1979). Obesity has been identified as a major health problem for Native Americans of all ages (National Center for Health Statistics, 1986; Schultz, 1979; Wagner, 1988). Adolescents in these Native American groups are vulnerable to social pressure toward thinness and family pressure toward obesity. In an attempt to meet the values of both groups, the adolescent may become involved in the binge-purge cycle.

## Current Values Regarding Body Shape and Size

Nationally, bulimia has been reported to have become more prevalent in the last 10 to 15 years (Brownell & Foreyt, 1986). The modern industrialized American society has an overabundance of readily available food, a pattern of eating at the increasing numbers of fast food chains, and a sedentary life style. In the midst of these, there exists the American society's infatuation with slimness (Marx, 1991; Ritenbaugh, 1982). This cultural ideal of the appropriate body shape in an environment of readily available food requires the adolescent to have strict control of food intake. This results in the adolescent's development of preoccupation with weight gain and loss and the need to develop self-control over his or her eating behavior.

The technology and life style of modern industrialized American society has influenced the life style of Native Americans. In addition, the American society's infatuation with slimness has impacted the Native American cultural ideal of the appropriate body shape, especially with the Native American adolescent population. However, the cultural thought that plumpness is healthy still exists

with middle-aged and elderly adult members (Schultz, 1979; Wagner, 1988). In addition, Leininger (1978) reported that Native American tribal members are increasingly exposed to modern socio-cultural practices, resulting in development of cultural conflict. Tribal norms, values, and roles become unclear causing severe psychological stress for many individuals in the traditional tribal society (Leininger). Furthermore, individuals with high risk personality traits (low self-esteem, depression, lack of self control, poor coping skills) have difficulties coping with the social disintegration and acculturation (Davidson Allen, 1988; DuPont, 1984; Hunt, 1987; Leininger, 1978). Native American adolescents who have difficulties coping with cultural conflict may be more vulnerable to American social pressure toward thinness and the Native American family pressure toward obesity. In an attempt to cope with both groups' expectations, the Native American adolescent may become involved in the binge-purge cycle.

# CHAPTER 2

# LITERATURE REVIEW

## History

Numerous women, and fewer men, are plagued with the binge and purge syndrome of bulimia. During the last two decades there has been an increased awareness concerning pathological eating behaviors. The term bulimia, virtually unknown several years ago, has become familiar both to professionals and to the public. Bulimia is described as a food obsession characterized by repeated binge eating followed by prolonged fasting, excessive exercise, or purging by induced vomiting, abuse of laxatives, enemas, or diuretics. The term bulimia was derived from the Greek word bouslimos meaning ox-hunger or a voracious appetite (Cauwels, 1983).

The symptoms of bulimia have been described throughout history by the ancient Egyptians, who believed monthly purges prevented illness, by the Hebrews, and by the ancient Greeks and Romans, who created vomitoriums for men to purge after overeating at a banquet, then return to eat more (Boskind-White & White, 1986; Cauwels, 1983). Early case reports of bulimic behavior date back to 1874 when anorexia was first described by Gull (cited in Comerci & Williams, 1985). These early anorexia case studies dealt largely with bulimic symptoms such as binge eating (or consuming a large quantity of food in a short period of time) and purging by induced

vomiting. Detailed reports of bulimic symptoms began to appear around 1940. Ludwig Binswanger's report (cited in Comerci & Williams, 1985) was perhaps the earliest and most detailed account of bulimic behavior. In 1944 he described the case of a woman who would be considered bulimic by current diagnostic criteria. The woman demonstrated symptoms of depression, obsessiveness about food, binge eating, use of large quantities of laxatives, and morbid fear of gaining weight.

In the 1950's bulimic behavior among obese individuals was also observed. Hamburger's study (cited in Comerci & Williams, 1985) described obese individuals who demonstrated a compulsive craving for food. Albert Stunkard (cited in Comerci & Williams) was the first to use the term binge eating to characterize a type of pathological eating behavior among obese patients who would consume as many as 20,000 calories in an episode. The overeating episodes tended to be precipitated by upsetting life events, and the binges were followed by self-condemnation and guilt feelings.

Although the symptoms of bulimia continued to appear in studies of weight-disorder patients, it was not until the mid-1970's that reports of bulimic behavior among normal-weight individuals began to appear. While conducting their study in 1976, Boskind-White and White (1986) identified the symptoms of bulimia among a predominantly normal-weight population of young adult women. They coined the term bulimarexia to describe the group. Then in 1979 Gerald Russell (cited in Comerci & Williams, 1985) offered speculations regarding etiology and suggested criteria for the

diagnosis of bulimia. These criteria included: (a) powerful and irresistible urge to overeat; (b) avoidance of the fattening effects of food by inducing vomiting or abusing laxatives or both, and (c) morbid fear of obesity.

Shortly after Russell's description and proposed criteria for bulimia, the American Psychiatric Association (APA) considered bulimia a distinct syndrome and published criteria for the diagnosis of bulimia in the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) (American Psychiatric Association, 1980). As studies continued (Garfinkle & Garner, 1984; Herzog & Norman, 1985; Johnson & Reed, 1982; Wolf & Crowther, 1983), it became apparent that the style of eating behavior was clinically more indicative of bulimia than weight status (i.e. obese, normal weight, underweight). This resulted in the publishing of the DSM-IIIR (American Psychiatric Association, 1987), which based the diagnosis of bulimia on attitudes and style of eating behavior rather than weight status.

A wide range of bulimic behaviors exists in today's culture. Binge eating, dieting, and body dissatisfaction are common among adolescents and young adults. Not everyone with these behaviors is bulimic by DSM-IIIR criteria and needs treatment. Therefore, it is important to assess the individual's attitudes related to bulimic behaviors.

The following attitudes are assessed and incorporated in the diagnosis of bulimia: feeling out of control, helpless, disgusted, and guilty; having fears of obesity; having self-depreciating thoughts;

and being aware that the eating pattern is abnormal (Brownell & Foreyt, 1986; Bruch, 1973; Cauwels, 1983; Yates & Sambrailo, 1984). These attitudes, previous history of morbid obesity and specific behaviors are consolidated in the DSM-IIIR criteria for bulimia diagnosis (Table 1).

