

Correlation Between Obesity, Emotional, Social Well-being, and Behavioral Problems among Adolescents

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Abstract

Obesity is considered a multivariate syndrome, which negatively affects the whole body's functioning. Poor health conditions resulting from obesity may act as a barrier to developing a sound mind, thus paving the way for poor learning behavior and outcome. This study explored the correlation between obesity, emotional and social well-being, and adolescent behavioral problems. A quantitative approach using descriptive-correlational design was employed. The 120 students served as respondents to the study. The following research instruments were used: Respondents' Profile Questionnaire, Respondents' Emotional Well-being Questionnaire, Respondents' Social Well-being Questionnaire, and Respondents' Behavioral Problems Questionnaire. Mean and standard deviation and Pearson Product-Moment Correlation Coefficient were used to analyze the data gathered. There were more overweight than obese among the respondents of the study. Results showed that respondents' well-being is high as they manifest a low level of stress and emotional eating. In addition, they manifest a high level of social interaction and a low level of behavioral problems. The respondents' social well-being as social contact was greatly influenced by the respondents' level of obesity. Other variables and constructs were not affected by their level of obesity. It is recommended that stakeholders in education, sports, and health put a mechanism to guide all school learners to participate in physical activities.

Keywords: learning behavior, level of stress, multivariate syndrome, poor health condition, social interaction

Introduction

The prevalence of obesity and overweight among adolescents and adults in the Philippines showed a gradually increasing trend. The Asia Roundtable on Food Innovation for Improved Nutrition (ARoFIIN), a public-private partnership, reported an overweight and obesity prevalence of 23.6% and 5.1%, respectively, in 2016. In addition, a national study reports a gradual increase in the prevalence of overweight and obesity among adults 20 years and over in the Philippines. The approximately 50% increase in the prevalence of overweight and obesity versus the 3.9 percentage point decrease in chronic energy deficiency (CED) or underweight in 20 years reflects the country's dire situation. Not only does the persistent problem of undernutrition exist, but also overweight and obesity are emerging as public health problems.

The number of people who are obese is growing. Thus it will be a trend in the future. It is an independent disease and can directly lead to cardiovascular diseases, diabetes, musculature disorders, and some cancers. Obese teenagers experience breathing difficulties, increased risk of fractures, hypertension, early markers of cardiovascular disease, insulin resistance, and psychological effects (WHO.int.2016). Overweight kids face an elevated risk of physical and mental well-being being affected. Indeed, the impacts of childhood obesity are far-reaching, affecting not only children but parents, schools, neighborhoods, and health care systems. Furthermore, there is proof that childhood obesity can become a life sentence.

In children and teenagers, psychosocial abnormalities are closely associated with obesity. Adolescent obesity can be correlated in adulthood with later depression (Sutaria, Devakumar, Yasuda, Das, & Saxena, 2019). Abdominal obesity also seems to be closely related in males to concomitant depression. While obesity-induced depression can affect both sexes, females demonstrate a more robust correlation. As teens, obese women may be at higher risk of depression or anxiety disorders (Chen et al., 2016).

Among obese children, appearance-related teasing is more frequent and upsetting. Higher weight issues, more isolation, poor self-perception of physical appearance, a greater desire for sedentary or solitary behaviors, and a lower desire for social activities are correlated with the degree of teasing (Harrist et al., 2016). Overeating among adolescents is associated with various adverse behaviors and negative psychological experiences, including low self-esteem and suicidal tendencies (Marzilli, Cerniglia, & Cimino, 2018). The association of suicidal tendencies is stronger in those meeting the criteria for binge eating syndrome (Peters, Bowen, & Balbuena, 2019). Physical health and emotional well-being are interconnected. Physical health impairment has been found to mediate the association between obesity and impairment in emotional well-being in adults (Moharei, Norooziasl, Behdani, & Ghaemi, 2018). It has also been associated with poorer self-rated health in adolescents (Warnoff, 2016).

Various studies revealed the impact of obesity on adolescents' emotional, social, and behavioral well-being. The study of Odar, Merianos, Nabors, & Peugh (2016) revealed that adolescents who are overweight and obese are independent risk factors for poor social outcomes. Obese adolescents show that there is a higher rate of psychological maladjustment compared to an adolescent who has normal weight. Another study concludes that adolescents with obesity ages 9-18 showed a significant positive correlation with impulsive behavior, motivational impulses, and mental instability. Obese teens quickly responded with extreme emotions, and these responses were positively correlated with the degree of obesity (Pan, Li, Feng, & Hong, 2018).

