Results of an After School Weight Loss Program for Secondary-Level Hispanic Females

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Results of an After-School Weight-Loss Program

For Secondary Level Hispanic Females

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ABSTRACT

The purpose of this qualitative study was to determine if, when given an opportunity to participate in a behavior-focused nutrition education and physically active weight loss program, would Hispanic females at Toppenish High School make changes to their lifestyle that would lead to weight loss. The analysis of the data support the hypothesis that Hispanic female adolescents who participate in an after-school weight reduction program at Toppenish High School will adopt a lifestyle change that will have positive impact on weight loss.

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CHAPTER 1

Introduction

Background for the Project

The obesity epidemic was one of the greatest public health, social, and economic challenges of the 21st century. Since 1980, the percentage of children who were overweight has more than doubled and the rates among adolescents have more than tripled (Center for Disease Control and Prevention [CDC], 2008). In recent years, several weight-related conditions that were observed primarily among adults were increasingly diagnosed in young people. In some communities, type 2 diabetes accounted for fifty percent of new cases. Sixty one percent of overweight young people had at least one additional risk factor for heart disease and thirty nine percent of obese children had two or more risk factors for cardio vascular disease (CDC, 2008). Childhood obesity was also associated with social and psychological problems, such as discrimination and poor self esteem (CDC).

According to the CDC, one of the most harmful consequences of the obesity epidemic has been economic in nature. Specifically, the total cost of obesity in the United States was estimated at $217 billion in 2005. Approximately one in three children born in 2000 will eventually suffer from diabetes, and the projected costs of weight-related health care are staggering. CDC authorities have been quoted as follows:

> As the prevalence of overweight and obesity has increased in the United States, so have related health care costs-both direct and indirect. Direct care costs refer to preventative, diagnostic, and treatment services such as physician visits, medications, and hospital and home nursing care. Indirect costs are the value of wages lost by people unable to work because of illness or disability, as well as the value of future earnings lost by premature death. The cost of lost productivity related to obesity for ages 17 to 64 is $39.3 billion dollars (p.7).

The above authorities and their statements have provided the context for the social problem of obesity, which was the focus of the present study.

Statement of the Problem

In 1997, the World Health Organization (WHO) declared obesity a global epidemic with major health implications. According to the 2007-2008 National Health and Nutrition Examination Survey (NHANES), the prevalence of overweight and obesity in adolescents in the United States was 17.6 percent (www.edc.gov/nchslnhanes.htm).Obesity was a serious health concern for children and adolescents. Insulin resistance, type 2 diabetes mellitus, hypertension, obstructive sleep apnea, nonalcoholic hepatitis steatosis, bone and joint problems, social and psychological problems such as stigmatization and poor self-esteem, and a lower health-related quality of life were among the co-morbidities seen more commonly in obese children than those who were

of healthy weight (American Academy of Pediatrics, 2007). Individuals who were obese had a 10-50% increased risk of death from all causes compared with healthy weight individuals (http://win.niddk.nih.gov/ststistics/).

Furthermore, 2003-2006 data through NHANES showed disparities among racial/ethnic groups of female's age 12-19 years. Among Mexican American girls, the prevalence of obesity increased to 19.9 percent while the prevalence of obesity for white females increased to 14.5 percent. Among Mexican American women, 73 percent were overweight or obese as compared to only 61.6 percent of the general female population (CDC).

The prevalence of obesity was higher in lower socio-economic populations. The built environment within communities influenced access to physical activity opportunities and access to affordable and healthy foods. Lack of sidewalks or parks in neighborhoods discouraged children from active play. Food choices in neighborhood food markets were a barrier to purchasing healthy foods.

At the individual level, obesity was the result of an imbalance between calories consumed from food and beverages and the calories burned to support normal growth and development, metabolism, and physical activity. The imbalance between calories consumed and calories expended resulted from influences and interactions of a number of factors. These factors included genetic and physiological factors, behavioral, social and psychological factors, and

environmental factors that included family and cultural influences. Genes increased one's susceptibility for obesity but excess food and low activity levels contributed also (www.cdc.gov/nccdphp/dnpa/obesity/contributing/factors.htm). Research by the National Institutes of Health (NIH) suggested that a hierarchy of influence existed among family and friends. Attitudes, behaviors, and acceptance of obesity among family and friends played an important role in the development of obesity (www.nih.gov/news/pr/jul2007/nia-25.htm). Overall, the research was clear that a variety of factors contributed to the development of obesity on the individual level as well as on the global level. Furthermore, research indicated a solution to the obesity crisis for adolescences was complex and comprehensive.

Phrased as a question, the problem which represented the focus of the present study may be stated as follows: When given an opportunity to participate in a behavior- focused nutrition education program, to what extent would Hispanic teenage females at Toppenish High School make changes to their lifestyle that would lead to weight loss?

Purpose of the Project

Demographic trends caused many professionals to believe that the epidemic of inactivity and the associated epidemic of obesity were driven by multiple factors and was addressed likewise on several fronts. The Surgeon General cited schools were a critical setting where action needed to be taken to help stop childhood obesity (www.surgeongeneral.gov/topics/obesity/calltoaction/2.2-2.htm). Schools

and teachers played a critical role in providing a health-promoting environment, healthy food options, and other information, tools and practical strategies for children to use. Foremost among these were expansion of school physical education programs which promoted physical activity, encouraged healthy diets and provided positive and healthy role models. A study published in the Journal of School Health (Newmark-Sztainer & Story, 1997) reported findings that many overweight adolescents were interested in participating in school-based weight control programs, provided they were conducted in a supportive manner, offered enjoyable activities, were informative, were sensitive to the needs of overweight youth, and did not conflict with other activities. Adolescents further stressed the importance of a program leader who understood the difficulties that overweight youth faced. Many expressed their preference for a leader who was currently overweight or had been overweight in the past.

The purpose of this qualitative research study was to determine if, when given an opportunity to participate in a behavior-focused nutrition education and physically active weight loss program, would Hispanic teenage females at Toppenish High School (THS) make changes to their lifestyle that would lead to weight loss. To accomplish this purpose, a review of selected literature was undertaken. Additionally essential baseline data were obtained from surveys, daily journals, physical exercise and daily observations, from which related generalizations, conclusions, and recommendations were formulated.

Delimitations

The study took place at Toppenish High School from September 15, 2008 through March 27, 2009. Toppenish was a rural agricultural community reliant on the Hispanic farm worker. Most farm workers were un-naturalized, uneducated and spoke only Spanish. Most parents (73 %) of the student body were farm workers. Parents and children lived in very different worlds. The child, often a naturalized citizen, educated, and acclimated to the American culture, embodied and respected the culture and cultural practices of their families. Economically, 100 percent of the school population received free breakfast and lunch. Parental involvement was limited due to language barriers, lack of understanding of the school system and time limitations as work occupied most hours of their day. The gender breakdown within the school was 58 percent female and 42 percent males. Attendance was the main discipline issue in the school with family issues and health problems being the main reasons for absences. As per national statistics, there was a higher rate of obesity among the Hispanic female than the rest of the school population.

The study involved seven grossly obese females. Ages of students ranged from 15 years to 17 years. Ethnicity was one Caucasian, one Native American, and five Hispanics. The participants were invited into the program and obtained parent permission and physician clearance. The program ran Monday through Friday from 3:00-5:00 for the length of the study. Available facilities for the program

was a state of the art fitness/weight room, a mat room for aerobics and isolated calisthenics and flexibility work, an outdoor track, and a classroom for teaching nutrition and other weight loss information.

The researcher was a health and fitness educator who specialized in nutrition and exercise science. The researcher worked along side the participants on a daily basis. The researcher was supported by a fellow staff member, also an exercise science specialist, and the Family and Consumer Science teacher who allowed use of their room for cooking labs. Yakima Valley Community College (YVCC) provided support with nutritionists and student nurses.

The program consisted of intense exercise for ninety minutes and thirty minutes of education and counseling for emotional and social support. The researcher developed the program based on results of research studies on teen girls and obesity. Materials in the program consisted of fitness equipment, nutrition curriculum, journal work, attitude surveys, individual and group discussions, collection of weight loss data and observational notes by the researcher and their fellow staff member.

Assumptions

The author assumed teenage girls wished to be healthy, fit and thin. The girls wanted to fit into mainstream society and wear the styles of clothing popular at the time. The girls in the study represented typical adolescent girls at Toppenish High School. All participants met the definition/standard set forth by the

American Academy of Pediatrics for obesity. One participant had other medical issues but none that would limit their ability to participate fully. Girls selected for the study indicated through interview and application they were ready emotionally, physically, and mentally to take on the commitment, challenges and intensity of the program and to begin to make lifestyle changes. The parents indicated support through written consent and acquired written clearance from a physician. The subjects were well supervised in all aspects of the program (mentally, physically, emotionally, socially).The equipment and facilities were safe and well maintained, the program was varied and adapted to the individual needs of the individual subjects, and the researcher was qualified to address the issues of weight loss in a safe manner. Daily dialogues took place with the peer teacher to ensure the validity of observations by the researcher.

