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**EATING BELIEFS AND BEHAVIORS IN MEXICAN-AMERICAN
PREADOLESCENT CHILDREN**

By

Liesl Thea Lappala

THESIS

**Presented to the Graduate Faculty of University of
University of the Incarnate Word
In Partial Fulfillment
Of the Requirements
For the Degree of**

MASTER OF SCIENCE

UNIVERSITY OF THE INCARNATE WORD

May 2000

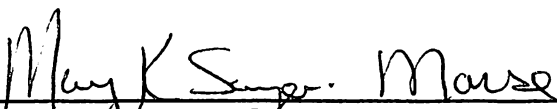
EATING BELIEFS AND BEHAVIORS IN MEXICAN-AMERICAN
PREADOLESCENT CHILDREN

A Thesis

by

LIESL THEA LAPPALA

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Acknowledgements

My sincere thanks to Mary Kay Sawyer-Morse and Alicia Betsinger who have been extremely patient and kind throughout this process. In addition, I would like to acknowledge my committee members for their time and support.

Abstract

Eating Beliefs and Behaviors in Mexican-American Preadolescent Children

Liesl Thea Lappala, University of the Incarnate Word

Traditionally the occurrence of eating disorders has been noted in Caucasian, adolescent females. The purpose of this study was to determine whether Mexican-American preadolescent children possessed disordered eating behaviors and how this affects their body image. The study sample consisted of 68 fourth, fifth, and sixth grade students. Participants attended either School A or School B located in San Antonio, Texas. Appropriate parental consent was obtained before any student participated. The sample consisted of 41% males and 57% females. Ages ranged from 9 years of age to 12. The majority of participants were Mexican-American (84%).

Study participants completed the Kids Eating Disorders Survey (KEDS), a series of self-esteem questions, peer and family influence questions, and a figure rating scale. All surveys were administered by the Principle Investigator or a trained nutrition student from the University of the Incarnate Word in San Antonio, Texas.

Results of the KEDS indicated 54% of the children wanted to lose weight and 30% were afraid to eat for fear they would gain weight. Additionally, results showed 7.1% of the students had tried vomiting in order to lose weight, 2.9% had taken laxatives, and 1.5% claimed to use diuretics. Approximately 46% claimed to have exercised more than 1 hour per day in order to lose weight.

Coefficient alphas were used to measure the internal consistency of various measures in the study. The reliability for questions 21-27 examining family and peer influence was .28 illustrating poor internal consistency. A principal component factor analysis was performed on the first 12 items of the KEDS. Factors were based on those used by Childress and used to determine if there was a relationship between eating and weight dissatisfaction and disordered eating practices. Relationships were found in questions 1,2,3,4,6,7 and question 9 on the KEDS.

T-tests were performed in order to examine the differences between the yes/no responses for the first 10 questions on the KEDS and BMI score for boys and girls. For boys significance was found for the questions "Do you want to lose weight now?" ($t=4.01$, $df=26$, $p<.001$), "Have you ever thought you looked fat to other people?" ($t=4.17$, $df=24$, $p<.004$), and "Have you ever exercised a lot to lose weight?" ($t=2.44$, $df=26$, $p<.026$). Similarly, questions "Do you want to lose weight now?" and "Have you ever exercised a lot to lose weight?" were significant for the girls.

The study also looked at differences between three perceived weight groups (under, normal, and overweight). The three groups consisted of weight dissatisfaction, purging, and binging/purging. Significance was found for weight dissatisfaction only ($sig.=.000$). Pearson correlations were performed comparing the KEDS questionnaire with the self esteem questions. Several moderate correlations were found. Most notable were those that wanted to lose

weight (.387) and had been afraid to eat for fear of gaining weight (.364) also wished they felt better about themselves.

Finally, the study looked at whether or not children who perceive themselves as underweight, normal weight, or overweight, differ significantly on the KEDS, binge eating behaviors, family and friends weight behaviors and beliefs, and body dissatisfaction. The results indicated no statistically significant findings between any of these variables.

This study did not support our first hypothesis that children who perceived themselves as underweight, normal weight, and overweight do not differ significantly for disordered eating. In fact, results indicated differences existed among the three groups for weight dissatisfaction. The findings indicate the overweight group of children were more dissatisfied with their current weight than those who were normal or underweight.

Additionally, the results of this study found no significant relationships between children who perceive themselves as underweight, normal weight, or overweight in relation to disordered eating, binge eating behaviors, family and friends weight behaviors and beliefs and body dissatisfaction. However, when comparing the current study with other authors, data supports a possible correlation between a child's home life and whether or not they engage in any kind disordered eating behaviors. The current research does not support this however.

Lastly, results supported the hypothesis that among children perceiving themselves to be overweight, body dissatisfaction, self-esteem, and beliefs of

significant others is significantly related to disordered eating. The current study found self esteem items 28, 32, and 35 significant predictors of weight dissatisfaction. The findings of other authors who found the self esteem of obese children is generally lower than that of normal weight children, supports this current data.

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CHAPTER I

Introduction

Traditionally the occurrence of eating disorders has been noted in Caucasian, adolescent females. However, the prevalence of these disorders does not adhere strictly to these stereotypes. Research has found that sufferers of anorexia and bulimia nervosa can be of any gender, age, and ethnic background (Kreipe, 1995). Surveys have shown that adolescents and preadolescents as young as the third grade, want to be thinner and have attempted to lose weight (Gustafson-Larson, 1992). Since dieting is being noted earlier in children, it is important to identify unhealthy weight loss behaviors so they do not escalate into more severe problems such as anorexia or bulimia.

The relationship between childhood eating pathology and the development of eating disorders later in life is unclear. A large prospective study correlated specific early childhood problem eating behaviors with the development of bulimic and anorexic symptoms in adolescence (Childress, 1993; Marchi, 1990). The authors predicted that children who had disturbed eating behaviors in childhood were more likely to develop more serious eating problems 8 – 10 years later. Lifelong attitudes and behaviors associated with eating, dieting, and weight are established during childhood and early adolescents. It is therefore important to identify those factors underlying young children's dysfunctional attitudes toward weight and eating in order to decrease

the risk for the development of a clinical eating disorder such as anorexia or bulimia (Koff, 1993).

The prevalence of overweight children in the years 1988 through 1994 was double that of the previous decade (Texas Department of Health). Hypocaloric dieting has been associated with decreased basal energy needs and obesity in adolescents and may predispose children to binge eating and unhealthy dieting behaviors. Therefore, if disordered eating is widespread in children, it may be a contributing factor in the observed increase in pediatric obesity in the United States (Mellin, 1992). The data from the Third National Health and Nutrition Examination Survey (NHANES III; 1988-1994) provides the most recent national estimates of overweight children aged six to eleven years of age and adolescents age twelve to seventeen. The findings of this survey indicate substantial proportions of children and adolescents are overweight (14% of children and 12% of adolescents) respectively. Looking at the Mexican-American population, the study found approximately 19% of children and 15% of adolescents were overweight. The NHANES III considered children and adolescents overweight when their body mass index (BMI) was at or above sex and age specific 95th percentile BMI cutoff points. According to the Texas Department of Health, about 4% of children in the late 1960's to early 1970's were considered obese and now it is believed to be around 10%. Additionally, almost a third of the Texas adult population reported being overweight and the

incidence of obesity in school-age children is increasing each year (Texas Department of Health).

The typical high fat, low fiber diet of the industrialized West, particularly when associated with inadequate exercise, is likely to advance the onset of puberty (Stoll, 1998). In Western populations, the mean age of girls at the onset of menarche has fallen from about 16 since the beginning of the century to about 13 years of age today (Stoll, 1998). Since children are advancing through puberty at a much earlier age than in the past, this may account for the increase in obesity and the increase in childhood dieting and distorted body image. In a recent study, it was determined that children are beginning menarche as young as eight or nine years of age (Herman-Giddens, 1997). As noted earlier, the onset of puberty has long been thought of as the time when disordered eating behaviors and distorted body image are prevalent. However, due to the current Western diet and the increased incidence of childhood obesity, the age of puberty is much younger than it ever has been before. This may contribute to the increased incidence of younger children engaging in disordered eating behaviors and having distorted body images.

Purpose

Because weight and body image concerns are thought to occur primarily in the Caucasian female population, little research has been done looking at the prevalence of dieting and disturbed body image in non-Caucasian populations.

Mexican-Americans make up the largest and fastest growing sub-group of the overall Hispanic community with approximately 43% being age 19 or younger (Guinn, 1997). A lack of knowledge concerning dieting behaviors and body image among this population underscores the need for further research. The purpose of the research is to investigate dieting behaviors and beliefs of Mexican-American children and the impact on body image and to develop a more complete picture of how children's family and peers may influence them in relation to dieting behaviors, beliefs and body image.

Hypotheses

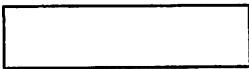
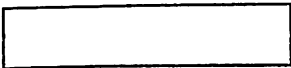
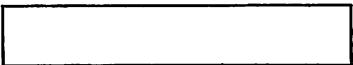
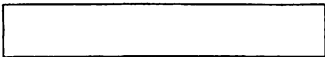
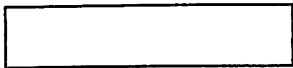
The following null hypotheses will be tested:

1. Children who perceive themselves as underweight, normal weight, or overweight do not differ significantly for disordered eating. This will be tested using ANOVA procedures.
2. Children who perceive themselves as underweight, normal weight, or overweight do not differ significantly on:
 - a. disordered eating (KEDS)
 - b. binge eating behaviors
 - c. family and friends weight behaviors and beliefs
 - d. body dissatisfaction

This will be tested using MANOVA procedures.

