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Childhood social factors and their impact on young adulthood obesity

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Abstract

Obesity is a growing concern in the United States, particularly among children and adolescents. This study aimed to ascertain what factors including school/peer influences, culture, family lifestyle, and neighborhood environment, during individuals' adolescence, impact their weight as young adults. The researcher conducted a survey that was given to students at a private catholic college in southern New England. A survey instrument was developed and distributed as a Facebook event restricted to college students at the specific institution, and additionally was distributed to one social work undergraduate course. The findings indicated that participant's weight was most influenced by family lifestyle and school environment factors. By learning this information the researcher was able to make implications for practice, policy, and research.

Childhood social factors and their impact on young adulthood obesity

Increasing, widespread obesity is becoming a growing concern throughout America, especially for children and young adults. It is a significant issue to address because early obesity can lead to serious health conditions in adulthood. Indeed, “the comorbidities associated with obesity and excessive weight in adult populations...can also be found in children” (Eliadis, 2006, p. 86). By decreasing the occurrence of obesity in children, it could prevent an increased number of adults from having to suffer the health consequences.

In order to prevent obesity, it is important to be aware of its prevalence. Obesity in the adolescent population has increased significantly in the past thirty years. A recent study found that:

From 1976 to 1980 the prevalence of obesity in children between ages 6 and 11 was 7 percent, and the prevalence of obesity in adolescents between ages 12 and 19 was 5 percent. Between 1999 and 2000, 15.3 percent of children in the United States were considered obese, and 15.5 percent of adolescents were considered obese. (Eliadis, 2006, p. 86)

Furthermore, statistics indicate that, “today, overweight and obesity affect one in five children in the United States and obesity is now the most prevalent nutritional disease of children and adolescents in the US” (Kuczmarski, Flegal, Campbell & Johnson, 1994; The Surgeon General, 2002, as cited in Elkins, Cohen, Koralewicz & Taylor, 2004, p. 181). In fact 22% of children who are pre-school age in the United States are overweight, and 10% are obese (Deckelbaum & Williams, 2001). These statistics demonstrate the rapid and concerning increase among children and adolescents in a relatively short period of time.

Due to obesity rates tripling in a twenty-five year span, and increasing further since 2000, it is important to address the factors that have impacted the increase. The increase in obesity

indicates that it can no longer be looked at as simply an individual's problem, but also as a societal one:

Although the policy debate is only slowly moving away from the focus on individual-level psychological and social factors, the research community has largely recognized that changes in dietary and physical activity patterns are driven by changes in the environment and by the incentives that people face. (Sturm, 2008, p. 739)

In order to fully understand obesity, society and its values need to be explored, in their context.

American culture does not put emphasis on moderation, but rather on instant gratification, which has led to a society that promotes supersizing most things, including food. As a result of these American values, it is not difficult to see why obesity has become so prominent. American culture promotes fast paced lifestyles, and therefore family systems tend to live in such a way where fast food becomes a norm for lack of time to sit down as families to have healthy meals. With the American lifestyle, families have less time for healthy meals together, and furthermore children attend school where they are often times surrounded by unhealthy food. If children do not form healthy habits through their families, then there is less opportunity to prevent them from indulging in unhealthy food outside of the home. Partially due to the reduced amount of family time, children are forming bad habits in the area of physical activity as well. Rather than partaking in physical activity, children prefer to watch television, or go on the computer (Eliadis, 2006). The bad habits that children learn carry over into their young adult and adult lives, which makes them more vulnerable to others' unhealthy habits.

In addition to being detrimental to physical health, obesity also negatively impacts mental health. Individuals who are obese are often stereotyped and stigmatized as being unmotivated or lazy, and are viewed as being responsible for their obesity. Though individuals have control over their bodies, in the sense that they decide what and how much to eat, as well as how much

physical activity they participate in, it is also necessary to consider the social environment that individuals are a part of. People's social environments including families, peers, culture, and neighborhoods not only can influence obesity, but also can impact someone who is obese to have a negative body image, and a low self-esteem; this can also lead to depression as well as anxiety. If people do not learn how to properly cope with any mental health issues that may co-exist with obesity they may turn to negative coping mechanisms such as substance abuse or increased binge eating.

Obesity is a growing and current concern that will continue to increase if not addressed. Obesity is an issue that needs to be addressed by all healthcare professionals, including social workers in order to ensure that all factors are explored. Social workers can positively impact the problem of obesity by understanding how people cope with obesity, by empowering clients, and by seeing clients through a broader perspective which looks beyond the individual to surrounding systems. This study will investigate societal factors such as family lifestyle, peer influence or environment, and cultural influences that individuals experience in childhood and how they impact young adults' relationships with food, which can result in unhealthy weight gain or obesity.