Hypothesis or Research Question

Obesity was prevalent among low socio-economic Hispanic female adolescents. Few programs addressed their unique needs and there was no structured framework for obesity prevention within this specific population. Hispanic female adolescents who participate in an after school weight reduction program at Toppenish High School will adopt a lifestyle change that will have a positive impact on weight loss.

Significance of the Project

The study sought to obtain essential data and to develop recommendations

from obese Hispanic females related to the effectiveness of a school-based weight loss program. Because obesity was prevalent among Hispanic females in low socio-economic populations, participants in the study reflected the population of the school and national statistics. The significance of the project focused on the insight gained of strategies needed to curb the obesity crisis for teen females in the Toppenish School District. Obese students were absent more often due to health issues than were their normal-weight peers. The number of students with diabetes, asthma, and joint problems decreased as the district adopted all or parts of the program studied by the researcher to prevent obesity or curb the number of obese students. The researcher acquired understanding of the cultural, social and emotional obstacles perpetuating the obesity crises within the community. The influence of the family and culture played a larger role in hindering teen girls desire to make lifestyle changes than any other factor. Due to the low economic status of families in the community, proactive strategies provided by the school food services were required. Social support from the school system for the obese student was also necessary. Education for parents on nutrition and physical activity was critically needed to change attitudes and behaviors.

Procedure

The researcher began the program at the request of an obese student who asked for help in loosing weight. Permission was granted by the Toppenish High School

principal to develop an after school weight loss program during the 2008-2009 school year. In Spring, 2008, a list of students meeting the criteria for gross obesity was developed. Students were personally contacted and informed of the program. Students were then required to submit an application as to their level of interest and commitment to the program (Appendix A). Students were required to obtain parent permission (Appendix B) and medical clearance (Appendix C). Once applications were received, students were selected on the basis of most need for intervention and the most expressed desire to make a lifestyle change.

Seven participants were selected. Further medical information was obtained and the schedule was set for the program. The researcher assembled notebooks for each participant to serve as a journal, keeper of data and for assembling and recording of educational information. The researcher then obtained financial support from the Yakima County Department of Health's "Rev it Up Coalition" and Yakima Valley Community College Nursing Program. A peer teacher was asked to serve as mentor/ assistant for observations and to verify the researcher's notes and conclusions.

The program began September 15, 2008. A week by week fitness program was scheduled by the researcher being careful to progress the participants slowly, keeping them engaged through fun activities, and to ensure a positive and supportive environment. Data were collected by the researcher and the participants through journaling, private interviews, and questionnaires. The

educational piece and specific weight loss strategies were introduced slowly, allowing time for behavior changes to take place in small increments. Emotional and social support was developed through group discussions, an established buddy system, and a phone tree for moments of weakness.

The researcher kept a folder on each participant and recorded weight loss information weekly. Daily attitude observations, effort and fitness improvements were recorded. After each informal interview with a participant, the researcher added family and other social or emotional information gleaned from the conversation which affected the weight loss progress.

Regular visits by YVCC nurses were scheduled to check blood pressure, verify body composition and hydration and to address any complaints of overuse injuries. An YVCC nutritionist conducted classes and provided helpful strategies for participants to take home to their mother's for tips on how to help them with healthy food choices. Several food labs were conducted to demonstrate healthy ways to prepare and serve food and to try new foods to add to their diets.

Definition of Terms

Significant terms used in the context of the present study have been defined as follows:

behavioral factors. Behaviors that, when combined or interact with other factors, contributed to an energy imbalance and consequently, obesity.

body mass index. Body mass was an index of weight adjusted for the height of an individual.

caloric balance. Caloric balance was calories consumed were balanced by the calories expended.

calorie. Calorie was the unit of energy supplied by food.

diabetes. Diabetes was a disease where the pancreas was unable to properly metabolize sugar.

energy intake. The calories consumed that when metabolized converted to energy.

environmental factors. Environmental factors were home, school, and community environments that contributed to behaviors related to food intake and physical activity.

genetic factors. Genetic factors were hereditary characteristics that increased an individual's susceptibility to excess body fat.

obese. Obesity was the abnormally high proportion of body fat. For adults, it was defined as having a body mass index of greater than 30kg. For teenage females, it was defined as having a percentage of fat greater than 24 percent of total body composition.

over-weight. Overweight was excessive weight compared to set standards. Excess weight can come from muscle, bone, fat or water.

psychological risks. Psychological risks are psychological stressors of social stigma.

qualitative research. The collection, analysis, and interpretation of comprehensive narrative and visual data in order to gain insights into a particular phenomenon of interest.

Acronyms

BMI. Body Mass Index

CDC. Centers for Disease Control and Prevention

NCHS. National Center for Health Statistics

NHANES. National Health and Nutrition Examination Survey

NIH. National Institutes of Health

THS. Toppenish High School

TSD. Toppenish School District

WHO. World Health Organization

YVCC. Yakima Valley Community College

CHAPTER 2

Review of Selected Literature

Introduction

Obesity was seen as a serious health condition for children and adolescents by the medical field. In fact, childhood and adolescent obesity became so severe that diseases that once affected only adults appeared in children (Rao, 2008). Data from the National Center for Health Statistics National Health and Nutrition Educational Survey (NHANES) (1996-1980 and 2003-2006) showed increased prevalence from 5.0 percent to 12.4 percent for children two to five years of age; an increased prevalence from 6.5 percent to17.0 percent; and an increased prevalence from 5.0 percent to 17.6 percent for adolescents twelve to nineteen years of age. Although viewed as a cosmetic problem by a majority of the public, the well-founded association between obesity and increased morbidity and mortality prompted alarm from various sectors of the health care community (CDC, 2008).

Although obesity increased for all children over time, NHANES data also indicated disparities among gender, racial/ethnic groups, and socioeconomic status. In 2006, 19.9 percent of Hispanic females, age twelve to seventeen were obese. The disproportionate obesity burden among poor Hispanic females was well documented, yet weight management was particularly challenging in those

high risk populations. Hispanic females were less likely to seek out weight loss programs and were less likely to have weight loss success (CDC).

To undertake the present study, the writer (Doris Dorr) worked with low socioeconomic Hispanic females in a school physical education setting. The obesity statistics for the school population mirrored national statistics. In response to those statistics, a comprehensive weight loss program geared to that special population's needs were developed to see if, when made available within the educational setting, would students attend and would there be a lifestyle change that would end their struggle with obesity.

The review of selected literature focused on such relevant topics as: the physiology of obesity; the social and psychological implications of adolescent female obesity; environmental, familial, and cultural influences on female (and Hispanic) obesity; and, effective weight loss program design within the school setting.

The Physiology of Obesity and the Medical Implications

Obesity was generally defined as having an abnormal level or an excess of body fat. The tools for assessment of obesity in adolescents are the body mass index (BMI), a standardized measurement that compares height and weight. There were limitations to its interpretation because BMI did not make adjustments for muscle mass or have the same relationship with body fatness in all race/ethnic groups. Because of these limitations, skin fold calipers that measured the density

or thickness of the layer of fat beneath the skin were recommended as a more accurate measure of overweight or obesity in the adolescent. However, in the school setting, BMI was the most convenient and practical tool (Adair & Gordon-Larson, 2001).

Adolescent females in the 95th percentile have a body mass of 30 and were classified as obese (Black, 2004). Adolescent females with a skin-fold measurement of fourteen centimeters at the iliac crest had 24 percent body fat and was considered obese. The proximate cause of the obesity epidemic was consumption of excess calories characterized by unhealthy eating habits and insufficient physical activity (Surgeon Generals Call to Action, 2001). However, some authorities argued that genetics and predisposition to weight gain, even with low calorie consumption, were stronger indications of resulted obesity than were diet and exercise. The contribution of genetics to obesity was estimated at 40-70 percent (National Heart Lung and Blood Institute, 2004).That statement was put into perspective by Woodward-Lopez (in 2006) when he agreed that genetics should not, however, be confused with destiny. This authority stated:

> Genetics determines ones susceptibility to obesity but does not determine the actual weight that one will attain. Latinos appear to be one of the ethnic groups with a greater genetic susceptibility to obesity, such that given an obesigenic environment this susceptibility will more likely be expressed (p.4).

A Stanford University study found that having overweight parents was the biggest risk factor for childhood obesity. Nearly forty eight percent of children with overweight parents became overweight themselves compared to only 13 percent of children who had parents of normal weight. More than two hundred gene markers have been identified (Marti, 2004). Dr. Jeffery Freidman (2006), a molecular geneticist at Rockefeller University in New York, mirrored Woodward-Lopez' position when he told Time Magazine, "There are genes in the population that predispose to obesity. Obviously, there's an environmental contribution, but no one questions that genes are involved" (cited in Kassel & Gleaves, 2006, p. 158).