Table 1. Revised DSM III Criteria for Bulimia.

A. Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time).

B. A feeling of lack of control over eating behavior during the eating binges.

C. The person regularly engages in either self-induced vomiting, use of laxatives or diuretics, strict dieting or fasting, or vigorous exercise in order to prevent weight gain.

D. A minimum average of two binge eating episodes a week for at least three months.

E. Persistent overconcern with body shape and weight.

Note. From Diagnostic and Statistical Manual of Mental Disorders by American Psychiatric Association, 1987, 68-69.

## Prevalence: Gender, Weight History, Age

Most studies in the literature review have attempted to assess the prevalence of bulimia by using the DSM-III criteria and just recently the DSM-IIIR criteria. Before the last 10 years, bulimia and other eating disorders were thought to occur mostly in women. However, recent studies (Andersen, 1986; Cauwels, 1983; Lakin &

McClelland, 1987; Pyle, Halvorsen, Neuman, & Mitchell, 1986) demonstrated an increasing prevalence in men.

Reports of the prevalence of binge eating in women have ranged from a low of 24% in a family practice adult sample (Edelman, 1981) to a high of 80% in a population of college women (Hawkins & Clement, 1980). Prevalence of binge eating in men has ranged from 5% (Pope et al., 1984) to 60.2% (Halmi et al., 1981). Hawkins and Clement (1980) conducted a survey of 247 psychology students. This study reported 50% of the male students and 80% of the female students admitted to binge eating behavior. However, less than 10% of the participants admitted to vomiting after binge eating episodes. In a later study of college students, Halmi et al. (1981) found reports of binge eating behaviors in 68.1% of the female students and 60.2% of the male students. This same study reported that 19% of the females and 6.1% of the males met the criteria for bulimia, as established in the DSM-III. Mitchell and Pyle (1985) reported in their study of freshman college students that 57.4% of the female students and 41% of the male students admitted to binge eating episodes. However, only 7.8% of the females and 1.4% of the males met the DSM-III criteria for bulimia. These studies demonstrated that binge eating episodes were common in the young adult college population, but only a small number met the established criteria for bulimia.

Studies that have used the DSM-III criteria for diagnosis of bulimia have reported a prevalence rate of 5% in college women (Stangler & Printz, 1980) to 20% of women college seniors (Pope et

al., 1984). Bulimia in men was reported by these same two studies to range from 5% and 0% respectively. The data from these studies demonstrated a wide range for the prevalence of bulimia. One reason for this is the fact that bulimics are generally secretive about their binge-purge behaviors. In addition, the specific criteria (DSM-III or DSM-IIIR) the studies used to determine binge eating and bulimia rates would establish different prevalence rates as the severity of symptoms and duration of symptoms criteria are different.

Halmi et al. (1981) reported that bulimic behaviors tended to occur in students who had a history of being overweight or were at the heavy end of their normal weight range. Johnson, Stuckey, Lewis, and Schwartz (1983) also found that over half of the participants in their study had a history of being overweight. In addition, 34% to 88% of the students in studies by Fairburn (1982) and Johnson and Berndt (1983) reported that the binge-purge cycle began after periods of unsuccessful dieting. Reports of the prevalence of self-induced vomiting ranged from 3% of women in a college study (Zukerman, Colby, Ware, & Luzera, 1986) to 16% of women in a high school population (Johnson et al., 1984). Vomiting in men has been assessed in the range of 1% (Zukerman et al., 1986) to 6% (Halmi et al., 1981).

The average age of individuals with bulimia has been reported to be 24 years, but bulimia has been reported at 11 to 51 years of age (DuPont, 1984; Fairburn & Cooper, 1982; Herzog, 1982; Johnson et al., 1984; Lakin & McClelland, 1987; Pope et al., 1984). Eating problems seem to begin during adolescence, usually between ages 16

and 20. The development of a binge eating pattern has been reported to occur at 1 to 7 years before the development of self-induced vomiting behavior (Fairburn & Cooper; Herzog & Copeland, 1985; Lakin & McClelland; Pyle et al., 1981; Schotte & Stunkard, 1987).

## Bulimic Behaviors

Bulimia is marked by episodic binge eating that may occur from once a day to as often as five times a day. These binges are followed by induced vomiting (purging) to allow eating to continue until abdominal pain, sleep, or the presence of another person interrupts it (Bruch, 1973; Cauwels, 1983; Edelman, 1981; Fairburn, 1980; Gormally, 1984). During the binge eating episodes people with bulimia tend to consume high carbohydrate or high fat foods that are easy to eat and that do not require much preparation or chewing. Commonly eaten foods include ice cream, bread or toast, candy, pastries and soft drinks (Bruch; Cauwels; Fairburn & Cooper, 1982; Halmi et al., 1981; Herzog & Copeland, 1985). Some individuals frequently binge eat foods that they avoid at other times because they fear their high calorie content. Other individuals simply turn a regular meal into a binge by enlarging the amount of food to be eaten (Bruch; Cauwels; Fairburn & Cooper).

Studies have reported that during an average binge eating episode the bulimic consumes about 4,000 calories, but the range is from 2,000 to 55,000 calories (Cauwels, 1983; Fairburn & Cooper, 1982; Gormally, 1984; Halmi et al., 1981; Herzog & Copeland, 1985).

Bulimic individuals have been reported to binge eat at any time of the day, but they tend to do so late in the day when they return home from work or school (Bruch, 1973; Cauwels). Most individuals reported that they eat very rapidly during a binge, without really tasting the food (Cauwels; Fairburn, 1980). Studies have reported a typical binge eating episode appears to last less than 2 hours, with a range of 15 minutes to 12 hours (Cauwels; Fairburn & Cooper; Halmi et al.; Pyle et al., 1981).

