Obesity and Academic Outcomes Among Hispanic/Latino Adolescents: An Analysis of the National Survey of Children's Health

by

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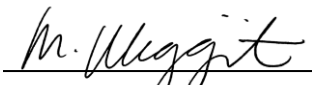

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Abstract

Over the last thirty years in the United States, obesity rates among children ages 2 to 19 have doubled, with even higher rates among ethnic minorities. The purpose of this study is to determine if school-related disciplinary problems, repeating grades, free or reduced school meals, and parent/caregiver engagement were significantly associated with overweight or obesity among the Hispanic/Latino children population. This study used 553 Hispanic/Latino female and male children aged 17 and below from the 2016 National Survey of Children's Health (NSCH) dataset. A chi square test of independence was used to determine the effect size of any established association between the dependent variables and overweight and obesity. This study does not entirely concur with the findings of previous studies, which state that a child's overweight status is associated with poorer educational outcomes, such as school reported problems, repeated grades, and little to no parent/caregiver engagement. However, the current study presented an established association between Hispanic/Latino children who receive free or reduced school meals and overweight or obesity. Because of this finding, there is a clear need to restructure the National School Lunch Plan (NSLP). It is suggested for this population that future studies review other ethnicities to determine similarities and differences. Information from this study is beneficial for improving academic outcomes among Hispanic/Latino children.

Key Words: Children, Overweight, Obesity, School, Parent

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Review of Literature

Introduction

The last thirty years have shown a vast increase in the number of overweight and obese children worldwide (Carey, Singh, Iii, & Wilkinson, 2015). Exclusively among the United States' population, obesity rates among children ages 2 to 19 have doubled, with even higher rates among ethnic minorities (Rayess, 2017). In 2014, over 33% of children between two and nineteen years of age were considered overweight or obese (Rayess, 2017). Obese children are more prone to depression, behavioral problems, learning disabilities, and bone, joint, and muscle problems, as opposed to normal weight children (CDC, 2015). Previous literature indicates obese children miss more school days and participate less in class than normal weight children (Carey et. al, 2015).

Children who maintain a healthy body weight have shown a more positive mental and physical health, and an increase in their concentration on classwork (Van Cleave, Gortmaker & Perrin, 2010). Because of the drastic increase in childhood obesity, school districts have become more involved with taking preventative measures, such as following school meal guidelines, implementing evidence-based exercise and nutrition programs, and achieving the National Healthy Schools Award (Larson, 2017). Through the evidence-based Healthy Schools Program, schools adapt policies and practices to develop healthier eating and exercise habits ("Alliance for a Healthier Generation", 2019). Schools that complete the Healthy Schools Program receive the National Healthy Schools Award (2019). Since over 95% of adolescents

in the U.S. are enrolled in school at an average of 6.6 hours per day, schools play an important role in the obesity epidemic (National Centers for Education Statistics, 2005). Unfortunately, there are still areas in which school districts fail to meet the CDC recommendations, such as students receiving 60 minutes of daily exercise (Rayess, 2017). Recently, the U.S. education system has become more focused on overweight and obese students due to its link to adult health outcomes, such as cardiovascular disease and type II diabetes (Carey et. al, 2015). However, there is only a minor focus on how overweight and obese students are affected educationally, including their behavior at school (Maher, Lewis, Katzmarzyk, Dumuid, Cassidy, & Olds, 2016).

Dropout rates and obesity. Data from academic outcomes, social and behavioral problems have magnified dropout rates (Cappella, Hwang, Kieffer, & Yates, 2017). Although academic achievements are seen in among all race and ethnic groups, students with lower socioeconomic status (SES) consistently experience lower school achievements (Cross, 2017). Commonly, Caucasian students are less likely to drop out of school compared to Latino and African-American students (Lanza, & Huang, 2015). African-American students have an 8.6% school dropout rate, which is lower than Hispanic students (Cappella et al., 2017). However, African-American students have the highest childhood obesity rates at 25.7% (Cappella et al., 2017).

Latino students have higher rates of obesity (22.9%) and higher school dropout rates (12.7%) when compared to Caucasian students (15.2% for obesity and 4.3% for school dropout) showing that a higher obesity rate is an indicator of a higher school drop out rate (Cappella et. al, 2017). Due to the high dropout rates among

Hispanic and African-American students, scholars have mainly focused on their academic outcomes and SES (Cappella et al., 2017). Scholars have predicted and found that academic outcomes are affected by SES, but have focused less on the affects of obesity on academic outcomes (Lanza & Huang, 2015). Scholars have ultimately overlooked physical exercise as a possible contributing factor (Capella et al., 2017).