3. Among children perceiving themselves to be overweight, body dissatisfaction, self-esteem and beliefs of significant others is significantly related to disordered eating. This will be tested using multiple regression.

Model 1: Experimental Design



CHAPTER II

Review of Relevant Literature

Dieting behaviors among children

Popular thinking is that dieting and the onset of eating disorders does not start until adolescence. This is when onset of puberty occurs with an accompanying increase in fat stores in the body thus, puberty has been indicated in much of the research as a major causative indicator and the catalyst for eating disorders for adolescents. However, some studies have indicated that dieting behavior starts before the onset of puberty.

Recent studies of samples of preadolescents have indicated that views on body image and eating are formed prior to this biological landmark. These investigations appear contrary to the assumption that distorted eating behaviors are a problem found only in the adolescent population. Sands (1997) looked at 61 preadolescent children aged 10 and 11 years old in an urban, Victoria, Canadian State elementary school. This group of children was assessed for body image satisfaction, participation in activity, self-worth and a measure of eating attitudes and behavior using the Eating and Me scale. This longitudinal study took place over 9 months found that females selected a body shape much larger than their actual body shape indicating a distorted body image. Males were also found to choose a body image much different from their actual body shape. They however perceived their current body shape as being smaller than

their actual body shape. In addition, this study found females at this age were more inclined to involve themselves in weight loss practices than the males. For females in this study, less frequent participation in physical activity was related to lower self-esteem and greater body dissatisfaction.

A study conducted by Maloney (1989) looked at 356 boys and girls from two elementary schools. The students were predominately white (89% to 99%) middle to upper class children in grades third through sixth. Results found that preadolescent children were well aware of their body shape, most notably their amount of body fat. Edelman (1982) found that children as young as age 5 displayed an apparent motivation to avoid obesity and that children (especially after age 5 years) recognized a relationship between eating and behavior. Participants of Edelman's study were pupils at two elementary schools serving a predominately white working and middle class community. The sample consisted of 40 girls and 36 boys in grades kindergarten through sixth grade.

A review of research examining children's attitudes toward thinness found that children acquire cultural values of beauty prior to adolescence and that the longing to be thin is desirable before beauty (Feldman, 1988, Thompson, 1997). Thompson's study looked at a random sampling of White and Black fourth grade children. The number of students participating was 817 of which 52% were white and 51% were female. As early as 6-7 years, 42% of the females in the study preferred body figures different and thinner than their own (Thompson, 1997). Thompson's study also found that although 46% of Black

females wanted to be thinner, they choose significantly larger body sizes than those of White females. Cross-gender comparisons indicated females and Whites experienced more body dissatisfaction and weight concern than males and Blacks (Thompson, 1997).

In a study conducted by Collins (1991), the author modified adult figure silhouettes to include children's figures and, in a cross-sectional survey of first through third graders, found an overall preference for thinness among all age, weight, and racial groupings.

Studies conducted over the past 15 years have found that some preadolescent children may be dieting due to body weight concerns. In a study conducted by Mellin, (1986), the dieting behaviors of 494 urban white, middle-class children in grades third through twelfth were examined. It was found among the female population 45% of the third graders restricted their dietary intake as did 80% of fourth and fifth graders and 65% of sixth graders. In addition, Mellin found 10% of the 9 –10 year olds engaged in purging behavior. In other studies, research has confirmed that concerns about weight and dieting begin to appear before adolescence.

The research has consistently shown greater prevalence of weight concerns and dieting among female children with approximately 50% of preadolescent girls and approximately 30% of boys wishing to be thinner (Rolland, 1997). Additionally, Rolland looked at body fat perceptions and eating attitudes among 244 Australian schoolchildren. The study examined grades 3

through 6 using the Children's Eating Attitudes Test (ChEAT) to evaluate dieting behavior and perceived ideal body weight. Analysis of the data by gender and grade indicated that significantly more males reported bingeing than females, and significantly more third-grade children than older children reported bingeing and vomiting. In examining dieting behaviors and attitudes, the researchers found that 54% of fourth grade girls wanted to be thinner, 43% had tried to lose weight, and 41% chose a thinner ideal body picture than what they currently were. In the fourth grade boys, 19% wanted to be thinner, 19% tried to lose weight, and 14% chose a thinner ideal picture. Fifty percent of fifth grade girls wanted to be thinner, 39% had tried to lose weight, and 42% chose a thinner ideal body picture. In the fifth grade boys, it was found that 38% wanted to be thinner, 19% had tried to lose weight, and 25% chose a thinner ideal body picture. Finally, among the sixth grade girls, 41% indicated they wanted to be thinner, 41% tried to lose weight, and 38% of the boys indicated they wanted to be thinner, 21% had tried to lose weight, and 30% chose a thinner ideal body picture. These findings indicate that the concern of body weight for children starts well before the onset of adolescence.

In the same study by Rolland, frequencies of children responding "sometimes" or more often to ChEAT items about various eating and weight-related behaviors were totaled. The percentage of children reporting these behaviors were: dieting 28%, exercising to lose weight 59%, bingeing 28%, and vomiting after eating 10%. When answering the question "Have you ever wanted

to be thinner?" 50% of the girls and 33% of the boys said yes. Approximately 40% of the girls and 24% of the boys responded yes to the questions "Have you ever tried to lose weight?". Although this study found the majority of overweight children wanted to be thinner, it was also found that normal weight children and underweight children desired to be thinner.

Behaviors related to body weight were also studied by Gustafson-Larson (1992) in 457 fourth grade students attending rural schools in Iowa. Using the Eating Attitudes Test (Garner, 1979), it was found that 60% of the children (combination of male and female) interviewed either very often or sometimes wished they were thinner, worried about being fat, and weighed themselves every day.

Influence of family and peers

Maloney (1989) looked at third through sixth grade students to determine dieting behaviors and eating attitudes. According to the children's responses, 69% of those surveyed reported mothers who dieted at some point in the child's memory. In addition, 13% reported their mothers as being overweight and 18% reported their fathers as being over weight. A total of 15% of the responses indicated that they perceived their peers would like them more if they were thinner. Gustafson-Larson (1992) found a large percentage of children reported that someone in their family very often or sometimes dieted (81.8%) or worried about being fat (71.6%). This evidence suggests that the child's home life may be one factor in whether or not they will diet in some way.

Body Image

Obesity is the number one risk factor for disease in the Mexican-American population (Murphy, 1990). It has been shown that the self-esteem of obese children is generally lower than that of normal weight children (Feiker, 1973); Sallade, 1973). Katz-Mendelson (1982) looked at the relationship between body-esteem and self-esteem in both obese and normal weight children. Thirty-six elementary age students ranging in age from 7.5 – 12 years of age from a middle-class parochial Hebrew day school in Montreal, Quebec participated. The students were asked to complete the Piers-Harris Children's Self-Concept Scale which asked the children to respond to questions concerning how they felt about themselves. The results showed a positive correlation between body-esteem and weight indicating an inverse relationship. The more overweight the child was, the lower his/her body esteem appeared to be. The study suggests that overweight children are aware of cultural stereotypes focusing on body weight. It was thought that children were able to apply these social stereotypes to themselves. Notably, even though body-esteem and weight were positively correlated, there was not a positive correlation between body weight and self-esteem. This indicates in this population, the children's self-esteem seemed to be preserved no matter what the body weight was or how they felt their body looked to others.

Recently, it was concluded that adolescent Mexican-American females' self-esteem is related to and highly influenced by, body image (Guinn, 1997).

Guinn's study looked at students from three middle schools in the lower Rio Grande Valley region of Texas. The ethnic composition was 87% Mexican-American, 12% White non-Hispanic, .4% African American, and Native American, Asian, Pacific Islander or other comprised 1.4%. The study noted that the Mexican-American children were shorter and heavier and tended to have more body fat in the upper and central portions of the body. It is thought that this greater weight for height could influence this population's perception of the cultural norm for body size.

As mentioned earlier, eating disorders have now been identified in a variety of ethnic origins (Mumford, 1993). Hill (1995) looked at middle school aged Asian girls living in England. The majority of students were Asian (n=55) with the remainder being Caucasian (n=42). This study found that among 9 year olds, body shape dissatisfaction and dieting behaviors were shown to be present. The authors concluded that 9 year old girls not only showed awareness of dieting, but were capable of putting their motivations into action (Hill, 1995). The results demonstrated that dieting behavior and body dissatisfaction are found in races other than the Caucasian population.

A body of research evidence shows that adolescents who perceive themselves as overweight have a greater chance of participating in dangerous dieting behaviors and have disturbed body images (Davis, 1994). Davis' study which used data from the Mexican-American portion of HHANES, looked at 429 males and 485 non-pregnant females ages 12 – 19 years old. The study which,

looked at self reports of weight status in the Mexican-American population, reported a significant number of adolescents who perceived themselves overweight. The percentage of females who considered themselves overweight increased with age starting at 38% of 12 –14 years olds, to 46% of 15-17 year olds, and 55% of 18-19 year olds. The percentage of adolescents self-described as overweight rose with increasing BMI. The results found that among Mexican-American adolescents, more females than males described themselves as overweight, whereas more males described themselves as underweight (Davis, 1994). These results suggest many Mexican-American adolescents do not think they are at the appropriate weight. As noted in early studies, this increased perception of being over weight maybe related to body image.

Finally, significant results were found in a study looking at the ethnic and socioeconomic differences in dieting and body image among adolescents. Story (1995) looked at 36,320 students grades 7 – 12. The sample was approximately 86% White, 8% Black, 1% Hispanic, 2% Native American, and 3% Asian American. The prevalence of frequent dieting was highest among the Hispanic females. Intentional vomiting was lowest in whites and highest in Hispanics and American Indians. In addition, laxative and diuretic use was noted in twice as many Hispanic girls as compared to the other ethnicities (Story, 1995).