Kassel & Gleaves further suggested the size and number of fat cells played a role in the predisposition to obesity. Obese individuals have slightly larger and significantly more fat cells than normal weight individuals. There were two important periods of development when the numbers of fat cells were affected: infancy and pre-adolescents (9-12 years). During this time, and only this time, if fat cells were filled to capacity, the body created more fat cells. Once fat cells were formed, they could not be eliminated either through exercise or diet. They could only be shrunk by depleting the fat within them. A correlation was believed to exist between the number of fat cells and the rapidity of weight gain. Obese individuals regained their weight rapidly after dieting because those cells remained available and enabled that individual's body to store more fat than

someone who had less cells. When the obese person dieted, the body naturally became more fuel efficient, lowering the metabolic rate in order to conserve the fat that, in ancient times, enhanced the ability to survive.

Research conducted by Must & Strauss (2007) focused on the relationship of the age of menarche with the prevalence of obesity. These findings showed a significant relationship to overweight and obesity in early maturing adolescents and an even stronger correlation among minority adolescents. Obese girls were observed to experience menarche typically before the age of ten. A longitudinal study by Chavaro et al., 2005, described the results of a Planet Health school-based intervention program designed to reduce obesity in adolescents by increasing vigorous physical activity and increasing healthy food intake. These researchers found the age of menses in participants within the study increased by several years.

For most children and adolescents, medical complications did not become apparent for decades, but the metabolic consequences of obesity were silently occurring. Obese adolescents may develop gallstones, hepatitis, sleep apnea and increased intercranial pressure. Obesity also caused permanent damage to growth plates, headaches and blurred vision, asthma (30% of obese adolescents have asthma), sleep disorders that significantly affect memory function, and menstrual abnormalities and polycystic ovary syndrome (Must & Strauss, 2007). More obvious obesity related medical ramifications included cardio-respiratory risks

which included high cholesterol levels and high blood pressure. For example, thirty nine percent of obese adolescents had two or more risk factors for cardio-respiratory disease. Abnormal glucose tolerance increased and was reported in all studies read by the author. Type 2 diabetes was a health-related problem among children and adolescents and resulted in advanced complications with cardiovascular disease, circulation problems, vision problems and kidney failure (CDC, 2008). If obesity continued through adolescents and into adulthood, cardiovascular disease indicators multiplied and other disorders or diseases such as gall bladder disease, osteoarthritis and certain cancers developed at earlier ages and with more prevalence (Must& Strauss, 2007).

Social and Psychological Implications of Obesity on Adolescent Females

The affects of obesity on the Hispanic female was more specific to cultural and familial attitudes. Attitudes toward physical appearance and standards of beauty and desirability varied over time and culture to culture. In America, a thin look denoted self-control and success and obesity was considered ugly, shameful and disgraceful. An obese female was viewed as self-indulgent and lacking self-discipline and control. For women, thinness became synonymous with attractiveness (Cassell& Gleaves, 2006). However, in the Hispanic culture, the basic attitude that a chubby child (or women) indicated a healthy individual created stress to the female adolescent. The marked dichotomy between wealth and poverty in this population was additionally reinforced by the assumption that

fat children were a manifestation of the parent's prosperity. As enculturation to American culture by children increased, the clash of attitude toward obesity caused increased conflict (Brewis, 2003).

For some, adolescent obesity was a temporary condition, while for others, obesity was the beginning of a lifetime compounded with severe emotional and personality problems. Experiences particularly during adolescence played an important role in psychological development. The psychological trauma of feeling different, inferior, laughed at, unattractive and ashamed, caused obese children to withdraw from peer group situations and social activities (Rimm, 2004). As stated by Rimm:

> Personality tests have shown that personality characteristic's of obese girls are similar to those of people who have been subjected to intense discrimination because of their race or ethnic origin: passivity, obsessive concern with self-image and expectation of rejection. These feelings lead to awkwardness in social situations, social isolation and actual rejection (p 88).

Adolescents who felt inferior in group situations tended to withdraw to solitary and sedentary activities such as TV viewing and eating (Stunkard, Faith, Allison, 2004). According to Strauss (2000), adolescent's low self esteem showed up as constant sadness, loneliness, nervousness, and in destructive behaviors such as substance abuse. An eight year study by Mustillo (2003) found obese teens were

2.5 times more likely than non-obese teens to meet diagnostic criteria for oppositional defiant disorder, depression, attention-deficit/hyperactivity disorders and various phobias. In addition, Pricilla Spencer (1998) of the National Association of School Psychologists stated, "Obese children often face rejection and discrimination from other children and from adults, including teachers. They tend to have poor interpersonal relationships and limited group and social interests" (p.7). In a study by Brown (et al., 2006), girls reported it was significantly harder for overweight girls to make friends. Must & Strauss (1999) found overweight individuals were described as lazy, lying, cheating, sloppy, dirty, ugly and stupid by children as young as six years of age and by physicians as week willed, ugly and awkward.

A study by Zametkin (2004) proposed obesity, and the psychological and social problems associated with obesity, were results of negative social factors surrounding the child. Social factors associated with obesity included neglect, abuse, and generally non-supportive home environments. Neglected children were nine times more likely to become obese. Stunkard (et al., 2004) explained how food provided comfort and eating served as a compensatory mechanism for children and adolescents who lived in difficult environments. Interestingly however, obese girls who appeared to come from stable environments also described food as a feel good drug.

Rimm (2004) observed that obese girls considered obesity, and hence their own bodies, undesirable and repulsive. For the obese teen, routine and necessary activities like shopping for clothes upset and distressed them. In severe cases, obese adolescent females suffered from depression, leading to total isolation and the incapacity to be emotionally attached to other persons.

Brach (1973) was in agreement that obese females considered their weight a handicap and the reason for their disappointments. The American Obesity Association (2008) concluded research showed a relationship between obesity and depression in the early stages. When investigating the influence of obesity on depression, Stunkard (2008) stated:

> We need to better understand why these disorders co-occur in certain individuals and how to develop more effective treatments. Depression influences obesity under some circumstances and obesity influences depression under others (p. 110).

Environmental, Familial, and Cultural Influences on Hispanic Female Obesity

Hispanic adolescent females had the highest prevalence of overweight in the United States. Causes of this ethnic and gender variation included differences in the level of acculturation, ethnic beliefs, differences in ideal body images, lack of appreciation of weight management, literacy levels and economic status (Jannetti, 2008). Review of the literature in this subset strongly supported the connection between socioeconomic status and obesity. Familial resemblance in

weight was well established and resulted from interplay between genetic and environmental factors. Addressing obesity among Hispanic adolescent females required an understanding of the culture, values, resources and environments that influenced eating, physical activity behaviors and choices in Hispanic communities (Woodward-Lopez, 2006).

Compared to other ethnic groups, the diets of Hispanic children were higher in dietary fat, sweetened beverages, and lower fruits and vegetables. According to Woodward-Lopez (2006), underlying inequities in socio-economic status lead Hispanics to live in low-income neighborhoods that had limited access to full service grocery stores. Limited purchasing power to buy nutritional foods and long work hours that limited the time available to prepare home-cooked meals contributed to the high rate of obesity. Less education or literacy by the mother also was associated with poorer food choices (Mazur, 2003). Lack of physical activity also contributed to obesity. Baybe (as cited in Woodard-Lopez, 2006) reported nearly 27% of Hispanic adolescents engaged in little or no physical activity at all. Low income neighborhoods had fewer recreation options. Hispanics cited inadequate facilities, cost, and neighborhood safety as barriers to physical activity. Lack of transportation and money to support children in extra-curricular activities added to lack of activity. TV viewing showed a strong association with obesity not only because it precluded physical activity but it was accompanied by high calorie snacking and aggressive advertising of calorie rich,

nutrition-poor foods and beverages (Samuels, 2003, as cited by Woodard-Lopez, 2006).

Research by Browning & Cagney (2004) showed community poverty influenced obesity through the erosion of community norms and values. The community norms did not have power to enforce healthy lifestyles. Instead, poor communities tolerated risky lifestyles, obesity, and overweight. Adolescents who lived in poor neighborhoods were less likely to find positive role models. Consistent with social learning theory (Bandura, 1977, as cited by Wickramma, 2005), adolescents who were exposed to behaviors related to obesity, modeled or emulated them through social learning (Wickramma, Wickramma, & Bryant, 2005).

Immigration and acculturation played a role in Hispanic obesity. Hispanic immigrants faced both unique risks and protective influences. Traditional culture tended to be protective (Unger, 2004). Immigrant families tended to prepare meals at home and watch less TV. Hispanics tended to place family concerns and social cohesiveness above individual achievement. Consequently, efforts that put primary emphasis on discipline, self-control, and individual actions had limited impact. The socialization goal within the Hispanic culture then is that children had to accept that family is the focus of their lives and individual needs or goals were second place. This value fell hard on the female within the traditional family (Zayas& Solari, 1994).

Acculturation, as defined by Pabon (1998), was a subtle process whereby the behaviors and attitudes of an immigrant group underwent change as a result of contact and exposure to the new dominant culture. A research study conducted by the Departments of Sociology, Food Science and Human Nutrition, and Economics at Iowa State University (Mazur, 2003) found that limited acculturation partially ameliorated the negative association between poverty and dietary intake of Hispanic youth. Hispanic youth who were less integrated into American culture were less likely to become obese even though they came from lower socioeconomic status. The more Hispanic adolescents attempted to belong to this society, the more obese and inactive they became (Educational Resource Information Center, 2003). Adolescents were influenced by the obesigenic environment in the United States, particularly the sedentary lifestyles; large portion size; heavy advertising of high-fat, energy dense foods; and mass media (Gordon-Larson, Harris, Ward, & Popkin, 2003).