Bulimic individuals have indicated they commonly fast for prolonged periods when not binge eating, in an attempt to compensate for excess calorie intake during a binge eating episode (Brownell & Foreyt, 1986; Bruch, 1973; Cauwels, 1983; Herzog, 1982). They may eat only small amounts at other times or skip a meal or two during the day (Bruch; Cauwels; Herzog). A group of studies investigated prevalence of binge eating and bulimic behaviors in relationship to dieting behaviors and food and weight control attitudes (Cauwels; Dickstein, 1985; Fairburn & Cooper, 1982; Halmi, et al., 1981; Johnson & Berndt, 1983; Pyle et al., 1981; Stangler & Printz, 1980). Several studies found that the binge-purge cycle began after episodes of unsuccessful dieting (Cauwels; Johnson & Berndt). In one study, 29 of 34 bulimics were reported to alternate between periods of binge eating and severe dieting or fasting (Pyle et al., 1981).

Most bulimics induced vomiting, abused laxatives, or abused diuretics in an attempt to prevent weight gain from excessive calorie intake or to promote weight loss (Gormally et al., 1982;

Herzog & Copeland, 1985; Johnson et al., 1983; Mitchell & Pyle, 1985). The vomiting behavior becomes tied to the binge eating. About 20% to 40% of individuals with bulimic behaviors reported abusing laxatives at least once a week for weight control purposes, and a slightly less than that reported using diuretics (Cauwels, 1983; Fairburn & Cooper, 1982; Halmi et al., 1981; Pyle et al., 1981).

## Psychodynamics of Bulimia

The exact cause of bulimia is unknown, but various psychosocial factors are thought to contribute to its development. Such factors include maladaptive learned behavior and cultural overemphasis on physical appearance (Agras & Kirkley, 1986; Garfinkle & Garner, 1982; Herzog, 1982; Johnson & Reed, 1982). Several investigators have noted that bulimic individuals are likely to be depressed and to show a greater incidence of problems with impulse control, such as kleptomania and alcoholism (Johnson & Berndt, 1983; Pyle et al., 1981; Stangler & Printz, 1980; Stern, Dixon, & Nemzer, 1984; Weiss & Ebert, 1983).

Studies reporting standardized psychiatric measures have revealed that bulimics have high scores on depression and anxiety scales (Fairburn & Cooper, 1982; Pyle et al., 1981). Herzog (1982) found that 75% of the individuals in his study reported significant depressive symptoms. Killen et al. (1987) reported that over 40% of the bulimics and purgers in their study had symptoms of depression that met the DSM-III criteria for major depressive disorder and

anxiety was noted in several studies with bulimic individuals (Fairburn & Cooper; Pyle et al., 1981). Rosen and Leitenberg (1982) suggested that the binge eating and vomiting cycle may be linked to anxiety (fear of gaining weight) in so far as the anxiety resulting from binge eating is reduced by vomiting. Two other studies have associated anxiety with the bulimic's fear of lack of control (Palmer, 1979; Rau & Green, 1975).

Several studies also reported that bulimics have feelings of guilt, shame, and self-contempt after a binge (Fairburn, 1980; Herzog, 1982; Pyle et al., 1981; Rau & Green, 1975; Wermuth, Davis, Hollister & Stunkard, 1977; White & Boskind-White, 1981). In a study of overweight binge eaters, 23% of the individuals acknowledged feeling a complete lack of control in preventing and/or stopping a binge episode. This lack of control was reported to result in feelings of guilt and self-hate (Gormally et al., 1982). Cauwels (1983) reported that bulimic individuals identified overeating as a submission to some compulsion to do something they do not want to do. Cauwels stated that bulimics were terrified by the loss of control during their eating binges. This resulted in feelings of guilt and fear of weight gain, which led to the beginning of the purge episode. Casper, Eckert, Halmi, Goldberg & Davis (1980) found that bulimics used binge eating to lessen the feelings of depression, guilt, or anxiety. Casper et al. maintained that binge eating followed by self-induced vomiting is a complex defense mechanism in which food is used to relieve disturbed impulse control and guilt feelings and to avoid or solve problems.

Several studies reported that bulimic individuals have an exaggerated fear of becoming obese and a perception of feeling fat when they are not (Fairburn & Cooper, 1982; Garfinkle & Garner, 1982; Pyle et al., 1981). A distorted body image was evident by the discrepancy in the bulimic's indication of what was a normal healthy weight and the bulimic's desired weight (Pyle et al., 1981). Besides wanting to weigh less than their actual weight, the bulimics in two studies indicated a desired weight below the minimum weight for their height (Fairburn & Cooper; Pyle et al., 1981).

## Social-Cultural Aspects of Bulimia

The modern American cultural pressure toward slimness has been thought to contribute to the incidence of bulimia, as well as to other eating disorders (Dickstein, 1985; Dupont, 1984; Marx, 1991). Until the 1930s moderate plumpness was an ideal female form and reflected an image of fertility, health, and ability to survive (Ritenbaugh, 1982). Then in the early 1930's, following the flapper era, the American society began to see slenderness as stylish. Marx reported that each year the ideal body image has been getting thinner, but the average weight of the population has increased over the same period of time. The current American culture views overweight as detrimental to health and well being. Marx described the modern American society's perspective toward overweight and obesity as "thin wins" and "fat is failure." (p. 30)

Ritenbaugh (1982) and Davidson Allen (1988) discussed the anthropologists' view that obesity is a cultural issue, with the attitudes about fatness and thinness reflecting the dominant cultural values. In the past and present Native American society, moderate plumpness has been seen as healthy and a sign of prosperity (Lowie, 1954). Bruch (1973) maintained that food is connected to society's complex values systems, such as religious beliefs and prestige systems. Social and group gatherings are usually centered around food, which gives eating habits and traditions their special cultural meaning. Agras and Kirkley (1986) stated that strong religious and cultural forces affect the prevalence of eating disorders, such as bulimia. Comerci and Williams (1985) maintained that fasting and purging are not new practices of modern society. They concluded that a majority of religions and philosophies encouraged fasting and suffering as a means of absolution and obtaining forgiveness; thus self-denial has been equated with goodness and worthiness. Lowie (1954) and Schultz (1979) discussed how fasting is a major part of various Native American rituals, such as vision quest, sun dance and Tobacco Society ceremonials.