Social Cognitive Theory

Social Cognitive Theory addresses both the psychosocial dynamics influencing health behavior and methods promoting behavior change. It

emphasizes that a person's behavior and cognitions affect future behavior.

Crucial personal factors in this theory are the individual's capabilities to symbolize behavior, to anticipate the outcomes of behavior, to learn by observing others, to have confidence in performing a behavior, to self-determine or self-regulate behavior, and to reflect and analyze experience (Glanz; Health Behavior and Health Education, 1997). For this study, we looked to see if a child's peers or family had any influence on how they felt about themselves in relation to body weight and the desire to be thinner.

Importance of Research

The literature demonstrates that children are showing signs of dieting behavior and body dissatisfaction at an earlier age than traditionally thought. Physiologically, restricted energy intake among preadolescents not only can retard growth and sexual development; it can also negatively affect learning, ability to concentrate, and school performance (Pugliese, 1983). It is well documented that dieting and body image have long been a problem in the Caucasian female population. However, until recently, very little information has been made available concerning the Mexican-American population. Since this population is very young (43% being 19 years old or younger), and dieting and disturbed body image is prevalent in other ethnicities of the same age group, more research in this area needs to be done.

CHAPTER III

Methodology

Participants

Two Elementary schools in San Antonio, Texas (school A and school B) were the two sites of the study as they were 90% Mexican-American. Both of these schools are private Catholic schools. School A is an affordable Catholic elementary school with tuition being \$150 per month. Approximately 50% of the student's in School A receive reduced tuition. School B's tuition is affordable for most middle class families with tuition being \$190 per month. Information concerning percentage of students receiving reduced tuition is not made available by the school. Male and female students in the fourth, fifth and sixth grades were recruited on a voluntary basis after parental consent was obtained. The ages of the participants range from 9 – 12 years of age. The study was approved by the University of the Incarnate Word Institutional Review Board to assure all ethical standards involving the children were upheld. See the Appendix A for IRB form.

Instrumentation

Survey

Participants completed the Kids' Eating Disorders Survey (KEDS) (see Appendix B) this is a 14 item self-report developed by Childress et al (1993). It included a set of eight child figure drawings for each gender to graphically assess

weight and body dissatisfaction. These figures were developed for use with children. The children simply labeled the figure they felt most represented themselves and then the figure they would most like to be like. Childress determined the sensitivity of the KEDS to be 78% and the specificity to be 68%. The KEDS was found to be internally consistent (Cronbach's $\alpha = 0.73$) and to have good test-retest reliability ($r = 0.83$) (Childress, 1993).

The following questions were added to measure how a child's family and peers might influence them in relation to dieting behaviors, beliefs, and body image. A four point Likert scale was used. The principle investigator based on the construct identified above developed them. See Appendix B for questions in the survey.

1. *Is there any member of your family who is currently on a diet?*
2. *Is weight talked about in your house?*
3. *How often is someone in your family on a diet?*
4. *Do your friends feel that being thin is better?*
5. *My friends would like me better if I weighed less*
6. *My friends believe that dieting reduces weight*

An additional section was incorporated into the survey, which examined the child's self-esteem. These questions were adopted from Rosenberg (1965) and scored using a four point Likert scale and were developed for use with adolescent children. The wording of the questions was slightly altered by a

Professor of Education at the University of the Incarnate Word to meet the reading level of these preadolescent children.

1. *I feel I am equal to others*
2. *I feel that I have many strengths*
3. *All in all, I think I am a failure*
4. *I am able to do things as well as most people*
5. *I feel I do not have much to be proud of*
6. *I feel positive about myself*
7. *For the most part, I am happy with myself*
8. *I wish I could feel better about myself*
9. *I feel useless at times*
10. *At times I think I am no good at all*

Additionally, the following demographic questions were asked:

1. *Age,*
2. *Grade, *
3. *Gender and*
4. *Ethnicity*

In total, the survey contained 42 questions including demographic information (Appendix B). The child's anonymity was strictly protected. The principle investigator or a trained undergraduate nutrition student from the University of the Incarnate Word administered all surveys during regular class times for the students. The students were asked to answer the questions to the

best of their ability. Under no circumstances was a student allowed to discuss the questions with their peers. All questions were referred to the Principle Investigator or another trained nutrition student. Those students not completing the study were given a nutrition lesson developed by the Principle Investigator and administered by a trained nutrition student in a nearby classroom. Nowhere on the survey was the child asked to identify him/herself by name. Once the student completed the questionnaire, he/she placed it into an envelope provided by the investigator. The principal investigator or another nutrition student escorted the child to the school nurse's office to be weighed and measured.

Body Mass Index

Heights (in inches) and weights (in pounds) of all the children participating were taken at the same time the survey is administered. Body mass index (BMI) was calculated using the following equation: body weight in Kilograms/height in meters². The BMI was used as an indicator of the child's actual adiposity level as compared to the Figure Ratings Scale. *Healthy People 2000* used BMI values above 20-25 to indicate obesity in the preadolescent and adolescent population (*Healthy People 2000* 1990). Once the child had been escorted to the nurses office, their survey was taken out of the envelope by the principal investigator and each student was weighed and measured using a balance scale provided by the school. The children were not able to observe each other during this process. Once either the Principle Investigator or a trained student had written

down the height and weight, the survey was placed back into the envelope and sealed. No materials were left at the school.

Statistical Analysis

Descriptive statistics were computed for each variable (age, race, height, weight, BMI, and individual scores on the KEDS). T tests were performed to examine how the children saw themselves and how they would like to see themselves. Pearson Correlations were calculated for all study variables. ANOVA procedures were used to test for differences on disordered eating. MANOVA procedures were used to test for differences on disordered eating, binge eating behaviors, family and friends weight behaviors and beliefs, and body dissatisfaction. A principal component factor analysis was performed on the KEDS scale.

CHAPTER IV

Results

The sample was comprised of 68 fourth, fifth and sixth grade students. This number is a limited representation of those students asked to participate. A total of 238 students were given a consent form with only 29% of these students returning the form signed. The low response rate may be attributed to several factors including: students losing the consent form, teachers failing to provide the form, and students not giving the form to their parents. The students ranged in age from 9 to 12 with a mean age of 10.47 years. Female students made up approximately 57% of the sample while the remaining 41% were males. Over three fourths of the students described themselves as "Mexican American" (84.3%; $n=59$) with the remainder of the sample consisting of "White – non-Hispanic", American Indian, and other.

Table 4.1: Demographics of the Sample – Gender

Sex	Frequency	Percent
Male	29	41.4
Female	40	57.1
Total	69	98.5

Table 4.2: Demographics of the Sample - Age

Age	Frequency	Percent
9	9	12.9
10	23	32.9
11	31	44.3
12	5	7.1
Missing	2	2.9
Total	70	100%

Table 4.3: Demographics of the Sample - Ethnicity

Race	Frequency	Percent
White, non-Hispanic	3	4.3
Mexican-American	59	84.3
American Indian	1	1.4
Total	63	90

Approximately 54% of the participants responded that they wanted to lose weight now and 30% that they were afraid to eat for fear they would gain weight. In comparison, 28.6% of the students claimed to have tried losing weight by means of dieting and 5.7% through fasting. Results showed 7.1% of the students had tried vomiting in order to lose weight, 2.9% had taken laxatives, and 1.5% claimed use of diuretics. A little under half of the students (45.7%) claimed to have exercised more than 1 hour per day in order to lose weight.

Internal Consistency

Coefficient alphas were used to measure the internal consistency of various measures in the study. The alpha coefficient for the KEDS (Questions 1 through 12) was .64 which is not particularly high for this measure. This may have been in part due to the limited number of participants of the study.

Alpha coefficients for questions 18 through 20, which examined peer influence, was .60. The reliability for questions 21 through 27 examining family and peer influence was .28 illustrating poor internal consistency.

These items were developed by the principal investigator and did not perform as a scale. These items were used independently in further analysis. The coefficient for questions 28 through 37, examining self-esteem, was .86, which showed good internal consistency for this scale.

Factor Analysis

A principal component factor analysis was performed on the KEDS scale. Table 4.4 highlights the results. This was performed on the first 12 items of the KEDS. Component one contained variables related to eating and weight dissatisfaction. Component two contained “used diet pills”, “used laxatives”, “used diurectics”, “vomited”, “fasted” variables. Factors were based on those used by Childress and used to determine if there was a relationship between eating and weight dissatisfaction and disordered dieting practices.

Table: 4.4 Component Scores on the KEDS

	Weight Dissatisfaction	Purging
Q1: Do you want to lose weight now?	.809	
Q2: Have you ever thought you looked fat to other people?	.553	
Q3: Have you ever been afraid to eat because you thought you would gain wt?	.609	.437
Q4: Have you ever tried to lose wt by dieting?	.472	
Q6: Have you ever made yourself vomit to lose wt?		.657
Q7: Have you ever exercised a lot to lose wt?	.621	
Q9: Have you ever taken diuretics to lose wt?		.836

T-tests

T-tests were performed in order to examine the differences between the yes/no responses for the first 10 questions on the KEDS and BMI score for boys and girls separately. For boys only on KEDS question 1, "Do you want to lose weight now?" there was a significant difference between those who responded yes versus those who responded no ($t=4.01$, $df=26$, $p < .001$). Therefore, those participants with higher BMI scores, hence heavier, responded yes to this question more often than those with lower BMI scores. Question two also indicated significance for the boys. "Have you ever thought that you looked fat to other people?" significance was found ($t=4.17$, $df=24$, $p < .004$) indicating those children who had a higher BMI also have thought they looked fat to other people. Finally, significance was found for question 7, "Have you ever exercised a lot to lose weight?" ($t=2.44$, $df=26$, $p < .026$). Thus, those boys with higher BMI scores have not only wanted to lose weight and thought they looked fat to other people, but have exercised for more than one hour per day in order to lose weight.