Theoretical Framework

This study is anchored to the following theories: Psychosomatic Theory by Kaplan and Kaplan (1957), Psychodynamic Theory by Bruch (1985), and the Social Cognitive Theory (SCT) by Bandura (1986).

Kaplan & Kaplan's (1957) Psychosomatic Theory indicates that obesity arises from the inability of a person to differentiate feelings of hunger from other emotions. The mechanisms responsible for this are not

fully understood, but biological and learning factors are hypothesized to play a role. Biological considerations include the impact on the activity of the neurotransmitter of protein and carbohydrate consumption, which induces physiological incompatibility between the act of eating and the experience of extreme emotion, such that eating is enhanced over time to minimize negative emotions. Obesity is often due to an inability to differentiate hunger from body signs of emotional distress by the psychodynamic theory (Bruch, 1961). This inability, however, is the product of interactions in relationships with early attachment.

According to Bruch (1973), the experience of hunger is not innate but requires learning for proper organization into recognizable patterns. In the early experiential and interpersonal processes surrounding the fulfillment of nutritional and other body needs, negative experiences indicate that the individual does not learn effectively to mark a collection of physiological indications as 'hunger.' This consequently interferes with the ability to identify signs of hunger or satiety and to separate the desire to eat from other unpleasant emotions and sensations (the theory of differential sensitivity). Overeating in reaction to feelings leads to obesity, as in psychosomatic theories.

The SCT theory states that individual behaviors are shaped through behavior, cognitions, and other unique characteristics and the environmental process (Bandura, 1986). The foundation of SCT is that behavior is learned by observing a mode, such as a parent, peer, or another adult. Children learn by observing actual behaviors of the mode and the resulting consequences of their behaviors. Regarding social interactions and peer relationships, children learn to engage in interactions and how these interactions should look by observing various models to engage in interactions.

This theory addresses the social behaviors and experiences of obese children through observing their social interactions with peers. These social interactions between obese children and their healthy weight peers include social bids and their corresponding outcomes, peer solicitations and responses, social roles, and social learning strategies. Children are aware of differences in others and respond in different ways

to those peers that are different from themselves (Neitzel, Drennor, & Fouts, 2014; Margulies et al.,

2008); therefore, it is expected that the social experiences of obese children may differ from the experiences of their healthy-weight peers. Obese children's efforts to play with peers may receive different responses; their social bids may be rejected or ignored more frequently than their healthy weight peers, and they may receive fewer solicitations from playing with their peers (Shin & Shin, 2008)

Conceptual Framework

Obesity is a condition wherein the body accumulates excess body fat to the extent that it impairs physical function and increases the risks of certain illnesses. The Body Mass Index (BMI) is a screening tool for ages 5 to 19 years to assess the risk of overweight and obesity in children and adolescents. It is age- and sex-specific and is expressed as a percentile. Essentially, a person's BMI is computed by dividing the weight in kilograms by the square of the height in meters (kg/m^2). A BMI greater than 85th percentile to less than 95th percentile is considered overweight, while those with a BMI equal to or greater than the 95th percentile are considered obese (WHO, BMI-for-age, 2007).

Adolescence is the stage of life vulnerable to many factors. It is a period of life that may impact problems and well-being. Therefore, adolescence is the stage with high risk in terms of psychological problems, subjective well-being, and adjustment. Mental well-being is particularly related to the psychological dimension associated with positive outcomes such as good coping skills with social competence. (Pinto et al., 2017). Higher levels of emotional ability and self-esteem would predict higher life satisfaction indicating well-being. This suggests that social-emotional factors positively influence adolescents' subjective well-being.

On the other hand, a study showed that a predictive capacity of social-emotional factors is lower than for emotional symptoms regarding behavioral problems. This may demonstrate a deficit in managing emotions and low self-esteem. (Usue et al., 2019). Common emotional

problems result from being an adolescent itself, experienced problems like psychiatric problems or illness. Becoming an adolescent is part of a stage of maturity that tags, along with issues that must be confronted.

A study on the influence of the stigma of obesity on overweight individuals done by Wang, Brownell, and Wadden (2004) has found that those who are obese and overweight show consistent non-favorable attitudes toward in-group members. In a study among Kenyan adolescents and parents' responses, results showed a 1.6 times prevalence of emotional and behavioral problems, with girls internalizing more the problems than boys (Magai, Malik, Koot 2018).