There have been limited data which describe binge eating and bulimic behaviors in the various socio-cultural groups within the American society. Data from the present study contributed to a better understanding of the eating behaviors in one small specific cultural group, a Northwest Plains Native American adolescent population.

# CHAPTER 3

# METHODOLOGY

The purpose of this chapter is to describe the methods that were employed in the study. Included are discussion of the design, setting, sample, instrument, protection of human subjects, procedure and data analysis.

## Design

An exploratory, descriptive study was used to determine the prevalence of binge eating and bulimic behaviors in a Northwest Plains Indian tribe. This design was appropriate for the purpose of this study, as there is no known past research to identify prevalence and characteristics of binge eating and bulimic behaviors in the Native American population.

## Setting

The study setting was a high school located within the boundaries of the reservation. The high school had 197 enrolled students in grades 9 to 12. The Indian Health Service School Census (1993) showed 99% of the student population were Native American students. This study was conducted during the second semester of the 1992-1993 school year.

## Sample

The sample consisted of Native American individuals, 14 to 19 years of age, who lived on the reservation of a Northwest Plains Indian tribe. Criteria for the participants included the following: (a) 14 to 19 years of age; (b) residence within the boundaries of the reservation; (c) enrollment in the tribe or have at least one parent who is enrolled; (d) enrollment as student at one of the reservation high schools; (e) ability to read, write, and comprehend the English language. The sample consisted of all who were willing to participate in the study, whose parents returned a signed consent form, and who met the participant criteria. The decision to use this sample was made because of the data available in the literature review indicating this age group has a high prevalence for binge eating and bulimic behaviors.

## Instrument

The Eating Behaviors And Weight Control Survey (Lakin & McClelland, 1987) was used in this study to measure the prevalence and characteristics of binge eating and bulimic behaviors for students 14 to 19 years of age. Nine of the items in the questionnaire constitute the Binge Scale (Hawkins & Clement, 1980). The investigator added the last five questions to determine the students' tribal enrollment status and the students' perception of traditional or nontraditional beliefs. Permission was obtained from

both Lakin and Hawkins to use the instrument in this study (Appendix A). The survey instrument measured behavioral and attitudinal aspects of binge eating, bulimic tendencies, eating practices, and perceptions of food and weight control (Appendix B). Convergent validity of the Binge Scale was established by factor analysis (Hawkins & Clement) in which 71% of the variance was accounted for by one factor representing concern and guilt about binge eating. The internal consistency of the Binge Scale was .68 (Cronbach's alpha) and test-retest reliability was .88 (Hawkins & Clement). This instrument, which can be used as a self-reporting tool, was completed in 20 minutes.

## Procedure

Permission to conduct the study was requested from the Tribal Chairwoman and the Service Unit Director for Indian Health Service by means of a written abstract and verbal explanation of the study (Appendix C). After permission was granted, the investigator met with the superintendent and school board of the high school for permission to conduct the study in the school (Appendix D). After obtaining permission, the investigator mailed letters to the parents of students who met the criteria for the study, explaining the study and requesting that signed consent forms be returned if the parents agreed to have their child participate in the study (Appendix E). In addition to the letter, the investigator provided a stamped addressed envelope for the parents to return the signed consent form to the

investigator. Contact with the teachers was made to gain their cooperation for the study to be conducted in the classroom.

Before administering the student consent letters and questionnaires to the students with parental permission, the investigator explained the study, which included a definition of terms and who to contact if any questions, concerns or problems developed during or after completion of the questionnaire. The investigator also read the participant consent letter to the students to ensure the students understood the consent letter (Appendix F).

Two unmarked envelopes were provided with each student consent letter and questionnaire. If the students wished to participate in the study, they were instructed to place the signed consent form and the completed questionnaire in separate envelopes. After sealing the envelopes, the students returned them to the investigator by placing them in separate collection boxes in the front of the room. If the students chose not to participate, they were instructed to place the blank consent form and blank questionnaire in the two separate unmarked envelopes, seal the envelopes, and place them in the two separate collection boxes. The investigator had no contact with the questionnaires or consent forms in the collection boxes until the end of the school day. The students whose parents did not return a consent to participate in the study were given class evaluations to complete while participating students completed the questionnaires.

## Protection of Human Subjects

Informed consent was obtained from all participants and their parents. The requirements for protection of human subjects were met prior to the initiation of this project. Approval by the Montana State University Human Subjects Review Committee and the Montana State College of Nursing Human Subjects Review Committee was obtained. Consent for the research project was also obtained from the tribe and the school.

## Data Analysis

The Binge Scale questions in the survey were scored according to the standard Binge Scale Score Sheet. The Binge Scale score data were analyzed by the use of descriptive statistics. The remaining questionnaire variables were tabulated and analyzed by descriptive statistics and t-tests.

# CHAPTER 4

## FINDINGS

The purpose of this study was to describe the patterns of binge eating and bulimic behaviors in an adolescent population in a Northwest Plains Indian tribe. The findings of the study will be presented in two sections in this chapter. The first section provides a demographic description of the sample. The second section addresses the findings related to the 10 research questions.

### Demographic Data

The target population for this study consisted of 197 9th through 12th grade students who attended a high school within the boundaries of a Northwest Plains Indian reservation. Requests for parental consent letters were sent to the parents of all enrolled high school students. A total of 126 parental consents were returned, for a response rate of 64%. However, 7 students were absent during the time the study was conducted, and 10 questionnaires were returned blank or partially completed. This resulted in 109 completed questionnaires used for the study.

Forty-nine (45%) of the participants were women and 60 (55%) were men. The ages ranged from 14 to 19 years, with a mean age of 16.07 years and a mode age of 16 years (Table 2). Grades ranged

from 9 to 12, with a mean grade of 10.1 and a mode grade of 9 (Table 3).