In looking at the girls, questions 1 and 7 were found to be significant. For question 1, "Do you want to lose weight now?" ($t=4.03$, $df=34$, $p < .000$), and for question 7, "Have you ever exercised a lot to lose weight?" ($t=2.64$, $df=36$, $p < .020$). Again, this indicates that those female participants with a higher BMI score have exercised extensively in order to lose weight

ANOVA

An ANOVA procedure was performed to test whether there were any differences between three perceived weight groups (under, normal, and overweight). The groups consisted of weight dissatisfaction, purging (questions 3,6,9), and bingeing/purging (questions 5 and 6). A significant difference was found between the three weight groups for weight dissatisfaction only (see Table 4.5).

Table 4.5: ANOVA Analysis

		Sum of Squares	Df	Mean Square	F	Sig.
Weight dissatisfaction	Between Groups	26.58	2	13.29	20.99	.000
	Within Groups	42.42	67	.63		
	Total	69	69			
Purging	Between Groups	5.31	2	2.65	.03	.975
	Within Groups	68.95	67	1.03		
	Total	69	69			
Fasting and Purging	Between Groups	1.22	2	.61	.61	.549
	Within Groups	67.77	67	1.01		
	Total	69	69			

Tukey post hoc comparisons showed the significant difference was between the overweight group and the under and normal weight groups indicating that

those students who were overweight, did not feel they were equal to others.
(see Table 4.6).

Table 4.6: Tukey Post Hoc Comparison

	Underweight	Normal Weight	Overweight
Underweight			
Normal			
Overweight	*	*	

Note: * indicates significant differences.
Significant at $p < .000$

Correlations

Pearson Correlations were computed between all the study variables and the significant correlations are reported in Table 4.7. Numerous moderate correlations were made. Question 1, "Do you want to lose weight now?" and question 35, "I wish I could feel better about myself" were moderately correlated indicating those children who wanted to lose weight, also wished they felt better about themselves. Question 2, "Have you ever thought you looked fat to other people?" and questions 28 and 34, "I feel I am equal to others" and "For the most part I am happy with myself " indicate that although some of these children may feel they look overweight, they are happy with themselves as a whole. Lastly, a moderate correlation was found between question 3, "Have you ever been afraid to eat because you thought you would gain weight?" and "I wish I could feel better about myself". This may indicate

that being afraid to eat for fear of gaining weight may make them feel poorly about themselves.

Table: 4.7 Self-Esteem and entire KEDS

	Q1	Q2	Q3	Q4	Q7	Q9	Q15	Q19	Q22	Q23	Q27
Q28		.361 **	.318		.294*		-.241 *				.332 **
Q29						.238*			.231		
Q30			.348 **								.264 *
Q31											.242 *
Q32	.232	.229	.245 *								.247 *
Q33	.332 **		.278 *								
Q34	.295 *	.384	.251 *		.227						.233
Q35	.387 **		.364 **	.296 *	.268 *		-.305 *			.265*	.254 *
Q36							-.273 *	.309**		.247*	.232
Q37	.312 **	.341	.252*								

* =.05

** =.01

*** =.001

Regression

Multiple regression analysis was performed to test whether 1) peer influence, 2) family and peer influence, 3) self-esteem, and 4) total body image would predict weight dissatisfaction. Regression results are provided in Table 4.8. Perceived body image and question 35, "I wish I could feel better about myself", were the only significant predictors of weight dissatisfaction. R^2 for the items were: total body image (imgtot) ($R^2 = .47$) and question 35 ($R^2 = .47$). Significance level is at $p < .001$. Those factors that were found to significantly determine purging behaviors were question 20, "How many of your friends talk about weight, weight loss, and dieting?" ($R^2 = .49$), question 24 "Do you think your friends would like you better if you

weighed less?" ($R^2 = .49$), and question 29 "I feel that I have many strengths." ($R^2 = .49$). Significance was found at $p < .0001$. Finally, for questions 5 and 6 "Have you ever tried to lose weight by fasting?" and "Have you ever made yourself throw up to lose weight?" only question 18 "How many of your friends are on a diet?" was found significant ($R^2 = .13$, $p < .04$).

Table: 4.8 Regression

	R-Square	B	Sig	F	df
Weight Dissatisfaction	.47	Imgtot= -.49 Q35= .44	$p < .0001$	14.27	2,32
Purging	.49	Q20= .50 Q29= .51 Q24= -.33	$p < .0001$	9.72	3,31
Fasting/purging	.13	.35	$p < .04$	4.727	1,33

MANOVA

MANOVA procedures were used to test whether or not children who perceive themselves as underweight, normal weight, or overweight, differ significantly on the KEDS, binge eating behaviors, family and friends weight behaviors and beliefs, and body dissatisfaction. The dependent variables were KEDS, bingeing behaviors, and self-esteem questions. The independent variables were gender, grade, and weight (under, normal, and overweight) The results indicated no statistically significant findings between any variables.

be a correlation between a child's home life and whether or not they engage in any kind of disorder eating behaviors. The current research does not however, support this.

Hypothesis 3 states among children perceiving themselves to be overweight, body dissatisfaction, self-esteem, and beliefs of significant others is significantly related to disordered eating. The current study found self-esteem items 28, 32, and 35 were the only significant predictors of weight dissatisfaction. These results are consistent with the findings of Feiker and Sallade who found the self-esteem of obese children is generally lower than that of normal weight children. Notably, research has indicated that since Mexican-American children have a tendency to be shorter and heavier and tend to have more body fat, it is thought this could influence this populations' perception of the cultural norm for body size. The current findings indicate this is not the case for this sample of predominately Mexican-American children. Abrams reported that compared to Caucasian females, African-American females adopt a larger ideal body size, report greater body dissatisfaction, are more accepting of being overweight, experience less social pressure about weight, and are therefore less likely to aspire to thinness and to diet than Caucasians (Abrams, 1993).

CHAPTER V

Discussion

The prevalence of obesity in the United States has increased from 12.0% in 1991 to 17.9% in 1998. This increase has been observed in all states, sexes, ages, and ethnicities. Hispanics however, had the largest increase from 11.6% to 20.8% (Mokdad, 1999). Texas however has shown one of the largest increases in obesity with an approximate 7% increase (12.7% to 19.9). According to the National Health and Nutrition Examination Survey (NHANES), the prevalence of obesity in children has increased, in 1960, 15% of children aged 12-17 qualified as obese and compared to data from NHANES III (1988-1991) which demonstrated an increase to 22% for this same age group (Buiten, 2000). Children at greatest risk for developing obesity are children of obese parents, children from low-income families, and children of Hispanic origin (Christoffel, 1998).

In the current body of research, there is a lack of understanding as to whether the Mexican-American preadolescent child is equally susceptible to developing distorted body images and eating behaviors as Caucasian children. It was the goal of this research to further clarify whether or not the Mexican-American preadolescent child is at risk for

developing distorted eating and disordered body images and identify associated risk factors.

In this largely Mexican-American population of 9 – 12 year olds, 18% were overweight and 25% were obese. More specifically, 21% of girls in this study were overweight and 13% were obese. Results were more staggering for the boys with 14% being overweight and 39% being obese. More than 50% of the students indicated that they wanted to lose weight and 30% reported that they were afraid to eat for fear of gaining weight. In addition, 29% of the students had tried to lose weight by dieting and 46% had exercised for more than one hour a day in order to lose weight. These results differ from the findings of Mellin (1986) in which the percentage of students who had tried to lose weight by means of dieting was less than 30% of all fourth, fifth, and sixth graders. Mellin found 80% of fourth and fifth graders and 65% of sixth graders restricted their intake (dieted) in order to lose weight. The percentage of students dieting in this study was found to be closer to the findings of Rolland (1997) who found 28% of the study population to have engaged in dieting behaviors. The sample studied by Rolland, most resembled the current sampling of students. Both took place in private Catholic schools and had a relatively small sample. This may account for the similarity. The current study found that 46% of the students have exercised

extensively in order to lose weight but only 29% have used dieting as a means to decrease body weight. These results differ from Rolland who found approximately 60% of students exercised to lose weight. This indicates that not only are the children involved in the current study not dieting as much, they are not engaging in exercise to lose weight to the same extent as other children. This may indicate that dieting and weight loss are not as important to this Mexican-American population as compared to other populations.

Results show that approximately 7% of students in the current study have engaged in purging behavior which is similar to the findings of Mellin who found 10% of 9 – 10 year olds engaging in purging behavior. These findings are also consistent with those of Rolland who found 10% of the population claiming to vomit after meals. The consistency of students purging is significant because these behaviors seem to be evolving much earlier than historically thought indicating that children younger than adolescents are engaging in disordered dieting behaviors.

This research attempted to determine whether or not a child's family or peers had any kind of influence on their eating behaviors and how they felt about their bodies. The Social Cognitive Theory addresses both the psychosocial dynamics influencing health behavior and methods promoting behavior change. This theory also looks at the

individuals ability to learn certain behaviors by observing others including family and friends. However, the measure used did not hold up as a scale showing poor internal consistency. Reasons for this may have been due to the small number of students surveyed or the possibility that a child's family and friends do not focus on weight issues or body image thus having no influencing affects.