Literature review

Childhood and adolescent obesity have been studied in more depth in the current literature because obesity in those age groups can be a predictor of obesity in adulthood (Deckelbaum & Williams, 2001). Past research was focused on individual factors such as biological or psychological characteristics as linked to obesity. In fact, researchers from 1965 stated, "current theories as to the etiology of obesity, whether behavioral, biochemical, or physiological, have directed their attention to the individual" (Goldblatt, Moore & Stunkard,

1965, p. 1039). The rising rate of obesity in America especially within the youth population is indicative of obesity being more than an individual problem, but also a social problem.

Recent literature expands its lens in the study of obesity by questioning additional variables such as school and peer influence, neighborhood environment, culture, and family lifestyle. A recent study in particular, summarizes this expanding lens. According to Levitsky (2005):

Few doubt that human feeding behavior is part of larger biological regulatory system of energy stores, but the extent to which eating behavior is controlled by these biology systems and how much is due to responses to environmental stimuli is presently still under debate. (p. 623)

Among these stimuli, family lifestyle can be viewed as distinct; however, is also associated with the other environmental variables because “parents provide a child’s contextual environment” (Speiser et al., 2005, p. 1880). Therefore, children are more susceptible to surrounding influences if they are not taught healthy habits at home.

Neighborhood environmental influences

People with low incomes are faced with obstacles that prevent them from having healthy lifestyles, thus socioeconomic status often plays a role in the obesity epidemic (Lawrence, Hazlett & Hightower, 2010). At least one study has confirmed the prevalence of obesity among socioeconomic disadvantaged citizens. “Among inner city youth 28.5% of males and 33.7% of females were overweight and 15.9% of boys and 16.4% of girls were obese” (Elkins et al., 2004, p. 181). How do we explain these high rates among inner city residents? One possible explanation is that participation in physical activity is limited for people who live in low income neighborhoods due to a lack of access to green space or community centers (Lawrence et al., 2010). Another reason may be that low income neighborhoods are generally not safe for children to go outside to play, thus leading to a reduction of physical activity (Lawrence et al., 2010). Still

another possibility is that individuals who live in low income neighborhoods are impacted by the lack of access to supermarkets, and excess access to fast food chains, however due to the disproportionate number of ethnic minorities in these neighborhoods; minorities are more affected than Caucasians. “Purchasing high-density, low-nutrient food makes good economic sense for low-income families because, per calorie intake, it is cheaper than low-density, high-nutrient food such as fruits and vegetables” (Drewnowski & Spector, 2004, as cited by Moffat, 2010, p. 6). Whether it is because of one or all of the factors it is clear that individuals that live in inner cities or have low incomes are at a high risk for obesity.

School and Peer influences

Closely related to neighborhood influences are school and peer influences. Individuals spend more time in their school environments, outside of their home, than any other place (Lawrence et al., 2010). Though many schools have begun to serve more nutritious meals, many have not, especially those that are in low income areas; this is because healthier food is less affordable. Many schools across the country serve high fat, and large portioned meals, which do not teach children how to be healthy or eat moderately (Lawrence et al., 2010). In addition to schools not providing healthy foods, many schools also do not place physical activity as a top priority (Lawrence et al., 2010). In fact, one study found that, “only four percent of elementary schools, eight percent of middle schools, and two percent of high schools provide daily physical education” (Lawrence et al., 2010, p. 11). The lack of encouragement and support to live healthy as children can easily translate into adult life. If people do not have healthy habits within their family environments, then they are more likely to be influenced by peers. Levitsky (2005) argues that people are also influenced by the amount of people that they eat with, and that those who eat with groups of people tend to eat greater amounts of food. Additionally, they are also influenced

by the amount of food those people are eating. If peers are eating over-portioned meals, it can cause individuals to overindulge. (Levitsky, 2005). School and peer influences have a strong impact on children's eating and physical activity behaviors because second to the family, children spend a significant amount of time with their peers.