Table 2: Age and Gender Distribution.

| Age | No. Women | No. Men | Total for age |
|---|---|---|---|
| 14 years | 4 (3.6%) | 8 (7.3%) | 12 (10.9%) |
| 15 years | 20 (18.4%) | 9 (8.3%) | 29 (26.7%) |
| 16 years | 15 (13.8%) | 17 (15.6%) | 32 (29.4%) |
| 17 years | 5 (4.6%) | 12 (11.0%) | 17 (15.6%) |
| 18 years | 4 (3.6%) | 10 (9.2%) | 14 (12.8%) |
| 19 years | 1 (1.0%) | 4 (3.6%) | 5 (4.6%) |
| Total | 49 (45%) | 60 (55%) | 109 (100%) |

Table 3: Grade Distribution.

| Grade | No. Participants | Percent of Sample |
|---|---|---|
| 9 | 37 | 33.9% |
| 10 | 32 | 29.4% |
| 11 | 28 | 25.7% |
| 12 | 12 | 11.0% |

Seven (6%) participants reported current health problems, including asthma (3) and allergies (4). Only one student reported a

previous history of receiving counseling or medical care for an eating problem.

All participants reported being enrolled (106) or having at least one parent enrolled (3) in an Indian tribe. A total of 73 (67%) of the participants reported having the ability to speak their tribal language. In addition, 29 (27%) reported that they spoke only their tribal language in their homes, while 46 (42%) spoke their tribal language and English language, and 34 (31%) spoke only English in their homes. A majority of students, 89 (82%), reported they practice tribal religion/customs such as: sweat baths, sun dance, clan uncle, medicine man, arrow tournaments, Native American church. To determine the students' self identified cultural orientation, the students were provided the definitions for traditional, transitional, and modern as described by Leininger (1978). In response to the question concerning the participants' self perceived cultural orientation, 44 (40%) participants viewed themselves as transitional, while 34 (31%) reported themselves to be of traditional orientation, 15 (14%) responded with modern orientation and 16 (15%) were undecided.

## Binge Eating Behaviors

Students were requested to indicate their binge eating behaviors. The students had been instructed that binge eating was defined as episodes of consuming great quantities of food in a short period of time. While 67 (61%) of the participants stated they did

not binge eat, 42 (39%) did report binge eating episodes. The age groups with the most students reporting binge eating behaviors were the 15-year-old for women and the 16-year-old for the men. The age groups with the lowest reported binge eating behaviors were 17- and 19-year-old women and 15-year-old men (Table 4).

Table 4. Prevalence of Binge Eating Behaviors.

| Age | Women (n=49) | Men (n=60) | Total (n=109) |
|---|---|---|---|
| 14 years | 4 | 8 | 12 |
| Binge eaters | 2 (50%) | 3 (37.5%) | 5 (41.6%) |
| 15 years | 20 | 9 | 29 |
| Binge eaters | 9 (45%) | 2 (22%) | 11 (37.9%) |
| 16 years | 15 | 17 | 32 |
| Binge eaters | 8 (53%) | 6 (35%) | 14 (43.7%) |
| 17 years | 5 | 12 | 17 |
| Binge eaters | 1 (20%) | 5 (42% ) | 6 (35.2%) |
| 18 years | 4 | 10 | 14 |
| Binge eaters | 2 (50%) | 3 (30%) | 5 (35.7%) |
| 19 years | 1 | 4 | 5 |
| Percent for age group | 1 (100%) | 0 | 1 (20.0%) |

The age of onset of binge eating behavior was reported from younger than 10 years to 15 years of age or older. A majority of the binge eating students, 32 (76%), indicated they began binge eating between 10 to 14 years of age. In addition, 5 (12%) stated they began binge eating younger than 10 years of age, and 5 (12%) stated they began at 15 years of age or older.

The frequency of the binge eating episodes was described by 10 (53%) of the binge eating men and 13 (57%) of the binge eating

women to occur 1 to 2 times per month. However, 3 students (women-2, men-1) reported that the binge eating episodes occurred almost every day. In addition, 8 women and 4 men reported once a week binge eating episodes. The length of the binge eating event was reported by 17 women and 14 men (74% of the binge eating students) to be 15 minutes to 1 hour. The remainder of the students, 6 women and 5 men, described their binge eating episodes to be 1 to 4 hours in length (Table 5).

Table 5. Description of Binge Eating Behaviors.

| Characteristics | Number | Percent |
|---|---|---|
| Onset of Binge Eating: | | |
| Less than 10 years | 5 | 12% |
| 10 to 14 years | 32 | 76% |
| 15 years or older | 5 | 12% |
| Frequency of Binge Eating: | | |
| Seldom | 4 | 9% |
| Once or twice a month | 23 | 55% |
| Once a week | 12 | 29% |
| Almost daily | 3 | 7% |
| Length of Binge Eating: | | |
| Less than 15 minutes | 0 | 0% |
| 15 minutes to 1 hour | 31 | 74% |
| 1 hour to 4 hours | 11 | 26% |
| Greater than 4 hours | 0 | 0% |

In response to the statement describing the determinant to cessation of binge eating, 23 students reported binge eating until their stomachs felt full. Eight participants indicated they stopped binge eating when their stomachs felt painfully full, and 6

participants stopped when they couldn't eat anymore. When asked to describe their eating behavior when binge eating, 30 (71%) of the binge eaters replied they ate about the same as usual. In comparison, 5 responded they ate slower than usual and 7 indicated they ate very rapidly. In addition, 23 (55%) binge eating students reported they ate any type of food that was handy when binge eating. Only 2 students stated they craved a particular type of food ("junk food"), while 17 related eating high calorie foods that they would not otherwise eat.

The students were requested to indicate when they binge eat and the circumstances that were associated with or preceded an episode of binge eating. Twenty-two (52%) binge eating students indicated that their binge eating was associated with being around other people. However, 17 (40%) reported they binge eat only when they are alone. Three (8%) students stated they made sure no one knew they were binge eating. A majority of binge eating students, 22 (52%), related that the binge eating episodes were not really associated with any particular thing. However, when describing circumstances preceding a period of binge eating, 13 indicated school was not going well, 10 reported having problems with friends, 6 responded that they had problems with relationships with family members, 6 stated that the family was experiencing disruptions, and 6 reported going off a strict diet. The total number of responses were more than 42 as the students were instructed to indicate all that applied and many had more than one response.