Parent/caregiver involvement in academics and obesity. Among several parenting practices, parental involvement in a child's education is one of the most important for success (Costa, & Faria, 2017). Parent involvement has been defined as parents' interaction with schools and with their children to benefit their children's education success (Oswald, Zaidi, Cheatham, & Brody, 2018). Activities that are considered to represent parent involvement include involvement in school functions, such as parent-teacher conferences, volunteer work, and attending school events (Oswald et al., 2018). It also includes involvement at home, such as homework time, educational opportunities, monitoring schoolwork, and academic progress (Oswald et al., 2018). Taking a look into how much a parent/caregiver has attended school functions, Noel, Stark, & Redford (2016) found that 87% of parents reported participating during parent-teacher organization or association (PTO/PTA) meetings. Nationally, 76% of parents reported attending parent-teacher conferences (Noel et al., 2016). School and class events were attended by 74% of parents, and 58% of parents participated in school fundraising. Only 33% of parents met with a guidance counselor (Noel, et al., 2016). Differences in parent involvement can be related to family characteristics (Oswald et al., 2018). Financial stability, parents' educational background, family

access to healthcare, and access to nutritious foods have been identified as predictors of children's school success (Oswald et al., 2018). Given the importance of parent/caregiver involvement in academics, it is equitably important for involvement in a child's weight management and overall health (Costa, & Faria, 2017).

Parent/caregiver involvement functions as a mediator in developing healthier behaviors (Costa, & Faria, 2017). According to the Harvard School of Public Health survey (2013), 95% of parents agree it is important for a child to eat healthy foods and receive involvement from their parents, but 44% state it is difficult to guarantee. Researchers have found that parents and caregivers can influence childhood obesity, especially with involvement in managing their weight (Kim, Park, Park, Lee, & Ham, 2016). One study focused on the effects of a parent involvement intervention program, targeting obesity-related behaviors of children (Kim et. al, 2016). This particular study had a control group and experimental group, with the control group including only children with no parent involvement (Kim et. al, 2016). The researchers found that involving the parents was more effective in improving exercise and nutrition levels (Kim et. al, 2016). The study also found that parental involvement provided behavior changes within the immediate family, not just the child included in the intervention (Kim, et. al, 2016).

Free or reduced meals and obesity. Launched in 1946, the National School Lunch Program (NSLP) provides federal funding to schools in all states so that meals can be provided to children while in the school setting (Peterson, 2013). This program assists children from low-income families most. Hispanic/Latino students are the highest population of participants in the NSLP (Gase, et al., 2014).

The United States Department of Agriculture (2012) has reported that the NSLP meals contain a high percentage of fats, saturated fats, and sodium (Peterson, 2013). In 2010, the Hunger-Free Kids Act demanded that the NSLP followed the United States Dietary Guidelines set by the USDA (Cullen, Chen, & Dave, 2015). Now, school lunches provided through the NSLP must include daily servings of fruits, vegetables, and whole grains (2015). Unfortunately, public schools that utilize the NSLP have difficulty in meeting these requirements (USDA, 2012). A study conducted in the Los Angeles Unified School District (LAUSD) analyzed the food choices offered through the NSLP (Gase, McCarthy, & Robles, 2014). It focused on observing if the children actually ate the choices they put onto their plates (Gase, McCarthy, & Robles, 2014). Data was collected from 2,228 students from four schools in the LAUSD (2014). The researchers found that 31.5% of students never added fruit to their plates and 39.6% of students never added vegetables to their plates (Gase, et al., 2014). Those who did add fruits and vegetables to their plates threw away 10.2% of the fruit and 28.7% of vegetable items. Of the students that participated in this study, 72.3% were Hispanic/Latino (Gase, et al., 2014).

Purpose of the Study

The purpose of this study is to examine the likelihood of poorer academic outcomes among Hispanic/Latino adolescents, based on their weight status and sociodemographic factors, such as parent/caregiver engagement and income levels.