Another influence on eating behavior was peer pressure. Adolescence was a time for socializing. American teen culture separated from family and spent time without adult supervision, often at fast food restaurants, malls or other places where unhealthy foods dominated. Another important finding reported in the Journal of Community Health stated that when youth acculturated faster to the United States than parents, a role reversal developed in which parents were dependant on their children for communication and understanding of the United

States culture. This role reversal undermined parental authority and limited the parent's ability to control their children's activities (Unger, Reynolds, Shakib, Spruijt-Metz, Sun, & Johnson, 2004). In the absence of parental authority and monitoring, adolescents were more likely to select activities that contributed to obesity.

The literature review indicated controversy as to whether traditional and less acculturated family values negatively impacted female obesity or if they protected from obesity. The author found evidence on both sides, however, there was more evidence to support that traditional Hispanic culture today in the United States tended to have more negative impact than positive. The Hispanic female, influenced by the United Sates culture as she attended school and developed social relationships outside the family, tended to become obese. The values of the traditional home culture did not allow her to address the issue of obesity because family need came before individual need (time for intervention programs or special diets within the home).

Familial and cultural influences within specific Hispanic homes, poor or advantaged, complicated the finding by the author even further. Mother's who were in situations where the first thing on their minds was survival, concepts of healthy eating was not even approachable topics. An interview by Talvin (2002) of a mother (Gauthier) in poverty states, "It was not about how healthy the food but was my child going to be fed". In the more advantaged homes where keeping

tradition and culture alive was important, traditional food played an important role in familial celebrations. Gaunthier continues by saying, “Telling families to stop eating cultural foods that were in effect killing them, sends a racist and inappropriate message”.

The last interesting information gleaned by the author during review of literature was the parenting styles of the mother and the amount of affection or nurturing given by the mother to the Hispanic female. Research on early childhood socialization suggested that Hispanic parents differed from other ethnic groups in their childrearing values and the interpersonal behavior they wanted their children to display. In most Hispanic families, parents socialized children to behave in ways important to the family culture, whether or not it was in accordance with the norms of the dominant culture (Zayas & Solari, 1994). This created conflict between mother and the acculturated teen girl. When the teen went against the behaviors or values of the mother, it was perceived as undermining parental authority, and the relationship was broken. This caused internal conflict and a sense of being rejected. The female was forced to choose between acceptance of peers or love and acceptance of the mother.

More current studies showed that even with demographic factors controlled, a strict or authoritarian parenting style that had high expectations for self-control and a low sensitivity to the developmental and emotional needs of their children, was strongly linked to obesity (McCarthy, 2006). The teens, whose mother’s

were less sensitive and more strict and controlling, were more likely to be overweight (O'Brian, Nadar, Houts, Bradley, Freidman, Belsky, & Susman, 2007). When the controlling parenting style was specifically related to food consumption, the likeliness of obesity increased. Overweight girls who had restricted access to food were learning not to respond to their own hunger and satiety cues but ate in response to social or emotional cues. If the mothers were obese and restricted their daughter's diet, likeliness of obesity increased the most (Francis & Birch, 2005).

Effective School-based Obesity Prevention Programs

Since the purpose of the research project was to develop a school based weight loss program, the researcher reviewed literature that demonstrated effective strategies while working with obese females. It was crucial to consider cultural and historical factors so the developed program fit the specific population.

Research by Brown, Birch, Tuefel, & Kancherla (2006) indicated the voice of the youth should be amplified when assessing needs. Identifying the preferences and perceptions of obesity from the youth perspective was important because it gave youth a more active role in the process of developing solutions to the challenges they faced. Educational materials or programs based on participant feedback created effective and empowering programs for adolescents and they took more responsibility and action regarding their development when they were

more actively involved. The process of completing surveys helped youth recognize risk in their own behavior, and they experienced self-control and improved decision making capacity. Additionally, youth reported preferences toward learning about overweight from physicians and nurses and through engaging in clubs, groups, or teams. Teens preferred to learn about weight control by methods (e.g., learning how to prepare healthy meals or joining a group that promotes activity) other than lecture. Health and physical education programs provided a coordinated opportunity for learning about weight loss that improved adolescents' knowledge and skills regarding obesity.

All literature reviewed agreed that exercise or diet alone were not successful weight loss programs. Parcet (2006) stated:

> Exercise generally does not produce considerable weight loss when used independently, but is an important adjunct to a weight –reducing diet because it increases energy expenditure, enhances loss of adipose tissue, and improves dietary adherence. Although aerobic activity has been used most frequently for weight loss and control because of the caloric expenditure required, strength training has numerous benefits and may help preserve fat free mass during diet induced weight loss (p.132).

In addressing the physical activity needs of girls, research showed programs that provided instruction, gave experiences that increased self-confidence and physical competence, as well as created an environment that supported social

acceptance and fun were most successful. Such qualities and strategies enhanced the possibility of increased commitment and long-term sustainability (DeBate, Zhang, & Thompson, 2007).

The best treatment for obesity in adolescents was one which provided lifelong behavioral changes rather than short-term weight loss (Longe, 2006). Setting realistic goals were also vital to the success of the program. According to Marmitt (2008) it was important to consider motivation, emotional stability, hereditary body build, extent of obesity, and attitudes towards food. A slow weight loss averaging two pounds per week was recommended. Diet and exercise promoted a change in behavior, attitude and lifestyle through behavior modification. Behavior-focused treatment stressed the use of a food diary to keep track of food intake. Making girls aware of eating habits, reasons for eating and replacing old habits with new behaviors (techniques for combating stress, boredom, and fatigue) were key to lifestyle change. All studies indicated a diary was the most effective tool in changing of eating habits. Learning what, when and how much, one ate, their response to food as well as understanding the psychological issues behind their eating habits were strongly supported in all literature. Finally, Longe (2006) emphasized making activity a part of everyday life was key to achieving and maintaining weight loss. Therefore, starting slow and progressing teen girls slowly kept them from becoming discouraged. Varying the routines and trying new activities kept interest high.

In reading literature specific to Hispanic females, Woodard-Lopez's (2006) research stated change in long-term behavior of the adolescent was dependent on engagement of the family. Rao (2008) verified this by saying, "Unless the family supported dietary change or encouraged physical activity, weight loss was temporary at best".

Summary

The review of selected literature reported in Chapter 2 supported the following research themes:

1. Many factors have contributed to the obesity epidemic, specifically the disappropriate prevalence of obesity among Hispanic females. Physiologically, Latinos appear to be one of the ethnic groups with a greater genetic susceptibility to obesity such that given an obesigenic environment, this susceptibility will more likely be expressed.
2. The social and psychological affects of obesity on the Hispanic female was more specific to cultural and familial attitude.
3. Addressing obesity among Hispanic adolescent females required an understanding of cultural influences, family values and resources, and environments that influenced eating, physical activity behaviors and choices in Hispanic communities.
4. Effective school-based obesity prevention programs identified the preferences and perceptions of obesity from the youth perspective was important because it

gave youth a more active role in the process of developing solutions to the challenges they faced.

CHAPTER 3

Methodology and Treatment of Data

Introduction

The purpose of this qualitative research study was to determine if, when given an opportunity to participate in a behavior focused nutrition education and physically active weight loss program, would Hispanic teenage females at THS make changes in their lifestyle that would lead to weight loss.

Chapter 3 contains a description of the methodology used in the study. Additionally, the researcher included details concerning participants, instruments, design, procedure, treatment of the data, and summary.

Methodology

This qualitative research study utilized criterion sampling to identify candidates for a weight loss program specific to Hispanic females. Seven secondary level Hispanic girls were selected from a pool of forty three obese female students. Selection was based on percent of body fat, a medical profile, and a commitment to the program. A longitudinal study (September 15th to March 31st) was conducted to determine if changes occurred in lifestyle behaviors, attitudes toward food and exercise as well as physical changes such as weight loss and increase in overall physical fitness. Subjects participated in a comprehensive and directed weight loss program two hours each day, five days a

week. Two days weekly subjects operated unsupervised but were required to maintain and submit daily logs of diet and exercises.

Participants

The participants included students enrolled in a rural public high school in Toppenish, Washington. All participants, except one, lived well below the poverty level and qualified for the Federal Free and Reduced Breakfast and Lunch Program. The ethnicity of the participants was mostly Hispanic, with Spanish the only language spoken at home. The parent's average educational background was third grade, with two parents completely illiterate. One student was Native American and was placed into foster care August 20, 2008. The student's foster family was financially stable and college educated. Ages of participants included one fourteen year old, one fifteen year olds, three sixteen year olds, and two seventeen year olds. Only one of the participants was enrolled in a Physical Education class. The remaining students had no means for daily structured physical activity. The body weight of subjects ranged from 197 pounds to 340 pounds, whereas body composition ranged from 39% - 73% fat. Data obtained from participant information forms and physician release forms indicated only one subject had medical concerns outside of obesity related issues. That subject had Rheumatoid Arthritis and was monitored closely by her doctor. All participants, when selected from a pool of forty three candidates, agreed to

participate in the study and commit to the time schedule and daily program requirements.