Cultural/ethnic influences

While obesity is increasing across all populations, it is increasing at higher rates for ethnic minorities (Deckelbaum & Williams, 2001, p. 239). For both genders, childhood obesity is highest among the Mexican American population, second highest within the non-Hispanic black population, and lowest in non-Hispanic white youth (Deckelbaum & Williams, 2001). Eliadis (2008) states that food is very important to people's heritages and culture. In terms of cultural influences research suggests that different cultures emphasize food as part of their traditions, and may not be aware of nutritional facts. According to Kumanyika (2008), "types and amounts of food and beverages, flavors, textures, food combinations, and traditional uses and meanings of food mark differences among ethnic groups and societies, convey symbolic meanings, create social interactions, and define pleasure and punishment" (p. 61). Food has different meanings amongst the many different cultures, and because of its importance it is not surprising that food traditions or patterns in different cultures can lead to obesity. In fact, according to Garine & Pollock (1995), "the cultural value system may include enlarging the body, or reducing its size. The means by which a particular body shape is attained and maintained are also culturally specified" (XIV). Parental eating behaviors are passed on to children, which leads children to eat in similar ways as they become adults (Kumanyika, 2008).

In addition to the other cultures' influences on eating behaviors, the culture of the United States also impacts the obesity epidemic. According to Klaczynski, Gould & Mudry (2003), the

United States values individualism, and consequentially people view others' obesity as their own doing without a consideration any environmental factors. Klaczynski et al. (2003) state that individuals are told by media and peers that being thin is the only way to have the ideal body. "The western emphasis on individualism suggests that youths will view their peers' weight and, indeed, their own weight as outcomes of personal efforts and failures to achieve the thin ideal" (Klaczynski et al., 2003 p. 308). Though there is such a high emphasis on the thin ideal, there has been a contradictory change in eating patterns in American culture. In a recent study, Sturm (2008) discusses how between the years of 1970 and the mid 1980's caloric intake was consistent, however after that increased significantly. The increase in calories mainly has come from carbohydrates, beverages, and snacks filled with sugars (Sturm, 2008). Sturm (2008) found, "the availability of sugar-sweetened beverages increased by 8.5 gallons per capita per year from 1985 to 2005; 40% of this increase was due to fruit flavored drinks and sports drinks, and the remaining was due to carbonated soft drinks" (p. 743). These statistics indicate that the more accessible unhealthy food becomes, the more individuals consume. Due to the importance of following one's cultural traditions and trends, culture has a strong influence on individuals' eating behaviors and weight.

Family lifestyle

Just as important as cultural influences, families also have a major role in their children's weight. Family is the first place children are socialized, making the family the primary environment for children to learn healthy or unhealthy eating habits. In fact, "dietary preferences and physical activity patterns are probably shaped early in childhood, influenced by parental practices and familial environment" (Etelson, Brand, Patrick & Shirali, 2003, p. 1367). Young children are highly susceptible to parental behaviors, which mean that it is a crucial period for

parents to teach how to live healthy lifestyles. Children are more likely to be overweight when families do not eat meals together, and if children spend multiple hours watching TV per day (American Journal of Sociology, as cited in Gordon, 2008). In fact, “television and video games have contributed to more sedentary leisure activities as well as increased snacking and inappropriate food choices” (Speiser, et al., 2005). When parents provide structure in meals it allows them to prepare well balanced meals, and to be sure that their children eat proportioned meals (Gordon, 2008). In addition to impacting children’s weight and health during meal time, parents also influence their children’s weight by promoting or not promoting active lifestyles (Gordon, 2008).

In order to prevent obesity by promoting healthy lifestyles through meal time and the encouragement of physical activity, parents need to be aware of the standards for being overweight or obese so that they can recognize it if it affects their children. Etelson et al. (2003) suggest that parents of overweight children understand the health concerns that stem from obesity, however are less likely to recognize obesity in their own children. Furthermore 10.5% of parents of overweight children demonstrated accuracy in their views of their children’s weights, whereas 59.4% of parents of children who were not overweight had accurate perceptions (Etelson et al., 2003). If a parent’s perception of their child’s weight is skewed, and consider their child to be underweight when in fact they are overweight or at an appropriate weight, it can cause the parent to feed their child too much, thus leading to children being overweight (Kumanyika, 2008). Since parents take the primary role in socializing their children, they can positively or negatively influence their children’s relationship with food.

Strategies to address the obesity epidemic

Since obesity affects people across all populations and age groups, there is a need to explore multiple methods of reversing it and prevention. Deckelbaum & Williams (2001)

discuss the importance of prevention methods of obesity for preschool, childhood and adolescence. Parents of pre-school aged children need to be aware of nutritional education and have to initiate children into a healthy way of eating (Deckelbaum & Williams, 2001). In childhood it is important to monitor children's weight and if possible to prevent excess weight gain before children reach puberty. Children also must be informed of nutritional education and encouraged to participate in physical activity (Deckelbaum & Williams, 2001). Deckelbaum & Williams (2001) suggest that during adolescence it is important to prevent weight gain after growth spurts and for children to be physically active. In order for childhood obesity to be prevented, it is important for parents to educate their children about healthy food choices, and to encourage them to participate in physical activity during all stages of their childhood and adolescence.