Research Questions

The aim of this study is to answer these questions:

1. Is there a relationship between school reported disciplinary problems and overweight or obesity among the Hispanic/Latino adolescent population?
2. Is there a relationship between repeated grades and overweight or obesity among the Hispanic/Latino adolescent population?
3. Is there a relationship between receiving free or reduced school meals and overweight or obesity among the Hispanic/Latino population?
4. Is there a relationship between parent/caregiver engagement in a child's events or activities and overweight or obesity among the Hispanic/Latino population?

Hypotheses

It is hypothesized there is an established association between receiving free or reduced breakfasts and lunches and overweight or obesity among the Hispanic/Latino adolescent population. It is also hypothesized that parent/caregiver attendance to activities and events promotes a healthier weight among the Hispanic/Latino adolescent population. Further, it is hypothesized there is an established association between school reported problems and overweight or obesity among the Hispanic/Latino adolescent population. Lastly, it is hypothesized there is an established association between repeating grades and overweight or obesity among Hispanic/Latino adolescents.

Method

Design

This research study utilized data from the 2016 National Survey of Children's Health (NSCH). For the purpose of this study, chi square test of independence will be used to determine the effect size of any established association between the dependent variables and overweight and obesity. The design of this study is cross sectional. This study includes four questions from the 2016 NSCH dataset, which are classified as the dependent variables. Reported body mass index (BMI) from the 2016 NSCH dataset is classified as the independent variable.

Procedures

The 2016 NSCH dataset is publicly available upon request by submitting a "Data Set Request Form" through the Data Resource Center website (NSCH, 2018). The dataset is de-identified to protect participant confidentiality. The 2016 NSCH was administered by mail and the internet to randomly selected addresses from civilian, non-institutionalized households within the United States. The mailers included instructions on how to complete the survey via online. If the participant preferred a paper survey, one was mailed to them, including a pencil. The questionnaire started with a pre-survey screening, used to gain demographic details about the child/children and to determine if the respondent speaks and writes in English or in another language. Once the pre-survey screening was completed and mailed back, one child from each household was randomly selected to participate in the study.

The 2016 NSCH questionnaire has a total of ten sections to be answered by the parent/ guardian. The questions pertain to the child's health as an infant and at their current age (dental, behavioral, weight, etc.), the child's health care services, experiences with health care providers, health insurance coverage, the child's learning development as an infant and now, schooling and activities (school related problems, making friends, extracurricular activities), parent and child relationship, household income and household education levels, about the respondent information (physical health, mental health, marriage status, etc.), and overall household information (NSCH, 2018).

Participants

The Participants in this study include Hispanic/Latino children ages 17 and under. The 2016 NSCH dataset has 50,2012 total respondents. Of the total respondents, 5,523 reported their ethnicity as being Hispanic/Latino. To reduce the likelihood of type 1 error, a 10% random sample was selected from the 5,523 total respondents. Therefore, the sample size used for this study includes 553 Hispanic/Latino female and male children. The sample size exceeds the minimum of 191 required based on G*Power calculations.

Independent Variable and Dependent Variable

The independent variable in this study is the child's body weight. The 2016 NSCH asked two questions to determine if the child was considered overweight or obese. The first question asked, "What is the child's current height?" (NSCH, 2018). The second question asked, "How much does this child currently weigh?" (NSCH, 2018). Both questions asked the respondent to write in their responses. Data

from these two variables were not released in the dataset, but the variables were used to calculate the body mass index (BMI) for each participant. This variable was originally coded BMICLASS, which then was recoded to BMIRECODE. BMICLASS represented 4 categories: underweight (1), normal weight (2), overweight (3), and obesity (4). This variable was recoded to BMIRECODE to combine underweight 1=1 and normal weight responses 2= 1 and to combine overweight 3=2 and obesity responses 4=2. Then, BMIRECODE was reverse coded so that 1=2 and 2=1. In order to utilize the chi square test of independence and to calculate the odds ratio, the BMI categories needed to be collapsed to create a dichotomous variable and to ensure all expected frequencies were greater than five, to meet the assumptions of the statistical test. The two categories were collapsed to Underweight/Normal weight and Overweight/Obese.