For the study sample (n=109) 23 women and 19 men reported binge eating episodes. Of the 42 students reporting binge eating episodes 21.1% were women and 17.4% were men. When the rate for each gender group was analyzed separately, 46.9% of the women and 31.7% of the men reported binge eating episodes.

In addition, 16 (47%) of the 34 students who indicated they were of traditional orientation reported binge eating episodes. Eight (53%) of the 15 students who indicated they were of modern orientation reported binge eating episodes. Although the number of students who reported traditional orientation were more than double the number who reported modern orientation, both groups were a small segment of the total sample. Additionally, 17 (38.6%) of the 44 students who indicated they were of transitional orientation reported binge eating episodes.

## Bulimic Behaviors

Bulimia is defined as an eating disorder characterized by frequent uncontrolled binge eating and then purging of food. In the previous section the findings concerning binge eating behaviors were discussed. This section will present data concerning purging behaviors and the students' attitudes toward food and weight control. The various purging methods evaluated during this study were induced vomiting, use of diuretics and/or laxatives, vigorous exercise and restrictive diets. Purging behaviors were only reported by the 42 students who also indicated binge eating episodes.

Induced vomiting was reported by 17 (40%) students (11 women, 6 men) to occur sometimes after a binge. Only one woman student responded to using diuretics sometimes after binge eating, and two women indicated they sometimes used laxatives after a binge episode. Twenty (48%) students stated they sometimes exercise vigorously after a binge (12 women, 8 men), while 6 reported usually exercising vigorously and only 1 indicated always vigorously exercising after a binge.

The use of highly restrictive diets to control weight was reported only by the 42 students who also reported binge eating episodes. Six (14%) students indicated occasionally putting themselves on a highly restrictive diet and one (2%) reported almost constantly being on a highly restrictive diet for weight control. A majority of the students, 35 (84%), responded they frequently put themselves on a highly restrictive diet for weight control. Of the participants, 35 (84%) responded they fast (go without food) for a period of time as part of their highly restrictive diet (22 women, 13 men). The total hours of fasting ranged from 2 hours to 72 hours, with the median of 10 hours and the mode of 8 hours (Table 6).

Table 6. Hours of Fasting During Restrictive Diet.

| Hours | Women | Men | Total | Percent |
|---|---|---|---|---|
| 1-8 | 12 | 5 | 17 | 48.6% |
| 9-16 | 6 | 4 | 10 | 28.6% |
| 17-24 | 3 | 4 | 7 | 20.0% |
| >24 | 1 | 0 | 1 | 2.8% |
| Total: (n=35) | 22 | 13 | 35 | 100.0% |

To determine the students' attitudes toward food and weight control, several questions focused on the students' perceived body image, the importance of food, and feelings concerning their binge eating behaviors. To determine the students' possible dissatisfaction with their weight, the students' actual weight classifications and students' perceived weight classifications were assessed. Self-reported height and weight data were used to determine the probable weight classification for the participants.

All students were assumed to be of medium frame to utilize the established height and weight tables (Appendix G). Individuals were considered overweight if current weight was greater than 110% of weight for height and underweight if less than 85% of weight for height. Ten (9%) of the students were overweight, 65 (60%) were normal weight, and 16 (15%) were underweight. The investigator was unable to determine weight classification for 18

(16%) students as the students indicated they did not know their current weight and/or height (Table 7).

Table 7. Weight Classification with Current Weight and Height.

| Weight Classification | Women | Men | Total | % |
|---|---|---|---|---|
| Overweight (>1.10) | 3 | 7 | 10 | 9.0% |
| Normal Weight | 30 | 35 | 65 | 60% |
| Underweight (<.85) | 8 | 8 | 16 | 15% |
| Wt and Ht Unknown | 8 | 10 | 18 | 16% |
| (n=109) | | | | |

To determine the students' perceived weight classification, the crude index measure of ideal weight (Lakin & McClelland, 1987) was utilized. If the student's ideal weight was less than 100% of current weight (determined by dividing the ideal weight by the current weight), the student was determined to have a self perceived body image of being overweight. Fifty-three (49%) of the participants perceived themselves to be overweight, but only 8 (15% of the 53) were actually overweight when assessed with the weight to height tables. Although 53 students' ideal weight was less than their current weight, only 48 (44%) students reported they had a weight problem and were overweight. In addition, all 42 of the students who reported binge eating perceived themselves to be overweight (Table 8). In addition, 43 (39%) of all participants (n=109) stated they had at least one family member who was overweight. Fifteen (35.7%) of the binge eating students (n=42)

reported having one family member who was overweight and 7 (16.7%) indicated both parents were overweight.

Table 8. Ideal Weight Compared to Current Weight for Binge Eating Students.

| Characteristics | Women | Men | Total |
|---|---|---|---|
| Perceived Overweight. | 23 (54.7%) | 19 (45.3%) | 42 |
| Current Weight Classification | | | |
| Overweight | 3 (13%) | 2 (11%) | |
| Normal weight | 17 (74%) | 14 (74%) | |
| Underweight | 3 (13%) | 3 (15%) | |

Several attitudinal factors were involved in bulimic behaviors. The students (n=109) were requested to indicate the importance of food compared to their other interests. Twenty-three (21%) men and 16 (14.6%) women reported food was important compared to other interests. Also, 18 (16.5%) men and 22 (20%) women responded that food was no more important than their other interests. Thirteen (11.9%) men and 8 (7.3%) women reported that food was less important to them than their other interests. However, 6 (5.5%) men and 3 (3%) women indicated food was very important compared to other interests. For those 42 students who indicated episodes of binge eating, 19 (45.5%) women and 13 (30.9%) men reported food was important compared to other interests. In addition, 3 (7.1%) women and 6 (14.2%) men indicated food was very important to them compared to their other interests. One woman binge eater reported that food was no more important to her than her other interests.