In addition to encouraging and educating children, another means for prevention is for parents to become involved in programs. "Parents need to be involved in obesity prevention programs. For such programs to be successful, however, pediatricians and other health care professionals must facilitate parental awareness of obesity" (Etelson et al., 2003, p. 1367). Prevention programs for parents can be a useful tool in the prevention of obesity for children, however unless parents are made aware of the growing disease, and its consequences, then the programs will not be a significant tool. Eliadis (2008) discusses another method of preventing or reversing obesity, and states that to solve the problem of obesity the focus has to be on helping young people make behavioral changes. One more method for decreasing obesity is for social workers to advocate for the young population that is obese. Since every family system is also part of a community system it can be difficult for families to make lifestyle changes, with surrounding influences in the environment. Social workers can advocate for children by teaching

family members the importance of advocating for their own children by promoting healthy lifestyles to the community in which they live. (Eliadis, 2006). The Strengths-Based Perspective can be a useful approach to use with this population because it is something that could help them in their adult years, especially in college when they are independent from their families. By using this perspective, social workers focus on the positive strengths that children who are obese have, and then empower them by helping them learn how to use their strengths to make positive lifestyle changes such as eating healthier and participating in physical activity (Eliadis, 2008). There is no simple answer to address the problem of obesity, however there are many strategies available that could help prevent or decrease obesity within the United States.

Health consequences

Obesity is a significant problem, and is likely to occur long term in many individuals. For example, children, who are obese, often are obese as adults as well (Lawrence et al., 2010). Long term obesity can place individuals at risk for more serious health issues, and though the medical issues often do not begin until adulthood, adults who were obese since childhood have a hard time losing and maintain weight loss (Whitaker, Wright, Pepe, Seidel, & Dietz, 1997, p. 869). Obesity is linked with many medical problems, and mortality amongst adults and children (Speiser, Rudolf, Anhalt, et al. 2004). Deckelbaum & Williams (2001) discuss results from the Bogalusa Heart Study which indicate that 60% of children between the ages of five and ten have at least one cardiovascular risk factor such as high blood pressure or raised insulin levels, and 20% of children within those ages had two or more risk factors. There have also been increases in other ailments related to obesity. In the last ten years there has been a significant increase in Type 2 diabetes in children, which in the past had primarily been a disease that affected adults (Speiser et al., 2005). In fact, “four percent of new diagnoses of diabetes before 1992 were classified as type 2 diabetes and in 1994, 16% of new diabetics were classified as type 2”

(Deckelbaum & Williams 2001, p. 241). Obesity has the potential to cause hormonal problems for girls such as menstrual disorders and polycystic ovarian syndrome (Speiser et al., 2005). Furthermore obesity is associated with heart disease, hypertension, respiratory problems such as asthma, sleep disorders, gallbladder disease, liver disease, and orthopedic problems that can begin as children and worsen in adult life (Speiser et al., 2005).

Lawrence et al. (2010) suggest that obesity comes with not only physical problems, but also psychological problems, and that young people who are overweight can develop a negative self-esteem because of how they are treated by peers and society. Klaczynski et al. (2003) found that self-esteem is impacted by obesity, however varies within cultures depending upon how much value the cultures put on being thin. Klaczynski et al. (2003) reported that self-esteem and negative attitudes towards obesity are negatively correlated, however how individuals internalize the cause of their own obesity, impacts that correlation. Klaczynski, et al. (2003) also found that BMI impacts self-esteem, and is not impacted by one's perception of the cause of their own obesity. As the literature reports, it is a fact that individuals do have a role in obesity. Nonetheless, however individuals cannot be viewed as the sole cause of obesity. The literature expresses the importance of exploring social factors when researching the causes of obesity. Much of the literature focuses on childhood obesity because childhood obesity is often a factor in adulthood obesity. Moreover there has been a large increase in obesity amongst children; it is apparent that other factors besides individual ones are involved since children are strongly influenced by others. Research focuses on the causes of obesity and the preventative measures, but there appears to be a gap in the literature in respect to young adulthood obesity. Research generally focuses on childhood obesity, or adulthood obesity, but overlooks the young adult population. The literature discusses causes, effects, preventative measures for children, and

reveals that adults have a difficult time losing the weight and maintaining healthy weights but does not reveal information about what could be done between childhood and adulthood. If more research was done regarding the young adult population then ways to reverse obesity before individuals reach adulthood could be discovered. The study will aim to explore the social factors one experiences growing up and the impact those factors have one's ability or lack of ability to maintain a healthy weight as a young adult in college. The research question for this study: what social and cultural factors impact young adult college student's weight?