In this study there are four dependent variables. The dependent variables include: school reported problems, repeating grades, receiving free or reduced breakfasts and lunches, and parental/caregiver attendance to activities and events. The first dependent variable, "school report problems" used the question, *"During the past 12 months, how many times has this child's school contacted you or another adult in your household about any problems he or she is having with school?"* (NSCH, 2018). This variable was originally labeled K7Q04R_R. The variable was recoded to SCHOOLPROB. The response categories were: no times (0), one time (1), two or more times (2). Responses were recoded 0=1 (no times contacted) and 2=2 (yes, contacted one time) and 3=2 (yes, contacted two or more times). The resulting two categories were No times and One time/Two or more times. Then,

SCHOOLPROB was reverse coded so that 1=2 and 2=1. The second dependent variable "repeating grades" used question, "*Since starting kindergarten, has this child repeated any grades?*" (NSCH, 2018). This variable was labeled REPEATED and had two response categories: Yes or No, which were reverse coded.

The third dependent variable, recipient of free/reduced meals, used survey question, *"At any time during the past 12 months did anyone in your family receive free or reduced-cost breakfasts or lunches at school?"* (NSCH, 2018). This variable was labeled K11Q62 and included two response categories: Yes or No.

The last dependent variable, parental attendance in activities/events, used the question, *"During the past 12 months, how often did you attend events or activities that this child participated in?"* (NSCH, 2018). This variable was labeled K7Q33, but was recoded PARENT_RECODE. There were 5 response categories: always (5), usually (4), sometimes (3), rarely (2), and never (1). The resulting two categories were Never/Rarely/Sometimes and Usually/Always. Then, PARENT_RECODE was reverse coded, so that 1=2 and 2=1.

Data Analysis

The Statistical Package for Social Sciences (SPSS) version 24 was used to run chi square to determine if the dependent variables, REPEATED, SCHOOLPROB, PARENT_RECODE, and K11Q62 were associated with overweight and obesity within the Hispanic/Latino adolescent population. Further, frequencies and descriptive analyses were produced to summarize the data and describe the participants.

Results

Participants

The current study utilized the 2016 National Survey of Children's Health (NSCH). Because the research questions aimed to examine the risk factors for overweight and obesity among Hispanic and Latino population, only those who reported being of Hispanic/Latino decent were included in study. A 10% random sample (n = 553) of those who reported being of Hispanic/ Latino decent were selected and included in the chi square analyses to determine if there was any association found between obesity and academic problems. Descriptive statistics describing the study sample are reported in Table 1.

Major findings

The purpose of this study was to determine if school-related disciplinary problems, repeating grades, free or reduced school meals, and parent/caregiver engagement were significantly associated with overweight or obesity among the Hispanic/Latino adolescent population. To answer the first research question, a chi square test of independence was used to analyze the association between school reported disciplinary problems and overweight or obesity. The results (table 2) indicated that there was no significant association between school reported disciplinary problems and overweight or obesity (χ^2 (1) = .894, p = 0.334).

The second research question aimed to determine if there was an association between repeated grades and body weight. The chi square indicated that no significant association was found between repeated grades and body weight (χ^2 (1) = .301, p = 0.584) (table 3). The third research question examined if there was an

association between free or reduced school meals and body weight. Results from a chi square test of independence found a significant association established between free or reduced school meals and body weight (χ^2 (1) = 9.75, p = 0.002). Children who were reported as overweight or obese were 2.31 times more likely to receive free or reduced school meals (OR= 2.31, CI =1.36, 3.93) (see table 4).

Lastly, a chi square was used to analyze the association between parental engagement and body weight. Results indicated no significant association between parental engagement and body weight (χ^2 (1) = 1.91, p = 0.167) (see table 5).

Discussion

Summary of Major Findings

The purpose of this study was to examine the likelihood of poorer academic outcomes among Hispanic/Latino children based on their weight status. A chi square test of independence showed no significant relationship between repeating grades and overweight or obesity among the Hispanic/Latino children included in the study. A chi square test of independence also showed no significant relationship between school reported disciplinary problems and overweight or obesity. A chi square test of independence also showed no significant relationship between parent/caregiver engagement and overweight or obesity among the Hispanic/Latino children. However, a chi square test of independence confirmed a significant relationship between receiving free or reduced school meals and overweight or obesity among Hispanic/Latino children.