Emotional problems indicated through a child's indications of anxiety and depression based on perceived predictors may allow adults and institutions to help a child. (Karevold, 2008). The World Health Organization recognizes that children with emotional problems are irritable, angry, or frustrated. Physical indications of emotional problems may be detected as stomachache, headache, or nausea.

An obese adolescent has changes that are more obvious in physiology, often leading to emotional, social, and behavioral deviation. This can result in the abuse of substances, smoking, alcohol abuse, and depression leading to suicide. Hence, the relationship between adolescent obesity and emotional, social, and behavioral problems influences the adolescent's psychological wellbeing (Chooi, Ding, & Magkos, 2019).

Adolescence shows body dissatisfaction when they are obese, and it is stronger in females than males (Mitchison, & Mond, 2015). Findings from recent studies suggested that body dissatisfaction may mediate the association between obesity and impairment in both boys and girls (Mond et al., 2011). In another study, it is reported that physical health impairments have been found to mediate the association between obesity and impairment in emotional well-being (Van Zutven, Mond, Latner, & Rodgers, 2015). Likewise, obesity is associated with poor self-rated health. A study in the United States revealed that self-rated health mediated the association between overweight and depressive symptoms in younger adolescents (Trambacz-Oleszak, Krzyżaniak, Szafrńska-Komarowska, & Kaczmarek, 2018). The adolescent with emotional problems manifests depressive symptoms, anxiety, irritability,

frustrations, or anger. Also, younger teenagers can experience physical symptoms related to emotions, such as stomach pain, headache, or nausea.

Obese children are at risk for significant health problems and face many psychological and social consequences, including social problems. An increased risk of loneliness lasting well into adulthood is faced by children who are obese. In decreasing the self-esteem of an obese child, factors such as peer rejection, weight-related bullying, and internalized social expectations play a major role. Also, adolescent isolation or seclusion has been related to depression and suicidal thoughts (Matali et al., 2020). Rupp et al. (2019) findings revealed that adolescents with obesity are more likely to experience bullying than their healthy-weight peers. Many authors have identified a strong link between obesity and internalizing difficulties, lower quality of life, and more profound social issues. Many studies have confirmed that obesity is the strongest predictor of stress in childhood; obesity significantly affects childhood depressive symptoms, low self-esteem, and social isolation due to negative relationships with school peers (Al-Agha, Al-Ghamdi, & Halabi, 2016).

Childhood obesity has become a worldwide health hazard. It is associated with social and behavioral problems (Al-Agha, Al-Ghamdi, & Halabi, 2016; Topçu, Orhon, Tayfun, Uçaktürk, & Demirel, 2016). Although the association between overweight/obesity and behavioral problems was not found in this study, some unhealthy eating behaviors were related to behavioral problems. Promoting healthy eating behaviors may be a primary step to prevent behavioral problems and obesity. The study finding of Charoenarparasmee, Louthrenoo, & Kittisakmontri (2016) showed no association between obesity and behavioral problems, but they identified unhealthy eating behaviors related to behavioral problems.

In young adolescents aged 10–14 years, behavioral disorders are the second leading cause of disease burden and the eleventh leading cause in older adolescents aged 15–19. Behavioral disorders include attention deficit hyperactivity disorder (characterized by difficulty paying attention, excessive activity, and acting without regard to consequences, which are otherwise not appropriate for a person's age), and conduct disorder (with symptoms of destructive or challenging behavior).

Behavioral disorders can affect adolescents' education and may result in criminal behavior (WHO, 2019).

This study explored the correlation between obesity, emotional and social well-being, and adolescent behavioral problems. This also assessed the relationship between the respondents' level of obesity and their emotional well-being; relationship between the respondents' level of obesity and their social well-being; relationship between the respondents' level of obesity and their behavioral problem.

Materials and Methods

Research Design

The study utilized the descriptive-correlational design that involves collecting data from the population of interest to explore the correlation between obesity, emotional and social well-being, and behavioral problems among adolescents. It utilized the data from the respondents (Campbell, 2015). The data were elicited through a modified research questionnaire. The data were statistically treated before they were analyzed and interpreted. The selected design allows flexibility in investigating and describing the relationship between independent and dependent variables.

Research Setting

The study was conducted at Jose Rizal Memorial State University-Main Campus and Dapitan City National High School. Both are located in the province of Zamboanga del Norte. Dapitan City is a third-class city based on income classification. In addition, data on age distribution showed a young population in Dapitan City with age at least 19 years old, comprising most people in the 2015 survey of the Philippine Statistics Authority.