Methodology

This researcher conducted a quantitative relational study that explored the social factors of family lifestyle, neighborhood, peer and school influence, and culture during individuals' adolescence and their relationship to obesity in young adults.

Subjects

The participants in this study were part of a convenience sample. All participants were from a private Catholic college in southern New England, ranging from freshman to seniors who represented both the male and female gender. The researcher distributed 25 surveys (See Appendix A) to students enrolled in an Introduction to Social Work course, to ensure that students from each grade level were represented. The researcher also created an online survey that was advertised through Facebook; this Facebook group was restricted to students from the college. In a consent letter (See Appendix B) written by the researcher, each participant was informed that the survey should take no more than ten minutes and that their identity would remain anonymous.

Data gathering

The researcher gathered information through surveys which consisted of quantitative questions, including Likert scaled questions, yes or no questions, and open ended/fill in the blank questions. Additionally, there was one qualitative question. The researcher was interested in learning about the relationship between social factors that occurred in individuals' adolescence and how these factors impacted obesity amongst young adults, specifically, college students. The survey contained questions regarding demographics, the participant's body mass index, participant's current lifestyle, family lifestyle, culture of participants, the neighborhood environment, and lastly about their school environment. Additionally, participants were asked to identify eating rituals or patterns of eating from their childhood which impacted their weight today. By having questions about each factor, and questions about participant's current lifestyle, it allowed the researcher to identify what childhood factors impact college students' relationships' with food the most.

Data analysis

The data was collected and entered into SPSS8. Upon entering the data into SPSS, the researcher ran tests to gather descriptive percentages and/ or frequencies about the demographic questions including participant's age, year in school, ethnic background, and body mass index. The researcher then ran tests to find correlations between the social factors of family lifestyle, neighborhood environment, school environment, and culture, and their relationship with participant's body mass index. In order to find the correlations between each specific social factor and body mass index, the researcher grouped the variables for each factor, and compared all the variables for each factor and body mass index at once.

Findings

This relational study aimed to evaluate the correlation between obesity and social factors present during participants' childhood, including family lifestyle, culture, neighborhood environment, and school environment. A total of 65 participants completed the survey. The researcher distributed 25 surveys to students taking an Introduction Social Work course, and also had an online survey option. In total 13 paper surveys were returned to the researcher, and an additional 52 were completed online. See Table 1 in Appendix C for the descriptives of the study's participants. According to the body mass index chart, out of the 65 participants most were at a normal weight, about one-third were overweight, and very few participants were obese or underweight. See Table 2 in Appendix D for the body mass index frequencies of the participants.

Out of the 65 participants, at least 41.5% were often provided with healthy meals at home throughout their childhood whereas only 1.5% of participants were rarely provided with healthy meals. In total, nearly half, 47.7% reported that they always sat as families for meals, and only 1.5% reported that they never did. In regards to how often food was used as positive reinforcement, 40% reported that it was used sometimes, but only 9.3% reported that it was often or always used. 73.8% of the sample lived in suburban neighborhoods, and 58.5% reported that their neighborhoods were very safe; only 3.1% reported that their neighborhoods were not safe. A significant amount of participants, 16.9%, reported that they were not provided with healthy meals at school during their childhood and adolescence, and only 7.7% reported that they always were; however, though many participants were not provided with healthy meals by the schools, 63.1% reported that they did not often use or never used their school vending machines. In addition 61.5% were required by their schools to partake in at least 3 to 5 days of physical

activity. Lastly, of the 65 participants 69.2% stated that food was somewhat significant or significant in cultural celebrations, however this did not appear to impact body mass index.

In order to perform statistical analysis of the data, a Spearman rho correlation coefficient was taken. This test allowed the researcher to identify correlations between the social factors and body mass index. A significant weak, negative relationship was found between body mass index and the hours per week participants spent doing physical activity throughout their childhood and adolescence ($\rho(3) = -.229, p < .05$). This indicates that the more hours participants spent doing physical activity the lower their current body mass index was. Additionally, a significant positive relationship was found between the frequency of food being used as positive reinforcement during childhood and current body mass index ($\rho(4) = .234, p < .05$). This statistic allows the researcher to conclude that as the frequency increased for food as positive reinforcement, the participants' current body mass increased as well. Moreover, there was a negative, however non-significant relationship found between body mass index and being provided healthy meals at school during childhood and adolescence ($\rho(3) = -.205, p > .05$). This suggests that the less frequent participants were provided healthy meals by the school the more likely they were to have a higher body mass index. Though this relationship is not statistically significant, it is still important to report because it is only .01 above the requirement of statistical significance.