Although no statistically significant data was found, several interesting relationships were noted. Approximately 61% of the students had someone in their family who was currently on a diet and 50% believed their parents would like to be thinner. Conversely, when the students were asked if they perceived their parents as being overweight, the vast majority (77%) did not feel they were overweight. These types of mixed signals warrant further investigation as it is possible that some preadolescent children inherently believe that although others may feel comfortable with how they look, dieting and being critical of ones body is part of growing up and acceptable. Participants indicated that their peers, although they felt being thin was better (40%), did not feel people would like them more if they weighed less (59%). This is actually an important finding within this sample because it indicates that there may not be the intense peer pressure to be thin that is typically read about in adolescent children. Whether or

not this is significant for the Mexican-American population or strictly this sample is an area for further investigation.

Body weights of these fourth, fifth, and sixth graders ranged from 51 pounds up to 251 pounds and their self perceived ideal body weights ranging from 40 pounds to 158 pounds. Body Mass Indexes ranged from approximately 12 to 45. It was found that boys who had a higher BMI not only wanted to lose weight but also thought they looked fat to other people and had tried to exercise in order to lose weight. For the girls, results indicated those with a higher BMI wanted to lose weight and had exercised for more than 1 hour per day in order to achieve weight loss.

In comparing the KEDS questions with the self-esteem scale, those children who wanted to lose weight and thought they looked fat to other people also wished they could feel better about themselves. These are important findings in that they indicate that children who want to lose weight, regardless of whether or not they need to, do not feel as positive about themselves as those who are happy with their weights. Poor self-esteem has been well documented in the literature as having a strong influence on the development of disordered body image and unhealthy dieting behaviors.

Responses to the self esteem questions were conflicting. Forty six percent felt they were equal to others and 47% thought they were

able to do things as well as most people. There was, however a large majority of students (61%) who reported thinking they were a failure and 56% felt they did not have much to be proud of. When asked if they felt positive about themselves, 73% strongly agreed. However, when asked if they wished they felt better about themselves, the results were fairly evenly distributed across the answers. The majority (34%) disagreed but 26% agreed and 24% strongly agreed. These findings may indicate that although compared to their peers they feel they are equal, they are not completely happy with themselves. These responses could be due to any number of reasons including Caucasian cultural images, which they can not compare to.

Perhaps the most disturbing results were those from the questions "I feel I am useless at times" (23% strongly agree, 27% agree) and "At times I think I am no good at all" with a surprising 50% strongly agreeing and 20% agreeing. These results indicate that children at this age are cognitively able to judge their perception of themselves as compared to others whether accurate or not. The question to be answered is whether or not these early indicators of poor self esteem can lead to disordered eating. Educators need to be trained in detecting children who are at risk for developing distorted body images and unhealthy dieting behaviors based on self esteem indicators.

Looking at the response according to grade produced several significant findings. The majority of fourth graders were nine year old females of which 75% stated they wanted to lose weight and have thought they looked fat to other people. Additionally, 56% have at some point been afraid to eat for fear of gaining weight. However, only 38% have tried to lose weight by dieting and 19% were unsure if they had tried to lose weight using this method. This indicates that although the majority want to lose weight and have been afraid to eat, they may not have felt enough pressure to actually diet and may not have made the connection between dieting and losing weight. Motivation may also be a factor in that this population was simply not motivated enough to diet or exercise to lose weight. Family pressures may also have prevented the children to diet or exercise to lose weight.

Over half of the respondents (56%) had not used exercise as a weight loss method. This may indicate that these children are cognitively aware of their body and a desire to be thinner but have not made the connection between dieting, exercise, and weight loss or have not felt the social pressure to act on their desire for thinness. Although these fourth graders have not used diet or exercise, 19% have made themselves vomit to lose weight and 6% have taken diuretics and laxatives as a means of weight loss. This may indicate that these fourth graders are looking for a quick and easy way to lose

weight as opposed to using diet and exercise which takes time in order to see results.

When this fourth grade population was asked specifically about exercise, the response was quite different from the initial question. When asked "have you ever exercised more than 1 hour per day in order to lose weight, 81% responded yes including 6% who said they exercised 10 times/week. These findings suggest the internal validity of these questions is questionable. When asked about their peers and weight, it was found that majority of the students did not discuss weight loss nor were on diets. When asked if any member of their family was on a diet, 75% responded yes with 63% believing their parents would like to be thinner. The respondents overwhelming (88%) felt their parents were not overweight even though they were following a diet and had the desire to be thinner. Overall, these fourth graders felt they had many strengths, were positive about themselves and for the most part were happy with themselves.

The fifth graders also felt they were overweight and wanted to lose weight (48%). However, the majority had never thought they looked fat to other people (55%) and 75% had never been afraid to eat for fear of gaining weight. Additionally, 66% of this fifth grade population had never tried to lose weight by dieting and only a slight majority (48%) had exercised extensively. There was however a small

percentage of students who had fasted (4.5%), vomited (4.5%), and taken laxatives (2.3%) in order to lose weight.

When looking at these fifth graders' peers, very few were on diets, wanted to be thinner, and talked about weight, weight loss, and dieting. When asked if their friends thought being thin was better, 36% said yes while 36% were unsure. The students also demonstrated a level of indecision when asked if their friends would like them better if they weighed less and if their friends believed dieting reduces weight. Sixty percent of the students stated someone one in their family was on a diet and 43% believed their parents would like to be thinner. When asked if they thought their parents were overweight, the vast majority (77%) did not feel they needed to lose any weight.

In evaluating the children's self-esteem, it was noted that the majority of the students (55%) felt they had many strengths and were able to do things as well as most people (48%). However, when asked if they felt they had much to be proud of, 61% strongly agreed they did not. Additionally, these fifth graders expressed a desire to feel better about themselves with 25% strongly agreeing and 32% agreeing. These results may be due to cultural beliefs discouraging one to think they are better than others or feeling proud.

In looking at how the sixth graders responded, surprisingly it was found that 63% of the students did not want to lose weight and

100% of the respondents stated they had never tried to lose weight through dieting. From the first 10 questions, only "have you ever exercised a lot to lose weight produced a somewhat significant response of 25% answering yes. Surprisingly, the majority of students reported exercising three times or less with 25% answering they never exercised.

Looking at this population of peers and how they felt about dieting, it was found that half were on diets but 63% stated very few of their friends wanted to be thinner. Many of the questions asked concerning what these children's peers thought of dieting were answered with much uncertainty. Fifty percent were unsure if their friends felt being thin was better and 50% did not know if their friends would like them better if they weighed less. Lastly, when asked if their friends believed dieting reduced weight, an overwhelming majority (75%) were unsure. In evaluating the students' family, 50% stated someone in their family was on a diet and that weight was talked about in their house (63%). When asked if they felt their parents were overweight and if they believed their parents wanted to be thinner, 63% said no. In looking at the respondents' self-esteem, the sixth graders seemed to feel positive about themselves and for the most part were happy with themselves. They did indicate they wished they could feel

better about themselves and 50% felt they did not have much to be proud of.

In comparing the grades, the fourth and fifth graders felt they needed to lose weight while the sixth graders overwhelmingly did not feel they needed to. The fourth graders demonstrated not only a greater desire to be thin, they also demonstrated the greatest incidence of vomiting and diurectic and laxative use. The topic of weight loss and dieting among peers in all the grades was not something frequently discussed. It is of concern however, that all the grades had someone in their family on a diet and the majority of the children did not feel their family member was overweight. Interestingly in this current research, the younger the population the greater the incidence of disordered eating and dieting. This is very different from the current thinking that the older the child, the greater the disordered eating and dieting. The reasons behind this are many. First, the distribution of participants was not equal in the three groups and therefore may have caused the results to be skewed. Secondly, one of the schools participated in a year long nutrition intervention where they may have been educated on hazards of dieting. Lastly, the fourth graders may not have understood what the questions were asking in the survey.

In looking at results according to sex, many significant findings were noted in the girls. When asked if they wanted to lose weight and had they ever thought they looked fat to other people, 55% responded yes. Yet, when asked if they had ever been afraid to eat for fear of gaining weight, 60% said no. The questions relating to dieting methods were perhaps the most surprising in this well studied population. The questions "have you ever tried to lose weight by dieting", "have you ever made yourself throw up to lose weight", "have you ever taken diet pills", "have you ever taken water pills", and "have you ever taken laxatives to lose weight" were all met with a response rate of greater than 92% answering no. The only question that indicated these girls were actively trying to lose weight was a 43% response to exercising a lot in order to lose weight. Considering these results are looking at three age spans, this predominately Mexican-American population of girls is not actively striving for a smaller body. These findings are somewhat contradicted by the girls when asked later in the survey if they had ever exercised for more than 1 hour a day in order to lose weight. Fifty eight percent responded yes indicating that this population may not consider one hour a day a lot of exercise or they may simply not have understood the questions.

In evaluating how students' peers feel about weight loss, it was found that 55% were not dieting, 70% did not want to be thinner, and

40% did not talk about weight or weight loss. This may indicate that these girls, contrary to popular thinking, are not involved in dieting and are not using it as a main top of conversation among their peers.

Responding to questions concerning their family, 63% stated some member of their family was on a diet and 55% of the households talked about weight. Considering that diabetes is widely prevalent in the Mexican-American population, it is not surprising the number of students who responded that someone in their family was on a diet. When asked if they thought their parents were overweight, 83% responded no while 53% believed their parents would like to be thinner. Again, this illustrates how different a child's perception of weight is compared to other members of the family and how this may influence eating behaviors later in life.

Several interesting findings were found in this population of fourth, fifth, and sixth grade girls when evaluating their self-esteem. For the most part, these students felt they were equal to others, had many strengths, and were able to do things as well as others. However, when asked if they thought they were a failure, 63% strongly agreed and 55% thought they did not have much to be proud of. The reason for the inconsistency may be due to typical preadolescent uncertainty about themselves or uncertainty on what the questions meant. Cultural background must also be taken into consideration. As

mentioned previously, Mexican-Americans are typically humble which may have some influence on how the above questions were answered.