Instruments

Tools used to collect qualitative data for this research study included affective assessments in the form of participant question surveys. Data utilized by the researcher included field notes of daily program activities, narrative observations of participants, researcher's interview notes and participant answers to survey questions. To maintain validity and to ensure reliability of the research data, the researcher met weekly with professional peers (i.e. THS exercise physiologist, Physical Education teacher, YVCC student nurses, and YVCC Nutritionist). The same affective assessments were administered, in the same context, several times throughout the length of the study.

Design

Throughout this qualitative study, the researcher sought to determine whether implementation of selected interventions in a seven month, two hours a day, after school program for obese Hispanic females would result in weight loss and lifestyle changes. The research design utilized a variety of strategies essential for obtaining baseline data. These included prolonged participation with the participants, structured and unstructured interviewing, and purposeful educational sessions to promote lifestyle changes, opportunities for healthier lifestyle

experiences, and journal reflections to measure attitudinal and self-esteem changes.

Procedure

Procedures employed in the present study evolved in several stages, as follows:

1. In the spring of 2008, the researcher recognized the increase in the number of grossly obese females attending THS. An informal interview with several of the students led the researcher to the conclusion that intervention was needed to lead them to a change in habit and lifestyle. The concerns were discussed with the building principal, Walt Wegener, and permission to develop a program was obtained.

2. During the month of May, 2008, intentional observation of the female population and recording names of possible candidates for the study took place.

3. On May 20th, 2008, invitations were privately and personally delivered to possible subjects asking them to attend an informational meeting. At the meeting, subjects were informed of an opportunity to apply for a one year program that would help them overcome their weight issues. Because the study needed to be closely monitored and maintain a personal and individual approach, the study would involve no more than seven individuals. The parameters and components

of the program were laid out as well as the requirements of time, physical commitment, and parent and physician permission.

4. During June, 2008, after receiving applications from forty three students, information was evaluated and seven students were invited into the program. Over the summer, subjects were required to fill out commitment sheets, get parental commitment, and get a full medical exam and statement of clearance from their physician.

5. In August 2008, due to a staff change at THS, the researcher obtained permission from principal Trevor Greene and explained the purpose and desired outcomes of the after school program.

6. On September, 2008, participants submitted all final paperwork. Participants were given notebooks for journaling, storing of educational information, and recording personal data, fitness workouts and nutritional logs. Final information on workout attire and times and meeting places were handed out.

7. The official start date for the program was September 15, 2008. The first two weeks involved setting the emotional tone and establishing a trusting relationship amongst the group as well as with the researcher. Contextual data was collected by the researcher through observation of the emotional states at the beginning and end of each session. Close observations were made of body language and researchers perceived level of effort by the participants. Informal interviews with each subject occurred daily (Appendix D). Hard data was collected by

administration of the first affective assessments (Appendix E), fitness assessments (Appendix F), and baseline weight and body composition were obtained on each participant (Appendix G).

The routine or schedule of the program was established. The program breakdown consisted of workouts, educational topics related to obesity (nutrition, activity levels, genetics, culture, lifestyle habits), emotions related to obesity (why, how and when we eat), weight loss strategies to implement for the week (Appendix H, I, and J), and time for journaling and debriefing (Appendix K).

Workouts concentrated mostly on building muscle and burning maximum amounts of calories through cardio / aerobic workouts. Due to the low level of fitness and the weight of the participants, low impact work was required. Since participants were adolescents, variety and socially engaging means of exercising was required to keep them motivated. Trust and a working relationship with the participants were established by the researcher engaging with them in all aspects of the program (workouts through keeping the journals and recording data).

8. By October 15, 2008, the time of the program was an issue. Participants needed tutorial help after school and had to report to study table, thus missing some of the program. Parents, although they had signed off on commitment to the program, required the participants to report home to baby-sit or do other chores. Missed sections of the program hindered continuity and placed stress on the participants.

Participants learned to evaluate personal data and determined what foods in their diets were unhealthy and made plans for healthier substitutions. Participants also looked at eating patterns in relationship to emotions and daily activities. Plans were made to counter these habits. Time each day was spent individually with the researcher to discuss the issues stated above.

9. By October 24, 2008, students who maintained attendance in its entirety experienced large drops in weight. Their motivation became intrinsic. Those who missed the daily workouts did not see losses and became discouraged.

10. By November 3, 2008, adjustments to the time schedule was made. The program began one hour after school which alleviated tutoring and babysitting concerns. All participants were back to complete program engagement.

Menu planning and formal cooking labs began. Money from the grant purchased the food and nutritionists gave guidance on menus. The researcher taught the participants healthy cooking options and supervised the labs.

The intensity level of workouts increased as participant's fitness levels indicated large gains in aerobic capacity. Lost weight allowed the researcher to add some higher impact workout to the schedule. The researcher found participants more intrinsically motivated to put in the effort to do the workouts. Participants began requesting specific activities and often stayed past the scheduled time to do additional work. Participants looked forward to weight and body composition checks because they experienced successful feedback.

11. On November 26, 2008, participants experienced panic as they faced the holiday. The researcher gave specific strategies to help them cope with the temptations. At the request of the participants, special workouts were held during vacation time. Thee researcher noted a shift in attitude toward food and realized participants had made a commitment to calorie input and calorie output.

12. During December, 2008, participants struggled with diets as they were tempted daily with holiday events. Each participant experienced a back slide in their discipline and ate foods they had not eaten for months. However, each participant also experienced a negative physical response as their body rejected the food. The positive outcome was participants experienced the negative impact of unhealthy foods on their bodies. This experience caused each participant to embrace healthy habits and the feelings of deprivarity, while eating a healthy diet, ceased.

Participant positive attitude toward exercise continued to increase. Participants were beginning to plan their own workouts based on where they were with their weight goal for the week. Aerobic duration increased dramatically, with some participants going sixty minutes without stopping. The researcher spent time in reflection with each participant to evaluate how far they had come in their journey and in accomplishing their goals. Motivation was high. Participants were supportive of each others accomplishments.

13. On December 22, 2008, in response to the researcher being out of town, the participants arranged for another adult to supervise them so they could continue daily workouts. This was the first time the participants took full initiative to ensure daily activity. The researcher left them responsible for their actual training but required a daily log be submitted when the researcher returned.

14. In January 2009, the researcher stressed nutrition again as some participants were cutting too many calories or not including all nutrients. To begin preparing participants for life outside the program, the researcher began offering activities for them to choose from, but had participants do the workouts without the researcher's lead. This worked well, but participants requested to stay together two times a week because they missed the social engagement and the emotional support of each other and the researcher.

Weight continued to drop at over three pounds per week for all but one participant. Family support was not there so the researcher spent extra time with the participant, extended relatives, and school personnel to assist the participant in staying supported and motivated.

As the weight dropped off, the participants were faced with social issues they had never experienced before. Boys noticed them; they felt more comfortable to engage in other types of social activities, and their view of self changed almost as much as how others viewed them. Along with more social interactions came

temptations with food. Sessions were held to talk and brainstorm solutions to those dilemmas.

15. In February 2009, as participants began to realize the extent of their success and also realize the end of the program was getting close, the researcher began more in depth interviewing with participants to guide them towards understanding themselves and what behaviors/emotional issues contributed to where they were in September as compared to where they were in February. This task was emotionally taxing on both participant and researcher. Personal plans, affirmations, some counseling referrals, and goals were set by each participant to ensure success on their own.

16. In March 2009, as the end was upon the program, the researcher concentrated on self- esteem building, gave as many options/resources to the participants as possible, gathered final data in fitness, weight/composition loss, knowledge gains about nutrition, and attitude toward self, exercise and eating habits.

In the final week, participants were taken on field trips to restruants to learn how to make healthy choices and to celebrate their work. Each day a recreational activity was introduced to the participants to give options for informal exercise as well as give some the encouragement to try participation in a sport or recreational activity that would continue to provide the emotional and social support they gained from the program. Three of the seven participants decided to turn out for a spring sport.

Treatment of the Data

The researcher compared changes in attitude and value with affective assessments. (Appendix D) Through analysis of field notes, participant journals and other anecdotal data, the relationship between weight loss and specific indicators such as parental support, family / cultural influence, intrinsic motivation and effort, and educational knowledge and change in eating habits were compared. Data obtained have been reported and analyzed in chapter four.

Summary

Chapter 3 provided a description of the research methodologies employed in the study, participants, instruments used, research design, and procedure utilized. Details concerning treatment of the data obtained and analyzed were also presented.

CHAPTER 4

Analysis of the Data

Introduction

The purpose of this qualitative research study was to find out if, when given an opportunity to participate in a behavior-focused nutrition education and physically active weight-loss program, would Hispanic teenage girls at Toppenish High School make changes to their lifestyles that would lead to weight loss. Chapter 4 contains a description of the environment, hypothesis and results of the study.