In addition to using Spearman's rho to find correlations between the social factors and body mass index, mean ranks were also calculated to understand how having obese parents can impact body mass index. Statistics indicate that the mean rank for having an obese parent and body mass index is 51.30, which implies that having obese parents influenced body mass index more than not having obese parents. Additionally, the mean rank of having a mother that is obese is 3.17 which is higher than the mean rank for having an obese father which is 2.75. This

suggests that having a mother that is obese is more influential on participant's body mass index than having a father that is obese.

In addition to the survey data, participants were also asked an open ended question which asked them to discuss any eating rituals or patterns from their childhood and adolescence that had an impact on their current body weight. One theme from the responses was that habits formed around eating during their childhood remained with them as young adults. In fact, one participant who learned healthy habits as a child stated, "I feel that I can eat healthy because of how my parents ate when I lived at home. I also learned how to cook healthy so that helps." Another participant who did not learn healthy habits as a child stated, "Dessert was always a part of our meals, so I have a hard time not having dessert or some sort of snack during the day." Furthermore, another reported that food was often the focus of family and cultural gatherings. One participant stated, "Food is a large part of my culture so you cannot say "no" to mom's meals or anyone in my extended family. You were always expected to have a second serving." Another participant stated, "food was the main focus of family gatherings, birthdays, celebrations." Additionally another participant stated, "I eat a lot of pasta and carbohydrates because of growing up on Italian food."

By analyzing the qualitative responses the researcher was able to conclude that participants believed that family lifestyle, culture, and the value placed on physical activity during childhood, played a significant role in their current body mass index.

Summary and implications

This study was conducted to gain an understanding of how social factors including family lifestyle, culture, neighborhood environment, and school environment that were present during participants' childhood, impact obesity. The hypothesis of this study was that the four social

factors would affect the current body mass index of college students. To conduct this study the researcher distributed 25 surveys to an Introduction to Social Work course, and also had an online survey option. The survey consisted of questions surrounding participant's body mass index, current lifestyle, and about each of the social factors being studied. Lastly, an open ended question was asked about any eating rituals or patterns that participants learned as children that they thought had impacted their weight today. Interestingly, in regards to body mass index, 42 of the 65 participants were at healthy weight. Though several participants were overweight, only two were obese. Due to the fact that only two participants were obese relationships the researcher could not directly draw conclusions about social factors and their relationship to obesity; however correlations were found between the social factors and increasing body mass indexes, which is equally important. Quantitative data indicates that the majority of the participants grew up in homes that promoted healthy lifestyles by providing healthy meals and sitting together as families during mealtime. This is supported by qualitative data in which many participants reported that the habits they formed from their families whether healthy or unhealthy have stuck with them today. Additionally most of the sample grew up in suburban neighborhoods, and over half of the participants grew up in neighborhoods where it was safe to go outside and be active. Furthermore most participants reported that schools required them to do physical activity multiple days per week; however interestingly enough only a very small amount of participants reported that they were always provided with healthy meals by their schools. Few correlations were found between the social factors and increasing BMI; this could be because overall the sample grew up in healthy environments in terms of the social factors being studied. One interesting finding is that having obese parents specifically a mother that is obese does influence body mass index.

The data does not largely support the hypothesis, but upon analyzing it, three significant correlations were found. There was a significant negative relationship between the hours per week doing physical activity and body mass index. This indicates that the more active participants were as children the less likely they were to have high body mass indexes today. This theme was also reflected in the qualitative data as many participants reported that the importance of being active as children through sports or dance has carried into their young adult lives impacting them to value physical activity. Additionally there was a negative relationship found between the family lifestyle variable of the frequency of food being used as a positive reinforcement and body mass index. This is important because it could imply that participants have a lower body mass index today because they did not develop the habit of rewarding themselves with food. The fact that two of the three correlations were found in family lifestyle indicates, as literature supports, that family is the most important part of shaping habits and lifestyles. Furthermore a negative, but non-significant correlation was found between being provided healthy meals by schools and body mass index. School is an environment that individuals spend the most time outside of their own homes, therefore it is not surprising that a correlation was found between these two variables. Due to the extensive period of time individuals spend at school many behaviors and habits from school and their peers. This finding is important to note because a significant amount of participants reported are not provided healthy meals at school on a regular basis. Just as the provision healthy meals increases the chances of having a lower body mass index, the statistic indicates that being provided unhealthy meals increases the chances of having a higher body mass index. This conclusion speaks to why a significant number of participants were overweight. Though quantitative data does not support the hypothesis that the significance of food in cultural traditions impacts body mass index, the

qualitative data provides some evidence. Many participants' responses to the open ended question implied that food was a large part of their cultural traditions, especially eating large quantities of the traditional food.