Research Respondents

A total of 120 junior and senior high school students from the two schools were the study's respondents. Students were selected through purposive sampling from the main campus of Jose Rizal Memorial State University and Dapitan City National High School. These students have a BMI for an age greater than the 85th percentile. In addition, the parents of the same respondents were also interviewed. Therefore, the respondents' total enumeration is specific to the considered characteristics.

Research Instruments

The following research instruments were used to gather pertinent data and information:

A. Respondents' Profile Questionnaire. This is a researcher-made questionnaire to determine the respondents' level of obesity. The questionnaire asked for the respondent's age, sex, height, and weight to compute the respondent's BMI and determine the level of obesity.

B. Respondents' Emotional Well-being Questionnaire. This tool was adopted by Cohen et al. (1983) to determine the respondents' level of emotional health status. The emotional status was classified into stress and emotional eating.

C. Respondents' Social Well-being Questionnaire. This tool was adopted by Steeger (2014). This determined the respondents' social well-being and was classified into social contact, neighborhood and neighborhood cohesion, material deprivation, social isolation, societal institution, and social participation.

D. Respondents' Behavioral Problems Questionnaire. This modified researcher-made questionnaire looked into the respondents' behavioral problems. This is a four-point Likert Scale.

Data Gathering Procedure

Before conducting the research study, permission was obtained from the Office of the Graduate School, allowing the researcher to start gathering data. Permission was secured from the school principals, class advisers, and parents of the identified respondents. Then, the researcher personally did the actual data gathering. Other important research activities like tallying responses, data organization, analysis, and interpretation of data followed.

Ethical Considerations

The following were the ethical considerations of the study. The principles of ethical considerations by Bryman and Bell (2007) were complied with within this study. First, research respondents were not subjected to harm in any way. Respect for the respondents' dignity was prioritized. Protection of the privacy of research respondents, an adequate level of confidentiality of the research data, and the anonymity of individuals participating in the research were ensured. Moreover, deception and exaggeration about the aims and objectives of the research were avoided, and affiliations in any form, sources of funding, and any possible conflicts of interest were declared. Finally, any communication about the research was done with honesty and transparency, and any misleading information and the representation of primary data findings were avoided.

Data Analysis

The following statistical methods and techniques were utilized to derive comprehensive, valid, and reliable results with the aid of the statistical software Minitab:

Mean and Standard Deviation. This was used to determine the respondents' level of obesity, emotional and social well-being, and behavioral problems.

Pearson Product-Moment Correlation Coefficient or Pearson's *r*. This tool was used to test the significant relationship between the independent variable (level of obesity) and the dependent variables (emotional, social, and behavioral problems).

Results and Discussions

Respondents' Level of Obesity

Table 1 presents the data to determine the respondents' level of obesity. The data shows that more respondents are classified as overweight. This means that most of the adolescent in the identified locality where the study was conducted was observed to have within or above the 95th percentile of body mass index. Being overweight is believed to be caused by an imbalance between dietary intake and energy expenditure; the exact reason for the imbalance among adolescents is unclear. The increasing number of overweight adolescents also increases the risk of acquiring lifestyle diseases such as cardiovascular problems, hypertension, cancer, diabetes, and other lifestyle diseases. Several studies revealed that being overweight is related to physical and psychological problems. For example, the study by Lee et al. (2016) concluded that adolescent overweight increases rates of coronary heart disease among future young and middle-aged adults, resulting in substantial morbidity and mortality. The World Health Organization (WHO) currently ranks excess body weight as third on the list of health risks in high-income countries, responsible for 8.4% of deaths and 6.5% of disability-adjusted life years (Hamilton, Dee, & Perry, 2018). Another study revealed that the increased prevalence of overweight had been suggested to contribute to the worldwide increase in liver diseases. The BMI in late adolescence predicts the development of severe liver disease later in life (Hagström, Stål, Hultcrantz, Hemmingsson, & Andreasson, 2016).

Overweight adolescents may have impacted health and social and academic affairs, thus a concern for educators and stakeholders in other sectors such as health and sport. Weight control is a rational task, and yet

not easy for everyone. Therefore, motivation and sufficient information are keys to successful weight control through physical activities and diet manipulations. Therefore, the design and introduction of education programs that will address issues related to overweight and obesity are paramount for building a generation with a healthy body and healthy mind. This may include educating parents and other stakeholders in education, sports, and health through Media, such as Radio, Newspapers, Television, and internet programs.