Description of the Environment

The study was conducted at Toppenish High School and involved seven grossly obese teen females. The participants were invited into the daily two hour after-school program but were required to commit to the entire seven months of the study. The researcher was a Health and Fitness educator who specialized in nutrition and exercise science. The program consisted of an intense 90 minute workout and 30 minutes of nutrition education and counseling for emotional and social support. Journal writings, attitude surveys, individual and group discussions, weight loss data, and observational data directed the researcher in developing daily educational lesson plans and developing the fitness workouts that would most benefit the participants in continual weight loss, lifestyle changes, and positive self- image.

Hypothesis/Research Question

Hispanic female adolescents who participate in an after-school weight reduction program at Toppenish High School will adopt a lifestyle change that will have a positive impact on weight loss.

Results of the Study

The results of the study have been organized by category and reported in tabular form. Results were:

Table 1, regarding Positive Attitude Toward Exercise, has detailed the following: The number assigned to each participant, and, baseline scores from September, 2008 to March, 2009, indicating change in attitude concerning exercise.

Table 1

Positive Attitude Toward Exercise

Participant Number	Baseline Score September, 2007	Final Score March, 2008
1	12	45
2	18	45
3	23	45
4	20	45
1	12	45
5	10	45
6	9	39
7	11	38

Note. A total score of 45 indicates participants rated each of the individual questions at either a strongly agree or at the most positive feeling.

Table 2, regarding Knowledge about Nutrition, has detailed the following: The number assigned to each participant, and, baseline scores from September, 2008 to March, 2009, indicating change in knowledge about nutrition.

Table 2

Knowledge About Nutrition

Participant Number	Baseline Score September, 2008	Final Score March, 2009
1	8	40
2	8	40
3	13	40
4	8	40
5	8	40
6	8	40
7	8	40

Note. A total score of 40 indicates participants rated each of the individual questions at either strongly agree or a most positive feeling.

Table 3, regarding Weight and Body Composition, has detailed the following: The number assigned to each participant, and, baseline scores from September, 2008 to March, 2009, indicating change in weight and body composition.

Table 3

Weight Loss and Body Composition

Participant Number	Baseline Score September, 2008		Final Score March, 2009	
	Weight	Composition	Weight	Composition
1	218 lbs.	41.2%	165 lbs.	23.3%
2	252 lbs.	58%	188 lbs.	36.65
3	197 lbs.	39%	134 lbs.	18.8 %
4	249 lbs.	56.8%	175 lbs.	24%
5	310 lbs.	64.4%	223 lbs.	39.8%
6	340 lbs.	73.5%	251 lbs.	51.1%
7	324 lbs.	71.3%	237 lbs.	49.4%

Note. A body composition of over 24% is considered obese. Adapted from Weight Control Information Network, by Black & McCarthy, 2008. Retrieved from http://win.nddk.nih.gov/statistics.

Table 4, regarding Fitness Levels, has detailed the following: The number assigned to each participant, and, baseline scores from September, 2008 to March, 2009, indicating change in fitness levels.

Table 4

Fitness Level

Participant Number	Cardio-respiratory Mile Run (9.32 min) Beg/End	Muscular endurance Sit-ups (35) Beg/End	Push-ups (25) Beg/End	Strength Long jump (own height) Beg/End	Flexibility Sit/reach (4 in.) Beg/End
1	21:07 / 9:16	11 / 47	6 / 34	2'6 / 4'8	-3" / +4"
2	24:42 / 9:32	7 / 34	3 / 30	2'8 / 4'9	+3" / +7"
3	16:32 / 8:45	21 / 53	12 / 41	4'7 / 5'6	-1" /+5"
4	24:79 / 9:30	17 / 29	8 / 26	1'11/ 4'1	-7" / +5"
5	26:08 / 9:28	9 / 32	7 / 26	3' 1/ 4'10	-6" / +4"
6	35:02 / 9:32	4 / 30	3 / 21	1'8 / 4'3	-4" / +6"
7	37:15 / 9:45	3 / 27	2 / 17	1'7 / 4'0	-8" / +4"

Note. Test administered as per Washington State's OSPI protocol and evaluated on standards set forth by this office. The number within the parenthesis indicates state standard.

Table 5, regarding Attitude toward Self and Self-Image, has detailed the following: The number assigned to each participant, and, baseline scores from September, 2008 to March, 2009, indicating change in attitude toward self and self-image.

Table 5

Attitude Towards Self and Self-image

Participant Number	Baseline Score September, 2008	Final Score March, 2009
1	26	42
2	25	38
3	29	55
4	18	45
5	16	39
6	15	35
7	18	37

Note. A score of 55 indicates participants rated each individual question at either a strongly agree or at the most positive feeling.

Table 6, regarding Commitment to Lifestyle Change, has detailed the following: The number assigned to each participant, and, baseline scores from September, 2008 to March, 2009, indicating change in commitment to a lifestyle change.

Table 6

Commitment to Lifestyle Change

Participant Number	Baseline Score September, 2008	Final Score March, 2009
1	1	5
2	1	5
3	2	5
4	1	5
5	1	5
6	1	5
7	1	3

Note. A score of 1 indicates no understanding or commitment to a healthy lifestyle. A score of 5 indicates behaviors and habits indicating a healthy lifestyle. Ratings were given by the researcher based on observational data, interview questions and participant journaling indicating lifestyle change.

Findings

As indicated above, the analysis of data presented a convincing argument that improvement or change in knowledge, behaviors, attitude, and lifestyle did occur for all participants in the study. The findings are detailed as follows:

1. As indicated in Table 1, positive attitude toward a physically active lifestyle increased. Participants began with a negative attitude toward exercise as was determined by administration of an attitudinal survey. By the end of the study, all participants but two, rated enjoyment of exercise, within the highest category. However, those two who did not rate physical activity at the highest rating did improve by three degrees on all individual questions within the category.

Through journal writings, personal informal and formal interviewing, and observations by the researcher, as fitness levels improved, how participants felt about working out improved. These collective data and field note observational data correlated the connection with the monthly re-taking of the attitudinal survey.

2. As indicated in Table 2, knowledge about healthy eating moved from lowest to highest by all seven participants. The researcher further used participant food diaries, participant planned menus and field notes that indicated knowledge gains were applied toward eating habits and food choice.

3. As indicated in Table 3, every participant lost weight and decreased body composition, with three of the seven meeting the suggested healthy standard of

24 per cent or lower. The four students who did not drop into the healthy range did however decrease their fat per cent by over 22 per cent.

4. As indicated in Table 4, all participants improved their fitness levels in all five components of fitness as indicated by fitness tests. Table 4 also indicates how participants test scores compare to state fitness standards. Many participants met standards in all tests but the long jump. The largest gains in fitness were seen in the cardio-respiratory component with all but one participant meeting or exceeding the state standard.

5. As indicated in Table 5, participant's attitude toward self and self-image improved but not to the highest degree. Six of the seven participants still rate themselves as needing improvement. Participant three rated herself the highest and she also met healthy standards for weight and body fat. Participant seven rated herself the lowest and although she lost considerable weight and body fat, she still has a way to go to meet healthy weight or body composition standards.

6. As indicated in Table 6, participant's commitment to a changed lifestyle increased to the highest degree for six of the seven participants. Journal writing, interviewing, and observational data verified this attitude and behavior shift. Participant number seven rated low due to lack of family support, both physically and emotionally, that did not allow her, at that stage in her life, to have consistent healthy lifestyle behaviors.

Further, as indicated on Table 3 and 4, participants became healthier as a result of weight loss and gains in fitness. Finally, one may conclude that the hypothesis was supported (i.e. Hispanic female adolescents who participate in an after-school weight reduction program at Toppenish High School will adopt a lifestyle change that will have a positive impact on weight loss).

Discussion

All participants in this study were successful because the program model encompassed the social, emotional, and physical needs of the participants. As discussed in Chapter 2, research showed that Hispanic females did not have the physical, social or emotional support for weight loss within their culture. When the additional criteria of poverty was added to the environment, issues of time, money and availability of facilities for the participant to address the obesity issue, was null. This study addressed the physical issues by making available the place, a workable time, and be of no cost to the participant. To address the social issues, the study looked to the research reporting the need for obese teen Hispanic females to find common ground within the ethos of their family's traditional culture and the Americanized culture. The researcher was sensitive to nutrition education that honored traditional foods, but gave strategies for adopting healthier styles of cooking. Further, the emphasis on healthy choices of American food was necessary as teenagers, acculturated in American society, were pulled by the media to unhealthy choice. The role of the female within the Hispanic culture was

another researched issue discussed in Chapter 2 that required special consideration by this study. Education was required to foster success for the participants. Skillful bridging of the gap between home and American society was a major factor that aided the participants in finding a workable solution. The intense educational portion of this program was valuable for addressing the above stated issues as well as addressing the emotional and social issues surrounding obesity for teenage females of any culture.