Though all correlations found are important and informative, the limited number of correlations found may be a result of the limitations present in the study. One limitation in this study was that it was conducted at a small private catholic institution, which indicates that the study does not generalize to all college students. Additionally, this particular institution is largely consisted of Caucasian individuals which was reflected in the sample (87.7%). Furthermore, there was an unequal ratio of males and females, as 86.2% of the participants were female. Additionally, there was a small sample size, as only 65 individuals participated in the study. Due to the small sample, external reliability was weak, and likely did not reflect the institution as a whole. One further limitation was the lack of participation in response to the open ended question. This question could have helped the researcher further explore how social factors influence body mass index. Moreover, there was only one additional question about culture in addition to the question asking what ethnicity the participants identified with. The limited questions asked about culture most likely impacted the results which did not show and relationship between culture and body mass index.

Studies of this nature are important because as childhood obesity increases, obesity becomes more prominent amongst young adult and adults. In order to address obesity amongst young adults and adults it is necessary to learn what factors impact obesity amongst children and adolescence so that preventative measures can be utilized. Learning the factors that lead to childhood obesity will potentially lead to an overall decrease in obesity. Further research needs to be conducted with a larger and more diverse sample in order to see how these social factors

truly influence obesity in individuals. It would be interesting and beneficial if future research included questions about socioeconomic status; this factor could potentially play a role in what types of food children had access to both in home and school environments.

This study has additional implications for policy and social work practice. The fact that, as children, most participants were required to participate in multiple days of physical activity at school was directly correlated to the fact that so many participants were at a healthy weight. Additionally, many participants noted that because of the value placed on physical activity when they were younger, they tend to value this physical activity now, as young adults. Given this information, it is important for social workers to advocate for children by promoting the importance of physical education to school boards that do not have strong physical education programs. Additionally, social workers can advocate by lobbying to those school boards to create and enforce policies regarding healthy physical activity requirements. Furthermore, in this study, it is apparent that many individuals were not provided healthy meals by school.

This indicated a need for social workers not only encourage schools have strict policies in regards to physical education, but also in terms of the types of foods that are available to students. In addition to promoting healthy school policies, social workers must also advocate for children by working with family systems. It is evident from the results of this study that family lifestyle is a key variable in young adults' weight; family is the primary source of learned habits and behaviors. Consequently, it is necessary for social workers to work with parents of children, to educate them about nutrition, and additionally find necessary resources available to provide these parents with the tools they need to promote healthy lifestyles at home.

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Appendix A

1. Sex:

Male or Female

2. Year in school:

Freshman

Sophomore

Junior

Senior

3. What ethnic background do you identify with?

African American

Asian

Caucasian

Native American

Hispanic

Other

4.

Find your height in inches on the left, and move across the chart to find your weight. The number at the top of the column is the BMI (Calorie Control Council, 2010).

BODY MASS INDEX CHART																	
Height (inches)	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
58	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167
59	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179
61	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185
62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191
63	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197
64	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204
65	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210
66	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216
67	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223
68	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230
69	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236
70	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243
71	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250
72	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258
73	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265
74	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272
75	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279
76	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287

58 is 4 ft 10 60 is 5 ft 62 is 5 ft 2 64 is 5 ft 4 66 is 5 ft 6 68 is 5 ft 8 70 is 5 ft 10, 72 is 6 ft

74 is 6 ft 2

Using the Body Mass Index Chart, where does your BMI fall?

Below 18.5 Between 18.5 and 24.9 Between 25.0 and 29.9 30 or higher

5. How many days per week do you participate in 30 minutes or more of extracurricular physical activity?

6. How frequently do you eat three meals a day?

Never Rarely Sometimes Often Always

7. How many snacks (junkfood i.e. soda, chips, cookies etc...) do you typically consume per day?

8. How often do you eat fast food?

Never Not often Sometimes Often All the time

9. How would you describe your self esteem?

Very negative Negative Somewhat positive Positive Very positive

10. How often during your childhood and early adolescence were you provided healthy meals at home?

Never Not often Sometimes Often All the time

11. How often during your childhood and early adolescence did you and your family sit down together to eat meals?

Never Not often Sometimes Often All the time

12. Throughout your childhood and early adolescence how many hours per week were you involved in physical exercise vs. sedentary activities i.e. playing video games, watching tv, doing arts and crafts, and playing on the computer etc...