Looking at the male population of this study, it was found that 52% wanted to lose weight now but an overwhelming percent (76%) had not tried to lose weight by dieting or fasting (89%). This population was evenly split when it came to exercising for more than 1 hour/day in order to lose weight. Although the majority of students had not tried fasting, vomiting, water pills, or laxatives to lose weight, these questions did receive positive responses. Approximately 7% of these boys had tried fasting, 10% had vomited, 3% had used diuretics, and 3% had taken laxatives to lose weight. These responses dispel the notion that disordered eating occurs only in the female population.

When asked how many of their friends were on a diet, the majority of the respondents answered very few (59%) and none (41%). However, when asked how many of your friends would like to be thinner, the responses were more evenly distributed with 10% saying most of their friends, 21% about half of my friends, 28% very few of my friends, and 38% none of my friends. The boys do not however seem to discuss weight loss or dieting with 66% stating that none of their friends discuss these topics. When asked if their friends thought being thin is better, the responses were evenly distributed with 35% saying yes, 35% no and 31% who were unsure.

Several similar findings were noted when comparing the families of the boys to other participants' families. Sixty two percent stated that some member of their family was currently on a diet but 55% said that body weight was not talked about in their house. This may be related to those family members who are on diabetic diet but not necessarily one to lose weight. When asked if they thought their parents were overweight, 69% stated no and 48% believed their parents would like to be thinner. This again indicates there may be some level of misinterpretation between what is considered overweight between the students and their parents at home. This misinterpretation may leave a child feeling unsure of their own body weight and how they think they should look. However, if the parent(s) are on a special diet but not necessarily for weight loss (i.e. diabetes), this may explain the children's responses.

In looking at the self-esteem of these males, it was found that the majority of the students felt they were equal to others (59%), had many strengths (55%) and felt positive about themselves (66%). However, 59% felt they were a failure, 55% felt they did not have much in their lives to be proud of and 52% thought at times they were no good at all. The discrepancy between the answers may have been due to not understanding the questions or simply the wording since

most of the negative questions asked if they felt a certain way sometimes.

In comparing the females and males, both groups wanted to lose weight. Both populations indicated that the majority had not tried to lose weight by any other means other than exercise. Looking at how these groups responded in relation to their peers, there were very similar responses when asked how many of their friends were on a diet and if diet and weight loss were discussed among each other. Both groups stated that someone in their family was on a diet. Additionally, both groups indicated they did not feel their parents were overweight but agreed that their parents would like to be thinner. The results of the self-esteem section were again very similar for both populations with the same contradictions. Both groups felt they were equal to others and had many strengths. The contradictions found in both groups may have been the wording since some of the questions asked if the student felt a certain way only sometimes.

In conclusion, this study further contributes to the growing body of literature confirming that not only are signs of eating disorders present in preadolescent children but are not limited to Caucasian children. Educators need to be aware of children's growing obsession with weight and body size and learn the signs of disordered eating and dieting practices. Children should be encouraged at a very early age

to look at themselves positively so in later years the prevalence of disordered eating may be limited. The influence of the Mexican-American culture on body image warrants consideration. This study has contended that perceptions of body shape and preference for certain levels of thinness or fatness may be culturally determined. Further insight into attitudes towards body size, body image, and culturally acceptable means of dieting need to be studied in order to completely understand this ethnic group and their risk for developing an eating disorder.

Appendix A

**UNIVERSITY OF THE INCARNATE WORD
DEPARTMENT OF NUTRITION**

Study Site: School A and School B

My name is Liesl Lappala. I am a graduate nutrition student at the University of the Incarnate Word. I am asking permission for your child to be in a research study. I am looking at elementary age student's eating behaviors, beliefs, and body image. We want to learn about children's eating behaviors and beliefs and how these make them feel about themselves. We are asking your permission for your child to take part in this study because he or she is in the 4th, 5th, or 6th grade at St. John Berchmans or St. John Boscoe elementary school. Your child will fill out a short survey and have his or her height and weight taken.

We would like to let you know that if your child participates in this study, there is a chance he or she may feel uncomfortable answering some of the questions about eating behaviors and or may feel that personal information may be used to identify them. Everything that we learn about your child in this study will be confidential. If we publish the results of the study in a scientific journal, we will not identify your child in any way.

There will be no costs to you as a result of your child being in this study. By signing up for the study, your child's class will benefit by learning about good eating habits. Whether your child answers the questions or not, they will be involved in nutrition classes presented by the Nutrition Department at Incarnate Word.

Your decision to let your child take part in this study is voluntary. You are free to choose not to have your child take part in this study at any time. If you choose not to allow your child to take part, or choose to stop at any time, it will not affect your child's education at St. John Berchmans or St. John Boscoe.

If you have any questions please feel free to call Liesl Lappala 210-493-8890 or Mary Kaye Sawyer-Morse at the University of the Incarnate Word Nutrition Department 210-829-3167. The nurse at your school will also be available for you or your child to answer any questions about eating behaviors.

The University of the Incarnate Word committee that reviews research on human subjects (Institutional Review Board) will answer any questions about your child's rights as a research subject (210-829-3882).

YOUR SIGNATURE SHOWS THAT YOU HAVE DECIDED TO ALLOW YOUR CHILD TO TAKE PART IN THE RESEARCH STUDY AND THAT YOU HAVE READ AND UNDERSTAND THE INFORMATION GIVEN ABOVE AND EXPLAINED TO YOU.

IT IS VERY IMPORTANT THIS FORM IS RETURNED TO YOUR CHILD'S TEACHER WHETHER YOU ALLOW YOUR CHILD TO PARTICIPATE OR NOT. IF YOU DO NOT WISH YOUR CHILD TO PARTICIPATE RETURN THIS FORM UNSIGNED.

YES, I WOULD LIKE MY CHILD TO BE IN THE STUDY:

(PRINTED) NAME OF PARTICIPANT

SIGNATURE OF LEGAL GUARDIAN

DATE: _____

Appendix B

Teacher_____ Age_____ Student Number_____
School_____ Grade_____ (Circle) Boy Girl

PLEASE CIRCLE YOUR ANSWER

Ethnicity: White
Black
Mexican-American
American Indian
Other

How much do you weigh now?_____

How much would you like to weigh? _____

How tall are you? _____

CIRCLE THE BEST ANSWER BELOW. IF YOU ARE NOT SURE, CIRCLE THE QUESTION MARK.

- | | | | |
|--|-----|----|---|
| 1. Do you want to lose weight now? | Yes | No | ? |
| 2. Have you ever thought that you
Looked fat to other people? | Yes | No | ? |
| 3. Have you ever been afraid to
Eat because you thought you
Would gain weight? | Yes | No | ? |
| 4. Have you ever tried to lose
Weight by dieting (Dieting
Means eating at least some
Food, but less than you usually
Eat.) | Yes | No | ? |
| 5. Have you ever tried to lose
Weight by fasting? (fasting
Means eating no solid food
For at least 24 hours.) | Yes | No | ? |
| 6. Have you ever made yourself
Throw up (vomit) to lose weight? | Yes | No | ? |
| 7. Have you ever exercised a lot
To lose weight? (A lot means
More than 1 hour a day
Everyday.) | Yes | No | ? |
| 8. Have you ever taken diet
Pills to lose weight? | Yes | No | ? |
| 9. Have you ever taken diuretics
Or water pills to lose weight? | Yes | No | ? |
| 10. Have you ever taken laxatives
To lose weight? | Yes | No | ? |

CIRCLE THE BEST ANSWER

11. Circle the example below that is similar to the *largest* amount of food you Have ever eaten in *less than two hours* (even if you do not eat exactly the Same foods).

Example 1: Less food than example 2.

Example 2: Two doughnuts and a cup of ice cream and two cookies.

Example 3: Four doughnuts and pint of ice cream and ten cookies.

Example 4: Six doughnuts and a quart of ice cream and ten cookies.

Example 5: Eight doughnuts and a half gallon of ice cream and fifteen Cookies.

Example 6: More food than in Example 5.

12. How many times have you ever eaten the amount of food your circled Above?

1 or 2 times only
3 to 12 times
13 to 24 times
25 to 50 times
more than 50 times

13. How many times in the last three months have you eaten lots of food in Less than two hours?

More than 50 times
25 – 50 times
13 – 24 times
3 – 12 times
once or twice only

CIRCLE THE BEST ANSWER

14. Have you ever eaten lots of food in less than two hours two times a Week or more?

2. yes

1. No

15. Have you ever exercised a lot (at least 1 hour a day) in order to lose Weight?

2. yes

1. No

16. How many times a week do you exercise a lot now? _____

17. Has anyone ever told you that you exercise too much?

2. yes

1. no

ON A SCALE FROM 1 – 5 CIRCLE THE NUMBER THAT YOU FEEL BEST ANSWERS THE QUESTION

- 1 = all of my friends**
- 2 = most of my friends but not all of them**
- 3 = about half of my friends**
- 4 = very few of my friends**
- 5 = none of my friends**

18. How many of your friends are on a diet?

- 1 = all of my friends
- 2 = most of my friends but not all of them
- 3 = about half of my friends
- 4 = very few of my friends
- 5 = none of my friends

19. How many of your friends would like to be thinner?

- 1 = all of my friends
- 2 = most of my friends but not all of them
- 3 = about half of my friends
- 4 = very few of my friends
- 5 = none of my friends

20. How many of your friends talk about weight, weight loss, and dieting?

- 1 = all of my friends
- 2 = most of my friends but not all of them
- 3 = about half of my friends
- 4 = very few of my friends
- 5 = none of my friends

CIRCLE THE BEST ANSWER BELOW. IF YOU ARE NOT SURE, CIRCLE THE QUESTION MARK.