Following research by Newmark-Sztainer & Story (1997), this study designed fitness workouts and activities that were diversified, socially engaging, and at slowly progressing intensity levels. Therefore, participants were not overly physically uncomfortable or stressed. Finding that fine line of worked but not over-worked kept them physically and emotionally willing to stay the length of the study.

Summary

In Chapter 4, the researcher presented several Tables to illustrate how this study produced changes in behaviors, attitude, and fitness for all participants. The data showed strong gains in all categories under consideration. The researcher's hypothesis was therefore supported and the program developed for the study was viewed as successful in changing the lifestyles of obese teenage Hispanic females.

Chapter 5

Summary, Conclusions and Recommendations

Summary

The purpose of this qualitative study was to determine if, given an opportunity to participate in a behavior-focused nutrition education program, to what extent would Hispanic teenage females at Toppenish High School make changes to their lifestyle that would lead to weight loss.

Conclusions

Based on the review of selected literature in Chapter 2 and the analysis of data in Chapter 4, the following conclusions were reached:

1. Many factors have contributed to the obesity epidemic, specifically the disproportionate prevalence of obesity among teenage Hispanic females. Poverty, cultural values, and the level of acculturation into American society all contribute to the disparity of obesity for this sub-group. The societal role of the female in the Hispanic culture as well as the relationship of the mother and daughter influenced the degree of success for the individual participant.

2. The strong and diversified educational piece that was an integral aspect of the program developed for this study was vital to the success of the participants. This piece gave participants knowledge, skills and strategies to successfully maintain a healthy lifestyle outside and beyond the confines of the study. The education

around the emotional and social issues surrounding teen obesity provided the social and emotional support needed for the intenseness and length of the study.

3. When given the opportunity and means, obese Hispanic teen females did participate wholeheartedly in a weight-loss and educational program that helped them lose weight and make lifestyle changes that kept them from returning to obese status. The program was teen friendly, socially engaging, diverse in activity, sensitive to their physical limitations, and gave the participants an active role in the development of solutions for the problems they faced.

4. Although weight loss was significant and a factor for measuring success, the improved fitness and health of the participants was the largest benefit or outcome cited by the participants. The improved fitness level accompanied by dietary habits impacted the participants the most and they concluded that even if they were not thin by society standards, they felt healthier and happier. This acknowledgement of health prompted commitment to lifestyle change.

5. Conclusion of the analysis of data supported the hypothesis that Hispanic female adolescent females who participate in an after-school weight reduction program at Toppenish High School will adopt a lifestyle change that will have a positive impact on weight loss.

Recommendations

As a result of the conclusions cited above, the following recommendations have been suggested.

1. Any program adopted to effectively address the obesity issue within a school setting, needs to take into consideration the demographics, the dynamics, and the individual cultures of the students they serve. Being sensitive to the underlying causes or contributing factors for obesity enables a program to be developed that addresses those factors. Without addressing those factors, likelihood of returned behaviors that lead to obesity, will occur.

2. Knowledge and skills are necessary to change habits and behaviors. It is recommended that any weight-loss program be accompanied by an intense educational and skill building curriculum. The length of the program (seven months) was also beneficial. The longevity allowed participants time to practice skills, apply knowledge in a controlled setting, and change lifestyle habits. It is further recommended that the program include a parent educational piece so the parents are more engaged, more understanding, and have the knowledge and skills needed to better support their teen.

3. Weight- loss programs for teens must be developed with the social and emotional needs of the teenager in mind. Traditional forms of exercise or fitness instruction do not always match what the teen needs to stay engaged or motivated. Make exercise socially engaging, creative, and diversified to avoid boredom or loss of interest. Further, the workouts developed for obese teens must carefully be developed so as not to overly stress their physical bodies or destroy an already delicate self-esteem. Participants need a taxing workout but not one that causes

injury (high impact), pain (forcing repetitions beyond fatigue), over-stress (cardio work that pushes to nausea or vomiting), or embarrassment (asking to do exercises or activities their weight will not allow them to do). If need be, consult an exercise science specialist to develop appropriate workouts.

4. Celebrate the participant's gains in health and fitness, not just the losses on the scale. It is common for the teen female to have a body image in their head that, even with weight loss, is not obtained. For the Hispanic teen female, the focus of the program should be on improving health, finding her physical self, learning how to empower her own life, and learning the skills to be healthy within their traditional culture. Measure the success of the program in ways that weight loss is not the only means for participants to feel successful.

5. Educators seeking information related to weight loss programs for Hispanic female adolescents, may wish to utilize information used in this study or, they may wish to conduct further research more suited to their unique needs.

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APPENDICES

Page

APPENDIX A: APPLICATION FOR WEIGHT LOSS PROGRAM

Program Application

Full Name_____ Nick name_____

Date of Birth_____ Grade _____Phone number_____

Parent/Guardian name_____

Mailing Address_____

Home phone_____ Work phone_____

Physician_____ Preferred Hospital_____

Insurance Information_____

Emergency Contact_____

Height_____ Weight_____ Medical Issues_____

_____

On additional paper, please write an essay on why you wish to join this program. Include all reasons (medical, social, emotional) why you feel this program would benefit or help you.

What is your level of commitment to this program? What are your time restraints or commitments to work, school, or family that would interfere with your attendance.

What are your personal goals from this program?

What are your expectations of the program or the instructor?

APPENDIX B: PARENT PERMISSION

September 3, 2008

Dear Parents,

I am the Health / Fitness teacher at Toppenish High School. I know most of you from having your daughter in class, but for those who have not met me, I am looking forward to meeting you soon.

I am starting a program at Toppenish High School on September 14th that involves your daughter, her health, and her future. Obesity is a major health issue in our society and has a negative physical, social, and emotional impact on teenagers. To help your daughter begin making changes that will lead to a healthier lifestyle, I will be activating a daily two hour after-school program that will provide fitness opportunities, nutritional education, and emotional and social support to aid your daughter in losing her excess weight. The program will run from 2:45-4:45 everyday. We will exercise together, learn together, and develop a support system for each other and within ourselves. Throughout the program I will be monitoring heart rates, blood pressure, body composition, and diets to ensure weight loss is happening in a safe and healthy manner.

Weight loss and lifestyle changes require time and commitment. Your daughter and you, the parents, need to commit to the two hour time after school as well as to integration of the healthy habits into life at home. The consistency of these commitments will determine your daughter's success. If you can make this two hour commitment and support her at home with lifestyle changes, please sign and return this form to me. Further, your daughter will need clearance from a physician stating she is capable of participating in this program.

The first day of the program will be September 14th. Your daughter will need workout clothes and a good pair of athletic shoes. Everything else will be provided. Mostly, thank you in advance for your support of your daughter as she embarks on this intense experience. If you have any questions or concerns, feel free to call.

Doris Dorr
865-8043- school
877-6892- home

I _____ give permission for my daughter_____ _____to participate in the weight loss program at Toppenish High School. I will acquire medical clearance for participation and agree to seek doctor care if need arises.

_____Signature_____Date

APPENDIX C: PHYSICIAN PERMISSION

September 3, 2008

Dear Physician,

The patient you are seeing today has been invited to participate in a daily, two hour after-school weight loss program. The program will encompass ninety minutes of supervised physical activity (cardio-respiratory, muscle fitness, and flexibility) and nutrition education.

I am a Health and Fitness instructor at Toppenish High School with a specialty in exercise science and nutrition. There will only be seven girls in the program so personal attention and programming can be given to each girl. The program will progress slowly in intensity and low impact activities will be used to limit stress on the joints.

Please indicate that this patient, much like an athlete, is healthy enough to participate in this program. If there are limitations that need be met, please indicate below. If you have any questions or concerns, feel free to call.

_____

I_____ have seen_____
_____ in my office and clear her for participation in a supervised physical activity and weight-loss program.

_____Signature_____Date

Notes / Comments / Limitations:

APPENDIX D: FIELD NOTE FORM

Field notes from observations and interviews

Participant name_____ Date_____ Setting_____

Emotional state of participant:

Physical characteristics observed:

Issue / subject of discussion:

Comments or insights of participant:

Input by researcher/observer:

Summary of the observation:

Key points or issues to remember / follow-up:

APPENDIX E: ATTIDUDE SURVEY

At This Moment In Time…

An Attitude Survey

Circle the number that most reflects how you feel **at this time** about the statements given. There are no correct answers; it is about how **you feel**. A **one** indicates **negative feelings** or a **low level of agreement** and a **five** indicates **positive feelings** or a **high level of agreement**. Reflect on yourself and be honest in your response.