13. Throughout your childhood and early adolescence how often was food given to you as positive reinforcement for good behavior?

Never Not often Sometimes Often All the time

14. Would you characterize your parents as being overweight?

Yes or No

15. Would you characterize your parents as being obese?

Yes or No

16. How significant was food in your cultural celebrations?

Very insignificant Insignificant Somewhat significant
Significant Very significant

17. How would you describe the neighborhood setting in which you grew up in?

Urban Suburban Rural

18. How safe was it for you to go outside and play or do physical activity?

Very unsafe Unsafe Somewhat safe Safe
Very safe

19. How often were you provided with healthy meals in school?

Never Not often Sometimes Often All the time

20. How often did you use the snack/soda vending machine at school?

Never Not often Sometimes Often All the time

21. How many times per week was physical activity required during the school day?

1 2 3 4 5

22. Were there any eating rituals and/or behaviors from your childhood that you feel impacted your body weight today?

Appendix B

Dear Potential Participant:

I am a social work major at Providence College, and am inviting you to participate in a study of childhood social factors and their impact on the health of college students. The purpose of this research is to identify factors associated with nutritional patterns/behaviors of college students. Data gathered in this study will be reported in a research paper at Providence College.

At this time, college students are being recruited for this research. Participation will involve answering survey questions about social factors including: neighborhood environment, family, school environment, and culture, as well as questions about participants' current view of food and physical activity. The time spent filling out the survey should not exceed 10-15 minutes.

There are no anticipated significant risks associated with involvement in this research. Participants are free to stop participation in the study at any time until identifying information is removed from the responses.

Benefits of participating in this study include helping the researcher to formulate a better understanding of the relationship between childhood social factors and college students' relationships with food, which may help the younger generations in the future.

Confidentiality of participants will be protected by not having any identifiable information on the survey. Once the data are obtained, all information linking the participant to his or her response will be destroyed so that responses can no longer be identified with individuals. Data will be reported by analyzing correlations of all of the data that has been gathered.

Participation in this study is voluntary. A decision to decline to participate will not have any negative effects for you. You may withdraw from the study at any time up until February 16, 2011 when the researcher will finalize the data.

THE RETURNING OF THE SURVEY INDICATES THAT YOU HAVE READ AND UNDERSTOOD THE ABOVE INFORMATION AND THAT YOU HAVE HAD THE OPPORTUNITY TO ASK QUESTIONS ABOUT THE STUDY, YOUR PARTICIPATION, AND YOUR RIGHTS AND THAT YOU AGREE TO PARTICIPATE IN THE STUDY.

Thank you for participating in this study.

Sarah Burke, Social Work Student, 203-824-3504, sburke8@friars.providence.edu

PLEASE KEEP A COPY OF THIS FORM FOR YOUR RECORDS

Appendix C

Table 1
Demographics of Participants

Sex	
Male	13.8%
Female	86.2%
Class Year	
Freshman	16.9%
Sophomores	6.2%
Juniors	3.1%
Seniors	73.8%
Ethnicity	
African American	3.1%
Asian	3.1%
Caucasian	87.7%
Caucasian and Hispanic	1.5%
Caucasian and African American	1.5%
Cape Verdean	1.5%
Arabic and Polish	1.5%
Days of Physical Activity per week	
1 or less	9.2%
2	9.2%
3	21.5%
4	27.7%
5	12.3%
6	15.4%
7	4.6%
Frequency of 3 meals per day	
Never	3.1%
Rarely	13.8%
Sometimes	24.6%
Often	27.7%
Always	29.2%
Number of junkfood snacks eaten per day	
1	36.9%
2	33.8%
3	15.4%
4	4.6%
5 or more	6.2%
Self-esteem of Participant	
Very negative	3.1%
Negative	12.3%
Somewhat positive	18.5%
Positive	58.5%
Very Positive	7.7%

Appendix D

Table 2
Body Mass Index Frequencies

BMI	Frequency
Below 18.5	2
Between 18.5 and 24.9	42
Between 25 and 29.9	17
30 or higher	4
(N=65)	

Note: Having a BMI below 18.5 indicates that a participant is underweight. Having a BMI between 18.5 and 24.9 indicates that a participant is at a healthy weight, and between 25 and 29.9 that a participant is overweight. Having a BMI that is 30 or higher suggests that a participant is obese.