One of the attitudinal factors associated with bulimic behavior is the concern with unwanted thoughts of food or eating. Twenty-five (59.5%) of the binge eating students reported that they were occasionally bothered by unwanted thoughts of food or eating. Seven responded that they were frequently bothered by unwanted thoughts of food and 3 reported that they were almost constantly being bothered by unwanted thoughts of food or eating.

Several questions focused on the feelings of lack of control over binge eating episodes and feelings resulting from binge eating. The following responses are only for the 42 students (men and women) who reported binge eating episodes. Sixteen students (38%) reported that they were not bothered by their binge eating episodes (10 men, 6 women). An additional 38% (7 men, 9 women) reported that they were bothered a little by their binge eating. However, 3 women indicated they were moderately concerned, and 7 (2 men, 5 women, or 16.7%) reported their binge eating was a major concern to them. When requested to indicate their feelings of control during a binge, 25 (15 men, 10 women, or 59.5%) reported that they could control the eating if they chose. Eleven (4 men, 7 women, or 26.2%) indicated they had some control over their eating, while 6 (14.3%) women reported that they felt completely out of control.

Students who reported binge eating also reported how they felt after their binge eating episodes. Nineteen students (13 men, 6 women, or 45.2%) reported they did not feel depressed after a binge. In addition, 10 students (4 men, 6 women, or 23.8%) indicated they felt mildly depressed after a binge episode, 7 students (1 man, 6

women, or 16.7%) reported that they felt moderately depressed, and 6 students (1 man, 5 women, or 14.3%) responded they felt very depressed after a binge eating episode.

Binge Scale Scores

The Binge Scale is a tool that can be used to determine an individual's tendencies and risk level for diagnosis of bulimia. The students' (n=109) responses were rated utilizing the Binge Scale Score. The students' actual number score ranged from 0 to 17 (women 0 to 17, men 0 to 15). The women had a higher mean score (8.43) than the men (5.0). A t-test indicated a highly significant difference between the women and the men ($t=2.73$, $p$ value=.009). The scores were rated according to the quantified ranges of severity as developed by Wolf and Crowther (1983). A total of 67 students had 0 for a binge scale score. The remaining 42 students (38.5%) had scores rated from mild to high bulimic tendencies (Table 9).

Table 9. Students' Binge Scale Score.

| Binge Scale Score Range | Women | Men |
|---|---|---|
| No Bulimic Tendencies (score = 0) | 26 (23.8%) | 41 (37.6%) |
| Mild Bulimic Tendencies (score 1 to 5) | 7 (6.4%) | 13 (11.9%) |
| Moderate Bulimic Tendencies (score 6 to 9) | 5 (4.5%) | 4 (3.6%) |
| High Bulimic Tendencies (score 10 or more) | 11 (10%) | 2 (1.8%) |
| Total | 49 (44.7%) | 60 (54.9%) |

Participants were designated as bulimic by using the DSM-IIIR criteria and the symptom severity levels established by Hawkins and Clement (1980) in the Binge Scale (score of 10 or more). With the Binge Scale criteria, 15 (13.7%) participants (11 women, 4 men) were classified as bulimic. Their mean age was 15.8 and a modal age of 16. When the DSM-IIIR criteria for bulimia (which requires weekly binge episodes) were applied, only 6 (5.5%) participants (5 women, 1 man) were classified as bulimic.

# CHAPTER 5

# DISCUSSION AND CONCLUSIONS

The purpose of this study was to describe the patterns of binge eating and bulimic behaviors in an adolescent population in a Northwest Plains Indian tribe. This study was an exploratory, descriptive study which used a questionnaire to assess the binge eating and bulimic behaviors of a high school population. The sample consisted of 109 participants who had parental consent to participate in the study. The study was conducted in the classrooms in a high school located within the reservation boundaries of a Northwest Plains Indian tribe. This chapter interprets the findings and compares them with results from previous studies related to adolescent binge eating and bulimic behaviors. The chapter also discusses the study limitations, implications for nursing practice, and recommendations for future research.

## Discussion

The results of this study indicated that 39% of the students (n=109) surveyed reported binge eating. This overall percentage is lower than the percentages of adolescent students who reported binge eating in previous studies, ranging from 46% to 87% (Crowther et al., 1985; Killen et al., 1987). In addition, the percentages for weekly (11%) and daily (2.7%) binge eating were lower than the

ranges for weekly (21% to 24%) and daily (4.9% to 10.4%) binge eating reported in previous studies (Crowther et al., 1985; Johnson et al., 1984; Lakin & McClelland, 1987). The differences in these percentages may be explained by the use of different items measuring binge eating in previous studies. The differences in these percentages may also be explained as the indirect result of the lower economic status of this Native American population. The National Center of Health Statistics (1986) reported the average family income level to be at the lower income or poverty level. Therefore, the ability to purchase or obtain food items for a binge may be limited for this Native American adolescent population. It also seemed possible that the prevalence for binge eating may be lower for this Native American adolescent population as a result of unknown cultural factors.

The data from this study agreed with data from previous studies that women have a higher prevalence rate for binge eating than men. This study indicated 46.9% of the women participants (n=49) reported binge eating episodes compared to 31.7% of the men participants (n=60). In previous studies the women were reported to have a higher prevalence rate than men, with the differences in the rates ranging from 8% to 26% (Dupont, 1984; Halmi et al., 1981; Killen et al., 1987; Lakin & McClelland, 1987). Previous studies have postulated binge eating and bulimic behaviors to be more prevalent in women than men because there is greater social pressure on women to be thinner and to attain the ideal body shape (Boskind-White & White, 1986; Crowther et al., 1985; Marx, 1991). In

addition, a previous study reported that women are predisposed to binge eating and bulimic behaviors for biological reasons (Wardle & Beinart, 1981). The present study also found a highly significant difference in the prevalence rate for binge eating behaviors between the women and the men (t=2.73, p value=.009). However, the findings from this study did not enable the investigator to postulate a reason for the higher prevalence of binge eating behavior in women compared to men.