The findings of disciplinary problems, parental/caregiver involvement, and repeating grades did not entirely align with the findings of other mentioned studies. Prior studies state that inattention from parents/caregivers and disruptive behaviors significantly impact a child's academic achievements (Carey, 2015). Another scholar also mentioned that higher obesity rates are found among those students who lack parent/caregiver attention and repeat grades or are suspended from school (Oswald, et al., 2018). However, the results of the current study, although not significant, do indicate that overweight or obese Hispanic/Latino children are 1.3 times more likely to have school reported problems, such as disruptive class behaviors, defiance, or suspension or expulsion from school (OR= 1.34, CI =.729, 2.46) (see table 2). This

finding is further supported by another study, which found that overweight or obese Hispanic/Latino children show higher records of school disciplinary problems as opposed to other ethnicity groups (Skiba et al., 2011). Another researcher stated that childhood obesity negatively effects a child's academic outcomes, including more school reported problems, such as suspension or expulsion (Carey et. al, 2015). Additionally, this study revealed that parental engagement is 1.5 times more likely to occur in children who are considered normal weight as compared to children who are considered overweight or obese. This result supports the findings of Costa and Faria (2017) who state that a child's weight management is supported by parental involvement in school academics and activities.

Lastly, the results established a relationship between receiving free or reduced school meals and overweight or obesity among the Hispanic/Latino research participants, in which those who were reported as overweight or obese were 2.31 times more likely to receive free or reduced school meals (OR= 2.31, CI =1.36, 3.93) (see table 4). The findings of receiving free or reduced meals and overweight or obesity are significant, this study suggests improvements of the National School Lunch Program (NSLP) are made. The findings of this study does align with findings of other scholars' studies. Although the NSLP has strict nutritional requirements, children create their plate of food; so, the nutritional food options, such as fruits and vegetables, may never be consumed (Gase et. al, 2014). A prior study conducted at four Los Angeles public schools found that fruits and vegetables were the items least consumed by the participants and most often not added to their plate (Gase et. al, 2014). Of these Los Angeles school participants, 72.3% of were of Hispanic/Latino

decent (Gase et. al, 2014). Further, 30% of those Hispanic/Latino school participants were considered to be overweight or obese (Gase et. al, 2014). Another study was conducted at two public schools in Boston, which evaluated the amount of food waste on a child's NSLP plate (Cohen, Richardson, & Austin, 2013). The study found that students wasted 19% of their entrées, 47% of their fruit, 25% of their milk, and 73% of their vegetables (Cohen, Richardson, & Austin, 2013).

Public Health Implications

The current study found an association between Hispanic/Latino children who receive free or reduced meals and overweight or obesity. Because of this finding, there is a clear need to restructure the NSLP. A previous study conducted by researcher Schanzenbach (2009) showed that students who received NSLP lunches were considered overweight or obese at the end of their Kindergarten year, as opposed to children who brought a brown-bagged lunch to school. In Schanzenbach's (2009) study, all kindergarten children from one specific school who were considered of normal weight were included. At the end of the school year, the children were weighed again for comparison.

As mentioned earlier, Gase, McCarthy, and Robles (2014) determined 31.5% of students did not add fruits to their plates and 39.6% of students did not add vegetables to their plates (Gase et. al, 2014). Although the NSLP does abide by strict nutritional requirements, the protein, vegetable, or fruit choice may never be eaten if the child decides the choices are undesirable. According to Gase (2014), there is an association between a child consuming only the carbohydrate and fat NSLP food options day after day and overweight or obesity. This supports the association found

between free or reduced school meals and overweight or obesity in the current study. Future research on what food choices appeal most to the majority of children would benefit the NSLP. It would allow for the NSLP to find healthy food choices that intrigue children. After determining appealing yet healthy food options, researchers then can determine if their plate choices create a more balanced meal. If the choices create a more balanced meal, overweight and obesity rates among the different ethnic groups can also be reviewed. Researchers can then determine if the NSLP is still associated with overweight or obesity among children.

Study Limitations

The dataset used in this study was self-reported by the parents or caregivers, creating possible response bias. It is possible the responses provided by the parent/caregiver were not completely truthful. This can be caused by assuming the true responses would not be considered socially acceptable, even though responses were deidentified for the purpose of the study. The questionnaire also asked for responses based on what the parent/caregiver could remember over the past year, which poses concern for recall bias. Recall bias is especially of concern since undesirable habits were included in the questionnaire, such as smoking, eating, and exercise. These types of questions tend to be underreported. Furthermore, this study focused only on the Hispanic/Latino population. This is a limitation since other ethnic groups were not evaluated, and thus comparisons cannot be made across other racial and ethnic groups and the results cannot be generalized beyond this specific population. Additionally, the respondents in the current study may not be representative of the national population. Specifically, of the parent/caregiver

responses, 20.8% reported to hold a Bachelor's degree. According to Postsecondary National Policy Institute (PNPI) l9% of students enrolled in Bachelor's degree programs are of Hispanic/Latino ethnicity, but only 47% actually complete a Bachelor's degree (2019). Further, the nation's 2018 poverty rate for Hispanic/Latinos was 18.3% according to the U.S. Census Bureau (2019). The responses received for this study only shows a 16.3% poverty level.