How I feel about myself:

I am in control of my weight.	1	2	3	4	5
I am in control of my diet.	1	2	3	4	5
I am pleased with who I am as a person.	1	2	3	4	5
My weight and my happiness are related.	1	2	3	4	5
I like the way I look most of the time.	1	2	3	4	5
My weight has nothing to do with my personality.	1	2	3	4	5
I can set goals and keep them.	1	2	3	4	5
I can overcome difficult situations.	1	2	3	4	5
I handle stress in a healthy way.	1	2	3	4	5
It is more important to be healthy than skinny.	1	2	3	4	5
I eat for reasons other than hunger.	1	2	3	4	5

How others view me

Others think it is my fault I am overweight.	1	2	3	4	5
I am treated differently because of my weight.	1	2	3	4	5
I am not included in some social activities because of my weight.	1	2	3	4	5
Others think I am overweight because I am lazy.	1	2	3	4	5

I do not have a boyfriend because of my weight. 1 2 3 4 5

How I feel about exercise / activity:

Exercise is fun and rewarding. 1 2 3 4 5

I enjoy being physically active. I would rather be moving than sitting. 1 2 3 4 5

I enjoy breaking a sweat. 1 2 3 4 5

I don't quit when exercise is uncomfortable. 1 2 3 4 5

I am physically capable of doing most exercises or activities. 1 2 3 4 5

Exercise gives me energy. 1 2 3 4 5

I am an athlete and enjoy sports. 1 2 3 4 5

I like working out alone. 1 2 3 4 5

I like working out with others. 1 2 3 4 5

Nutritional knowledge:

I know what nutrients are and what they do for the body. 1 2 3 4 5

I know the food groups and the amount of suggested servings. 1 2 3 4 5

The foods I eat are based on healthy choices. 1 2 3 4 5

The number of calories I consume is based on my exercise level. 1 2 3 4 5

I choose foods based on information on the food label. 1 2 3 4 5

I have a list of strategies to keep myself focused on a healthy diet. 1 2 3 4 5

I know the importance of a food diary and portion control. 1 2 3 4 5

I am consumer savvy. 1 2 3 4 5

APPENDIX F: FITNESS EVALUATION

Fitness Evaluation

DATE OF TEST_____

CARDIO-RESPIRATORY

Resting pulse_____ Blood Pressure_____ Mile_____

STRENGTH

Modified Pull-up_____ Standing Long Jump_____ Neutral Crunch_____

MUSCULAR ENDURANCE

Push-ups_____ Wall-sits_____ 1 Minute Sit-ups_____

FLEXIBILITY

Sit and Reach_____ Prone Shoulder Reach_____

State Standards for Fitness:

Resting Pulse- 65

Mile- 9:32

Modified Pull-up- 15

Standing Long Jump- own height

Neutral crunch- 10

Push-up- 25

1 minute sit-up- 35

Wall-sit- 3 minutes

Sit and Reach- 4 inches

Prone shoulder reach- 12 inches

WEIGHT LOSS LOG

Date	Weight	Lbs. Lost	Body Fat %	%Lost	Diet Followed

MONTHLY SCHEDULE

September:

- Establish an emotional, social and physically safe environment.
- Establish session routines.
- Establish use and purpose of journals, fitness logs, and food diaries.
- Introduce fitness testing and fitness protocol.
- Begin low intensity, low impact, and low stress exercises and activities.

October:

- Increase intensity and duration of exercise.
- Begin goal setting.
- Begin nutrition education.
- Begin teaching fitness and exercise science information.
- Discuss the emotional and social issues related to obesity (Self-esteem building).

November:

- Increase intensity of exercise and add higher impact activities.
- Teach healthy habits at home and outside the program. Require home activity logs. Teach trouble-shooting strategies.
- Begin cooking labs. Teach consumer literacy around food shopping and diet and weight-loss products.
- Continue with nutrition education and fitness education.

December:

- Increase intensity of all activities and increase cardio duration to 40 minutes.
- Begin planning and choosing own workout options.
- Teach strategies for dealing with holiday temptations.
- Exercise options during the holiday break discussed.

January:

- Review of all nutrition and fitness education.
- Discuss social issues faced with new weight (interest from boys, engaging in social events or activities).
- Look at journey so far and refine short and long term goals.
- Begin workout without lead from researcher.

February:

- In-depth discussions about what led them to their weight problem and how they will avoid going down the same path again (social, emotional, and physical).
- Teach stress reduction techniques.
- Push self-esteem building/self affirmations.

March:

- Individualized workouts, diets, and stress reduction techniques planned out by the girls.
- Introduce recreation / sport activities they can engage in to replace the social and emotional support received from this program.
- Visit restaurants to learn healthy choices and to celebrate success.
- Do final fitness testing and do reflections on the program and their work.
- Celebrate with friends and families.

APPENDIX I: Daily SCHEDULE

Outline of Daily Schedule

Meet and Greet- An informal conversation was held with each participant. Discussion on how the day went, updates of food diaries and journals were completed.

Weigh In – Participants weighed in daily and recorded the information. On Friday, body composition and body measurements were also taken.

Warm up – Participants prepared for further exercise by riding a stationary bike for 5-20 minutes, depending on the rest of the planned activities.

Main workout – 20 to 60 minutes of cardio

Options: Elliptical, step aerobics, walking/running, Taebo, interval training, circuit training, games and team challenges.

30 minutes of muscle fitness

Options: Weight lifting, exercise bands, physio balls, medicine balls, isolated calisthenics.

Cool down – 5-10 minutes of flexibility

Options: Stretches, isolated yoga poses, Tae Chi.

Educational Sessions – 20 to 30 minutes of instruction / learning

Options: Nutrition, self-esteem, social and emotional health, physical activity outside the program, coping with stress, goal setting, healthy habits at home, trouble-shooting problems / weak moments, cooking labs, consumer literacy.

Notes:

The researcher spoke individually to each participant daily.

Fitness testing occurred one day a month.

Cooking labs were held at the end of the session. Time was added to the program but the food cooked served as their evening meal. Parents were notified in advance.

NUTRITION EDUCATION

* Nutrition education was ongoing and occurred informally as well as in formal settings. Information was covered more than one time, in different contexts, and on a needs basis. The following topics were covered over the course of the program.

How to keep a food diary and why it is important to weight control.

The six nutrients and how the body needs and uses them.

The food groups and where to find the nutrients in the food groups.

Concept of healthy and unhealthy foods. Included here is cooking styles, natural versus processed foods, and individual concerns such as fat, salt, and sugar.

Metabolism, calorie, energy, calories in balanced with calories out, calculating caloric need, finding individual caloric requirements.

Safe dieting based on proper calorie cutting. Portion control.

Diet scams, diet and weight loss products, media literacy around advertisement for diet and fitness products.

The long term consequences of obesity on health as related to food intake.

Menu planning.

Going from 3 to 6 meals a day.

Reading food labels.

How to make healthy substitutions when cooking or choosing foods.

Cooking labs to practice creating menus, sample healthier food choices, healthy cooking options, take home healthy ideas to change lifestyle, and weighing and measuring for portion control was addressed.

Strategies for success with busy lifestyle, social situations, and eating out.

Sample of Journal Entries

*** Participants wrote in their journals daily. They were allowed free write as well as answering a prompt. Sometimes writing took place at the end of a session if the researcher felt there was a need for expression of thought or emotion. The following are samples of prompts used.**

Day 1: Write a letter to yourself as you begin the first step of changing your life. What are your goals and hopes? What are your fears and concerns? What do you need to tell yourself to make this a success?

Week 2: What have you learned about yourself in the last week?

Week 3: What barriers are you facing right now to keep you from devoting 100% effort into the program?

Week 4: What is the hardest part of the program for you emotionally right now?

Week 5: How has food serviced you emotionally and socially over the years?

Week 6: What is your most embarrassing diet habit and are you now willing to give it up?

Week 7: What is your stress level now that the workouts are getting more intense? What do you need from me to keep you motivated?

Week 8: What/who is the biggest sabotage to your staying on track with your diet and exercise?

Week 9: Are you physically and socially ready to face the holiday food issues?

Week 10: How did you do over vacation? How do you feel about your behaviors and choices?

Week 11: How confident are you feeling about your nutrition knowledge and your ability to make informed decisions?

Week 12: After looking back at your first fitness evaluation, how do you feel about your scores and you accomplishments now?

Week 13: I am leaving you for two weeks. How are you feeling about that? What will you do for yourself to keep moving forward?

Week 16: You have all lost over 50lbs. Sitting in front of me are new girls! What has changed socially for you? Are there good and bad sides to the weight loss?

Week 17: I gave you options yesterday for exercise and then told you to go do them rather then lead you through. How/what did you feel about that?

Week 18: Why would I be concerned when I see in your food diaries you are not eating enough or the right foods? Tell me from a knowledge base why this is not ok.

Week 19: Look at your data (fitness, weight, fat %) and write three affirmations to yourself.

Week 20: Yesterday we laughed through most of our session. Did any of you ever think "exercise" could be fun? Tell me how you felt about yesterday and about exercise in general. What is your attitude about it now?

Week 21: Spring stress is here. List your top three stressors and what you think you can do "healthfully" to alleviate them.

Week 22: What old habits are you fearful of returning to when you don't have me or the group to keep you on track?

Week 23: In the fall you wrote a letter to yourself. Go back and read it. After, write a new letter to yourself.

Week 24: How does it feel to be this "new" person? What are you excited about doing or wearing or trying?

Week 25: Success is all based on planning. What are your plans for success?

Week 26: Reflect on the whole program. Reflect on your beginning and end. Just write and tell me all you think and feel right now about yourself and your friends here in this group. Be ready to share out loud something of what you write.