- | | | | |
|---|-----|----|---|
| 21. Is there any member of your family
Who is currently on a diet? | Yes | no | ? |
| 22. Is body weight talked about in
Your house? | Yes | no | ? |
| 23. Do your friends feel that being
Thin is better? | Yes | no | ? |
| 24. Do you think your friends would like
You better if you weighed less? | Yes | no | ? |
| 25. Do your friends believe that dieting
Reduces weight? | Yes | no | ? |
| 26. Do you think your parent(s) are
overweight? | Yes | no | ? |
| 27. Do you believe your parent(s)
Would like to be thinner? | Yes | no | ? |

**ON A SCALE FROM 1 – 4 PLEASE CIRCLE THE NUMBER THAT YOU
FEEL BEST ANSWERS THE QUESTION.**

28. I feel that I am equal to others.

- 1 strongly agree
- 2 agree
- 3 disagree
- 4 strongly disagree

29. I feel that I have many strengths.

- 1 strongly agree
- 2 agree
- 3 disagree
- 4 strongly disagree

30. All in all, I think I am a failure.

- 1 strongly agree
- 2 agree
- 3 disagree
- 4 strongly disagree

31. I am able to do things as well as most people.

- 1 strongly agree
- 2 agree
- 3 disagree
- 4 strongly disagree

32. I feel I do not have much to be proud of.

- 1 strongly agree
- 2 agree
- 3 disagree
- 4 strongly disagree

**ON A SCALE FROM 1 – 4 PLEASE CIRCLE THE NUMBER THAT YOU
FEEL BEST ANSWERS THE QUESTION.**

33. I feel positive about myself.

- 1 strongly agree
- 2 agree
- 3 disagree
- 4 strongly disagree

34. For the most part, I am happy with myself.

- 1 strongly agree
- 2 agree
- 3 disagree
- 4 strongly disagree

35. I wish I could feel better about myself.

- 1 strongly agree
- 2 agree
- 3 disagree
- 4 strongly disagree

36. I feel useless at times.

- 1 strongly agree
- 2 agree
- 3 disagree
- 4 strongly disagree

37. At times I think I am no good at all.

- 1 strongly agree
- 2 agree
- 3 disagree
- 4 strongly disagree

Frequency Table : Entire population

	Frequency	Percent
Question 1		
Yes	38	54.3
No	27	38.6
Don't Know	5	7.1
Question 2		
Yes	32	45.7
No	33	47.1
Don't Know	5	7.1
Question 3		
Yes	21	30
No	47	67.1
Don't Know	2	2.9
Question 4		
Yes	20	28.6
No	44	62.9
Don't Know	6	8.6
Question 5		
Yes	4	5.7
No	65	92.9
Don't Know	1	1.4
Question 6		
Yes	5	7.1
No	64	91.4
Don't Know	1	1.4
Question 7		
Yes	32	45.7
No	35	50
Don't Know	3	4.3
Question 8		
Yes	0	0
No	70	100
Don't Know	0	0
Question 9		
Yes	1	1.4
No	68	97.1
Don't Know	1	1.4
Question 10		
Yes	2	2.9
No	68	97.1
Don't Know	0	0

	Frequency	Percent
Question 11		
Example 1	27	38.6
Example 2	30	42.9
Example 3	5	7.1
Example 4	2	2.9
Missing Data	6	8.6
Question 12		
1 or 2 times only	36	51.4
3 to 12 times	25	35.7
13 to 24 times	4	5.7
25 to 50 times	0	0
More than 50 times	5	7.1
Question 13		
More than 50 times	2	2.9
25 to 50 times	2	2.9
13 to 24 times	7	10
3 to 12 times	36	51.4
Once or twice only	23	32.9

Question 14		
Yes	25	35.7
No	45	64.3
Question 15		
Yes	39	55.7
No	31	44.3
Question 16		
0	6	8.6
1	5	7.1
2	8	11.4
3	17	24.3
4	4	5.7
5	9	12.9
6	2	2.9
7	13	18.6
10	1	1.4
14	1	1.4
Question 17		
Yes	4	5.7
No	65	92.9

Question 18		
1	0	0
2	0	0
3	1	1.4
4	35	50
5	34	48.6
Question 19		
1	2	2.9
2	6	8.6
3	13	18.6
4	37	52.9
5	12	17.1
Question 20		
1	4	5.7
2	3	4.3
3	5	7.1
4	23	32.9
5	35	50

Question 21		
Yes	43	61.4
No	19	27.1
?	8	11.4
Question 22		
Yes	33	47.1
No	28	40
?	9	12.9
Question 23		
Yes	28	40
No	16	22.9
?	25	35.7
Question 24		
Yes	11	15.7
No	41	58.6
?	18	25.7
Question 25		
Yes	33	47.1
No	9	12.9
?	28	40
Question 26		
Yes	3	4.3
No	54	77.1
?	13	18.6

Question 27		
Yes	35	50
No	16	22.9
?	19	27.1

	Frequency	Percent
Question 28		
4	1	1.4
3	8	11.4
2	32	45.7
1	28	40
Question 29		
4	1	1.4
3	6	8.6
2	23	32.9
1	40	57.1
Question 30		
4	2	2.9
3	7	10
2	18	25.7
1	43	61.4
Question 31		
4	2	2.9
3	7	10
2	28	40
1	33	47.1
Question 32		
4	2	2.9
3	9	12.9
2	20	28.6
1	39	55.7
Question 33		
4	0	0
3	6	8.6
2	13	18.6
1	51	72.9
Question 34		
4	1	1.4
3	3	4.3
2	18	25.7
1	48	68.6

Question 35		
4	11	15.7
3	24	34.3
2	18	25.7
1	17	24.3
Question 36		
4	5	7.1
3	30	42.9
2	19	27.1
1	16	22.9
Question 37		
4	2	2.9
3	19	27.1
2	14	20
1	35	50

Frequency Table: Girls

	Frequency	Percent
Question 1		
Yes	22	55
No	14	35
Don't Know	4	10
Question 2		
Yes	22	55
No	16	40
Don't Know	2	5
Question 3		
Yes	15	37.5
No	24	60
Don't Know	1	2.5
Question 4		
Yes	12	30
No	24	60
Don't Know	4	10

Question 5		
Yes	2	5
No	38	95
Don't Know	0	0
Question 6		
Yes	2	5
No	37	92.5
Don't Know	1	2.5
Question 7		
Yes	17	42.5
No	21	52.5
Don't Know	2	5
Question 8		
Yes	0	0
No	40	100
Don't Know	0	0
Question 9		
Yes	0	0
No	39	97.5
Don't Know	1	2.5
Question 10		
Yes	1	2.5
No	39	97.5
Don't Know	0	0
Question 11		
Example 1	17	42.5
Example 2	18	45
Example 3	3	7.5
Example 4	1	2.5
Question 12		
1 or 2 times only	23	57.5
3 to 12 times	11	27.5
13 to 24 times	3	7.5
25 to 50 times	0	0
More than 50 times	3	7.5
Question 13		
More than 50 times	0	0
25 to 50 times	1	2.5
13 to 24 times	3	7.5
3 to 12 times	21	52.5
3 to 12 times	15	37.5

Question 14		
Yes	14	35
No	26	65
Question 15		
Yes	23	57.5
No	17	42.5
Question 16		
0	3	7.5
1	4	10
2	5	12.5
3	9	22.5
4	3	7.5
5	5	12.5
6	1	2.5
7	8	20
Question 17		
Yes	4	10
No	35	87.5
Question 18		
1	0	0
2	0	0
3	1	2.5
4	17	42.5
5	22	55
Question 19		
1	1	2.5
2	3	7.5
3	7	7.5
4	28	70
5	1	2.5
Question 20		
1	3	7.5
2	3	7.5
3	4	10
4	14	35
5	16	40
Question 21		
Yes	25	62.5
No	10	25
?	5	12.5

	Frequency	Percent
Question 22		
Yes	22	55
No	11	27.5
?	7	17.5
Question 23		
Yes	17	42.5
No	6	15
?	1	2.5
Question 24		
Yes	7	17.5
No	24	60
?	9	22.5
Question 25		
Yes	16	40
No	3	7.5
?	21	52.5
Question 26		
Yes	2	5
No	33	82.5
?	5	12.5
Question 27		
Yes	21	52.5
No	6	15
?	13	32.5
Question 28		
4	1	2.5
3	4	10
2	15	37.5
1	20	50
Question 29		
4	1	2.5
3	3	7.5
2	13	32.5
1	23	57.5
Question 30		
4	2	5
3	4	10
2	9	22.5
1	25	62.5

Question 31		
4	2	5
3	2	5
2	15	37.5
1	21	52.5
Question 32		
4	1	2.5
3	5	12.5
2	12	30
1	22	55
Question 33		
4	0	0
3	2	5
2	7	17.5
1	31	77.5
Question 34		
4	0	0
3	1	2.5
2	12	30
1	27	67.5
Question 35		
4	7	17.5
3	13	32.5
2	11	27.5
1	9	22.5
Question 36		
4	3	7.5
3	17	42.5
2	10	25
1	10	25
Question 37		
4	1	2.5
3	10	25
2	9	22.5
1	20	50

Frequency Table: Grade 4

	Frequency	Percent
Question 1		
Yes	12	75
No	3	18.8
Don't Know	1	6.3
Question 2		
Yes	12	75
No	3	18.8
Don't Know	1	6.3
Question 3		
Yes	9	56.3
No	6	37.5
Don't Know	1	6.3
Question 4		
Yes	6	37.5
No	7	43.8
Don't Know	3	18.8
Question 5		
Yes	1	6.3
No	14	87.5
Don't Know	1	6.3
Question 6		
Yes	3	18.8
No	12	75
Don't Know	1	6.3
Question 7		
Yes	7	43.8
No	9	56.3
Don't Know	0	0
Question 8		
Yes	0	0
No	16	100
Don't Know	0	0
Question 9		
Yes	1	6.3
No	15	93.8
Don't Know	0	0