Future Recommendations

Although this study focused solely on the Hispanic/Latino adolescent population, future research could benefit from studying other ethnic groups for comparative purposes. Additionally, this study only utilized chi square, which only determined if there was an association between the independent and dependent variables. In order to predict if the independent variable has an effect on the dependent variables, future research should utilize logistic regression. This would allow for further explanation of the relationship between the variables, not only if there is a relationship between the variables.

Conclusion

This study does not entirely concur with the findings of previous studies, which state that a child's overweight status is associated with poorer educational outcomes, such as school reported problems, repeated grades, and little to no parent/caregiver engagement. However, this study does contribute to current research surrounding the NSLP and childhood obesity rates. It was hypothesized school reported disciplinary problems, repeating grades, receiving free or reduced school meals, and parent/caregiver engagement would share a relationship with overweight

or obesity among the Hispanic/Latino youth. It is suggested for this population that future studies utilize data more representative of the nation's Hispanic/Latino demographics and that future studies review other ethnicities to determine similarities and differences. However, information from this study considered beneficial for improving academic outcomes among Hispanic/Latino children.

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Table 1

Demographic Distribution of Sample of Hispanic Children in 2016 NSCH Dataset (N=533)

Variable	*n*	%
Child's Age		
0 - 3	106	19.2
4 - 7	119	21.5
8 - 11	128	23.1
12 - 14	87	15.7
15 - 17	113	20.4
Exercise 60 Minutes per Day		
0 Days	36	6.5
1 – 3 Days	152	27.5
4 – 6 Days	114	20.6
Every day	76	13.7
Refused to answer	11	2.0
Gender		
Male	168	51.4
Female	366	48.6
Refused to answer	19	3.4
Parent/ Caregiver Education		
8th Grade or less	27	4.9
Some high school (no diploma)	49	8.9
High school graduate or GED	83	15.0
Some college (no degree)	86	16.6
Associate degree (AA, AS)	52	9.4
Bachelor's degree	115	20.8
Master's degree	59	10.7
Doctorate (PhD, EdD, MD, etc)	22	4.0
Refused to answer	35	6.3
Working-Poor Household		
Yes	90	16.3
No	442	79.9
Refused to answer	21	3.8

Note. Working-Poor Household is defined as people who spend 27 weeks or more in a year in the work force, but whose incomes fall below the federal poverty level.

Table 2

Crosstabulation of School Reported Problems by Child's Weight (n=240)

	Child's Weight						
	Overweight or Obese	**Underweight or Normal Weight**	**OR**	**95% CI**	**X^2**	**df**	**p value**
Reported School Problems			1.34	.729, 2.46	.894	1	0.334
1 or 2 times	24(42.8%)	32(57.1%)					
No times	66(35.8%)	118(64.1%)					

Table 3

Crosstabulation Repeated Grades by Child's Weigh (n=241)

	Child's Weight						
	Overweight or Obese	**Underweight or Normal Weight**	**OR**	**95% CI**	**X^2**	**df**	**p value**
Repeated Grades			1.33	.478, 3.70	.301	1	0.584
Yes	7(43.7%)	9(56.2%)					
No	83(36.8%)	142(63.1%)					

Table 4

Crosstabulation of Free or Reduced School Meals by Child's Weight (n=244)

	Child's Weight						
	Overweight or Obese	**Underweight or Normal Weight**	**OR**	**95% CI**	**X^2**	**df**	**p value**
Free or reduced meals			2.31	1.36, 3.93	9.75	1	0.002
Yes	50(48%)	54(51.9%)					
No	40(28.5%)	100(71.4%)					

Note. The sample size was n= 244

Table 5

Crosstabulation of Parental Engagement by Child's Weight (n=239)

	Child's Weight						
	Overweight or Obese	**Underweight or Normal Weight**	**OR**	**95% CI**	**X^2**	**df**	**p value**
Parental Engagement			1.55	.829, 2.91	1.91	1	0.167
Never/Rarely/Sometimes	23(45%)	28(54.9%)					
Always/Usually	65(34.5%)	123(65.4%)					