The age of onset for binge eating episodes in this sample ranged from younger than 10 years to 15 years of age with a majority of both men and women students (76%) reporting binge eating episodes beginning between 10 and 14 years of age. Lakin and McClelland (1987) also reported that a majority of their adolescent sample (55%) indicated that binge eating episodes began between 10 and 14 years of age. This finding was important because the latter was the only study found in the literature to be conducted with both genders in an adolescent population.

The data for age of onset for binge eating episodes in two studies conducted with adolescent women (only) indicated the average age to be 15 to 19 years of age (Crowther et al., 1985; Johnson et al., 1984). The difference in the reported age of onset may be explained by the utilization of different instruments which have different questions assessing the onset of binge eating. The majority of previous studies with adolescent and college populations were conducted with one gender (women) (Crowther et al.; Halmi et al., 1981; Johnson et al., 1984; Pyle et al., 1986). This

provided limited data available to compare the findings from the present study and previous studies concerning the age of onset for binge eating for adolescent men.

This study's findings did agree with the literature data that indicated binge eating behaviors occur most frequently in women who are adolescent or young adults. As modern American society's infatuation with slimmess influences the Native American society, a cultural conflict develops. In an attempt to cope with American social pressure toward thinness and Native American family pressure toward obesity, some Native American adolescents may become involved in the binge-purge cycle. In addition, this study's reported lower age of onset may be the result of unknown cultural factors.

The frequency of the binge eating episodes was described by 55% of the binge eating students (10 men, 13 women) to occur 1 to 2 times per month. In addition, 12 binge eating students reported binges to occur weekly and 3 reported the binges to occur daily. In addition, the findings concerning 1 to 2 monthly binge eating episodes are higher than the rates reported by Crowther et al. (1985) and Lakin and McClelland (1987) in their studies conducted with adolescent populations. However, the percentages for the occurrence of weekly or daily binge eating episodes are within the percentages reported by Crowther et al. and Lakin & McClelland in their studies. Although the findings from this study suggested a lower prevalence rate for binge eating, the findings indicated a

higher rate for 1 to 2 monthly binge eating episodes for those who binge eat compared to the rates for binge eaters in other studies.

The length of the binge episodes were reported by the binge eaters in this study to last from 15 minutes to 1 hour (74%) and from 1 to 4 hours (26%) in duration. These percentages are within the ranges described in previous studies (Cauwels, 1983; Fairburn & Cooper, 1982; Halmi et al., 1981; Lakin & McClelland, 1987; Pyle et al., 1981). It is important to identify the frequency and duration of binge eating episodes as bulimia has been described by Hawkins and Clement (1980) as a progressive eating disorder from short binge eating episodes, to longer binge eating episodes, to the occurrence of the gorging-purging cycle. The findings from this study suggested a majority of the binge eaters are in the early stages in the development of the gorging-purging cycle as described by Hawkins and Clement. This was evident with 55% of the binge eaters reporting binge eating infrequently (1 to 2 times per month) and 74% reporting binge episodes that last 15 to 60 minutes.

The findings from this study provided data concerning the characteristics of eating behaviors when binge eating. The data were provided by the 42 students who reported binge eating episodes. A majority (30) of the binge eaters indicated they ate at about the same pace as usual during a binge, and 7 reported eating very rapidly during a binge. This finding is comparable with the data from a previous study that reported only 10% of the binge eaters ate very rapidly during binge eating episodes (Kagan & Squires, 1984). A little more than half of the binge eating students (55%) reported

that they ate any type of food that was handy during a binge episode. In addition, 40% of the binge eating students indicated that during a binge they ate high calorie foods that they would not normally eat. These findings are comparable with the data from previous studies in the literature which reported individuals ate high calorie, forbidden foods during binge eating episodes (Dupont, 1984; Lakin & McClelland, 1987; Pyle et al., 1981). The data from this study also were comparable to the data from previous studies that reported some binge eaters very rapidly consumed any type of food handy during a binge, while others simply turned a regular meal into a binge by enlarging the amount of food eaten and consuming these larger portions at their normal pace for eating (Bruch, 1973; Cauwels, 1983; Herzog & Copland, 1985). These findings suggested that the binge eating behaviors present in this study's sample are similar to the previously described characteristic eating behaviors during binge eating episodes.

The binge eating students were requested to indicate when they binge eat and the circumstances that are associated with or precede an episode of binge eating. A little more than half (52%) of the binge eating students reported that they binge eat when they are around other people, 40% reported that they binge eat only when they are alone, and 8% stated they made sure no one knew they were binge eating. The finding that 52% of the binge eaters binge eat around other people was a significant finding. Previous studies reported binge eating and bulimic behaviors to be secretive behaviors (Brownell & Foreyt, 1986; Comerci & Williams, 1985; Gormally,

1984; Herzog & Copeland, 1985; Mitchell & Pyle, 1985). There were no data from this study that indicated why this finding occurred. However, it may be speculated that this was an indication of an early stage in the severity continuum of binge eating. Also, this tribe's custom of having large feasts at any social gathering, from family birthday parties to community gatherings, may have provided a precipitating factor or opportunity to binge eat, as foods are easily accessible and large quantities of food are available. In addition, the individuals attending a social gathering are expected to eat a large amount of all foods provided by the host family.

A little more than half (52%) of the binge eating students indicated that the binge eating episodes were not associated with or connected to any circumstances or events. Forty-eight percent of the binge eating students in this study reported several circumstances when describing what preceded a binge eating episode (school was not going well, students were having problems with relationships with their friends or family members, and the family was experiencing disruptions). Bruch (1973) described binge eaters in whom the problem of binge eating was related to a strong desire to eat without any sense of hunger. In addition, a previous study reported that "emotional binge eating" was more widespread than the binge-purge syndrome (Kagan & Squires, 1984). The questionnaire utilized for the present study did not provide data to enable the investigator to determine what percent of binge eaters may be "emotional binge eaters" and what percent were in the various stages of the binge-purge syndrome. In addition, six binge