Question 10		
Yes	1	6.3
No	15	93.8
Don't Know	0	0
Question 11		
Example 1	7	43.8
Example 2	8	50
Example 3	0	0
Example 4	0	0
Missing Data	1	6.3
Question 12		
1 or 2 times only	7	43.8
3 to 12 times	8	50
13 to 24 times	1	6.3
25 to 50 times	0	0
More than 50 times	0	0
Question 13		
More than 50 times	1	6.3
25 to 50 times	0	0
13 to 24 times	1	6.3
3 to 12 times	7	43.8
Once or twice only	7	43.8
Question 14		
Yes	4	25
No	12	75
Question 15		
Yes	13	81.3
No	3	18.8
Question 16		
0	2	12.5
1	2	12.5
2	4	25
3	1	6.3
4	1	6.3
6	1	6.3
7	3	18.8
19	1	6.3

Question 17		
Yes	2	12.5
No	14	87.5
Question 18		
1	0	0
2	0	0
3	0	0
4	7	43.8
5	9	56.3
Question 19		
1	0	0
2	2	12.5
3	4	25
4	7	43.8
5	3	18.8
Question 20		
1	1	6.3
2	1	6.3
3	0	0
4	4	25
5	10	62.5
Question 21		
Yes	12	75
No	2	12.5
?	2	12.5
Question 22		
Yes	7	43.8
No	7	43.8
?	2	12.5
Question 23		
Yes	8	50
No	4	24
?	4	25
Question 24		
Yes	4	25
No	9	56.3
?	3	18.8

Question 25		
Yes	8	50
No	3	18.8
?	5	31.3
Question 26		
Yes	1	6.3
No	14	87.5
?	1	6.3
Question 27		
Yes	10	62.5
No	2	12.5
?	4	25
Question 28		
4	1	6.3
3	1	6.3
2	11	68.8
1	3	18.8
Question 29		
4	0	0
3	2	12.5
2	4	25
1	10	62.5
Question 30		
4	1	6.3
3	3	18.8
2	5	31.3
1	7	43.8
Question 31		
4	0	0
3	1	6.3
2	7	43.8
1	8	50
Question 32		
4	1	6.3
3	3	18.8
2	5	31.3
1	7	43.8

Question 33		
4	0	0
3	2	12.5
2	3	18.8
1	11	68.8
Question 34		
4	0	0
3	0	0
2	5	31.3
1	11	68.8
Question 35		
4	2	12.5
3	8	50
2	5	31.3
1	1	6.3
Question 36		
4	1	6.3
3	9	56.3
2	3	18.8
1	3	18.8
Question 37		
4	1	6.3
3	5	31.3
2	4	25
1	6	37.5

Frequency Table: Fifth Grade

	Frequency	Percent
Question 1		
Yes	21	47.7
No	19	43.2
Don't Know	4	9.1
Question 2		
Yes	16	36.4
No	24	54.4
Don't Know	4	9.1
Question 3		
Yes	10	22.7
No	33	75
Don't Know	1	2.3
Question 4		
Yes	12	27.3
No	29	65.9
Don't Know	3	6.8
Question 5		
Yes	2	4.5
No	42	95.5
Don't Know	0	0
Question 6		
Yes	2	4.5
No	42	95.5
Don't Know	0	0
Question 7		
Yes	21	47.7
No	20	45.5
Don't Know	3	6.8
Question 8		
Yes	0	0
No	44	100
Don't Know	0	0
Question 9		
Yes	0	0
No	43	97.7
Don't Know	1	2.3

Question 10		
Yes	1	2.3
No	43	97.7
Don't Know	0	0
Question 11		
Example 1	14	31.8
Example 2	19	43.2
Example 3	4	9.1
Example 4	2	4.5
Missing data	5	11.4
Question 12		
1 or 2 times	23	52.3
3 to 12 times	14	31.8
13 to 24 times	3	6.8
25 to 50 times	0	0
More than 50 times	4	9.1
Question 13		
More than 50 times	1	2.3
25 to 50 times	2	4.5
13 to 24 times	4	9.1
3 to 12 times	24	54.5
Once or twice only	13	29.5
Question 14		
Yes	14	31.8
No	30	68.2
Question 15		
Yes	22	50
No	22	50
Question 16		
0	2	4.5
1	3	6.8
2	3	6.8
3	13	29.5
4	3	6.8
5	8	18.2
6	1	2.3
7	8	18.2

Question 17		
Yes	2	4.5
No	41	93.2
Question 18		
1	0	0
2	0	0
3	1	2.3
4	22	50
5	21	47.7
Question 19		
1	2	4.5
2	2	4.5
3	7	15.9
4	24	54.5
5	9	20.5
Question 20		
1	2	4.5
2	2	4.5
3	4	9.1
4	15	34.1
5	21	47.7
Question 21		
Yes	26	59.1
No	13	29.5
?	5	11.4
Question 22		
Yes	20	45.5
No	10	43.2
?	5	11.4
Question 23		
Yes	16	36.4
No	11	25
?	16	36.4
Question 24		
Yes	5	11.4
No	29	65.9
?	10	22.7

Question 25		
Yes	22	50
No	5	11.4
?	17	38.6
Question 26		
Yes	1	2.3
No	34	77.3
?	9	20.5
Question 27		
Yes	19	43.2
No	12	27.3
?	13	29.5
Question 28		
4	0	0
3	6	13.6
2	18	40.9
1	19	43.2
Missing data	1	2.3
Question 29		
4	1	2.3
3	4	9.1
2	15	34.1
1	24	54.5
Question 30		
4	1	2.3
3	4	9.1
2	9	20.5
1	30	68.2
Question 31		
4	1	2.3
2	6	13.6
3	16	36.4
1	21	47.7
Question 32		
4	1	2.3
3	6	13.6
2	10	22.7
1	27	61.4

Question 33		
4	0	0
3	4	9.1
2	9	20.5
1	31	70.5
Question 34		
4	1	2.3
3	3	6.8
2	10	22.7
1	30	68.2
Question 35		
4	8	18.2
3	11	25
2	10	22.7
1	15	34.1
Question 36		
4	4	9.1
3	15	34.1
2	14	31.8
1	11	25
Question 37		
4	1	2.3
3	12	27.3
2	6	13.6
1	25	56.8

Frequency Table: Sixth Grade

	Frequency	Percent
Question 1		
Yes	3	37.5
No	5	62.5
Don't Know	0	0
Question 2		
Yes	3	37.5
No	5	62.5
Don't Know	0	0
Question 3		
Yes	1	12.5
No	7	87.5
Don't Know	0	0
Question 4		
Yes	0	0
No	8	100
Don't Know	0	0
Question 5		
Yes	1	12.5
No	7	87.5
Don't Know	0	0
Question 6		
Yes	0	0
No	8	100
Don't Know	0	0
Question 7		
Yes	2	25
No	6	75
Don't Know	0	0
Question 8		
Yes	0	0
No	8	100
Don't Know	0	0
Question 9		
Yes	0	0
No	8	100
Don't Know	0	0

Question 10		
Yes	0	0
No	8	100
Don't Know	0	0
Question 11		
Example 1	4	50
Example 2	3	37.5
Example 3	1	12.5
Example 4	0	0
Question 12		
1 or 2 times	5	62.5
3 to 12 times	2	25
13 to 24 times	0	0
25 to 50 times	0	0
More than 50 times	1	12.5
Question 13		
More than 50 times	0	0
25 to 50 times	0	0
13 to 24 times	2	25
3 to 12 times	4	50
Once or twice only	2	25
Question 14		
Yes	6	75
No	2	25
Question 15		
Yes	2	25
No	6	75
Question 16		
0	2	25
1	1	12.5
2	2	25
3	1	12.5
5	1	12.5
7	1	12.5
14	1	12.5
Question 17		
Yes	0	0
No	8	100

Question 18		
1	0	0
2	0	0
3	0	0
4	4	50
5	4	50
Question 19		
1	0	0
2	2	25
3	1	12.5
4	5	62.5
5	0	0
Question 20		
1	1	12.5
2	0	0
3	1	12.5
4	2	25
5	4	50
Question 21		
Yes	4	50
No	3	37.5
?	1	12.5
Question 22		
Yes	5	62.5
No	1	12.5
?	2	25
Question 23		
Yes	3	37.5
No	1	12.5
?	4	50
Question 24		
Yes	2	25
No	2	25
?	4	50
Question 25		
Yes	1	12.5
No	1	12.5
?	6	75

Question 26		
Yes	5	62.5
No	3	37.5
?	0	0
Question 27		
Yes	5	62.5
No	1	12.5
?	2	25
Question 28		
4	0	0
3	0	0
2	3	37.5
1	5	62.5
Question 30		
4	0	0
3	0	0
2	3	37.5
1	5	62.5
Question 31		
4	1	12.5
3	3	37.5
2	4	50
1	4	50
Question 32		
4	0	0
3	0	0
2	4	50
1	4	50
Question 33		
4	0	0
3	0	0
2	1	12.5
1	7	87.5
Question 34		
4	0	0
3	0	0
2	2	25
1	6	75

Question 35		
4	1	12.5
3	4	50
2	2	25
1	1	12.5
Question 36		
4	0	0
3	5	62.5
2	1	12.5
1	2	25
Question 37		
4	0	0
3	2	25
2	2	25
1	4	50

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