The following is the formula for calculating the BMI using the Metric System:

$$\text{Formula: weight (kg) / [height (m)]}^2$$

$$\text{Calculation: [weight (kg) / height (cm) / height (cm)] x 10,000}$$

Table 1. Respondents' Level of Obesity (n=120).

Degree of Obesity	Frequency	Percentage
Overweight	82	68.33
Obese	38	31.67

Respondents' Level of Emotional Well-being

Table 2 presents the data in determining the respondents' level of emotional well-being. As presented in the table, both constructs are perceived to be low for stress and emotional eating. This implies that the respondents have not suffered an emotional burden, even if they are overweight and obese. The finding of this study does not conform to other current studies on the relationship between overweight and obesity and emotional well-being.

Ajibewa et al. (2020) concluded that being overweight and obese increased psychological stress and associated dieting behavior among adolescents with overweight/obesity. Shorter sleep duration in overweight/obese adolescents has been associated with health-related and psychological factors such as overweight/obesity or stress (Buzek et al.,

2019). Another study showed that children with weight problems struggle socially and emotionally. Sociometric status differences between levels of obesity were also found. Although peers neglected obese children, severely obese children were rejected (Harrist et al., 2016).

The obesity pandemic in the adolescent population has had adverse effects on the physical aspects of health and psychological well-being. Psychological well-being in adolescents would have far-reaching repercussions not only during their adolescent stage but also later in life. The obesity pandemic in the adolescent population has had adverse effects on the physical aspects of health and psychological well-being. In addition, adolescents who have encountered weight stigma can adversely affect mental well-being, making it easier to target vulnerable subjects for decreased self-esteem and depression.

Table 2. Respondents' Level of Emotional Well-being (n=120).

Construct	WM	Stdev	QI
Stress	2.75	0.40	L
Emotional Eating	2.40	0.49	L
Overall Weighted Mean	2.58	0.25	L

Scale: 1.00-1.75 – Very High (VH), 1.76-2.50 – High (H), 2.51-3.25 – Low (L), 3.26-4.00 – Very Low

Respondents' Level of Social Well-being

There is a consistently high level of social well-being among adolescents surveyed in the locale of the study. Table 3 presents the data in determining the respondents' level of social well-being. The five constructs were used to describe the social well-being of the respondents. These are social contact, neighborhood and neighborhood cohesion, material deprivation, and social isolation. In many studies, obese adolescents' social well-being may be negatively affected due to the social stigma of obesity. However, perceptions of respondents based on

responses showed that this is different. All the constructs showed that the respondents have a high level of social well-being. This implies that the respondents have confidence in associating with their classmates or schoolmates and have established good interpersonal relationships with them. In addition, being overweight/obese has not influenced them to go on social isolation.

Study findings revealed that among girls, overweight/obese status was associated with spending less time with friends after school than normal-weight status. It is also associated with being bullied. Among boys, overweight/obese status was associated with infrequent communication with friends through cellphones, SMS messages, or the internet. In the full population, overweight/obese status was associated with not perceiving best friends as confident (Kjelgaard, Holstein, Due, Brixval, & Rasmussen, 2017). In turn, social stigma impacts emotional and psychological well-being through internalizing behaviors toward obesity. For those living with obesity, anti-obesity attitudes create distress and shame, lowering their self-esteem and sense of self-worth (Rand et al., 2017). Another research showed that overweight/obese among low-active children but not high-active ones positively correlated with social-emotional well-being issues. There is a connection between obesity/overweight and peer relationships (Noonan & Fairclough, 2019).

Overweight children are more likely to experience teasing and stigmatization from peers, which can result in social marginalization and low self-esteem (Gong, Han, Zhang, & Zhang, 2019). Intuitively, being overweight and physically inactive in childhood is likely to be a stronger predictor of peer relationship problems than being overweight alone, as peer problems and victimization are associated with low activity (Pulido, 2016) and weight status. (Chen, Jia, & Woltering, 2018). Stearns et al. (2017) found that peer victimization did not mediate the relationship between overweight and physical activity among adolescent boys and girls but observed a partial mediation for screen time. Positive peer relations are central to healthy psychological, social, and emotional child development and functioning (Oberle, 2018; Noonan & Fairclough, 2019).

Table 3. Respondents' Level of Social Well-being (n=120).

Construct	WM	Stdev	QI
Neighborhood and Neighborhood Cohesion	3.04	0.52	H
Material Deprivation	2.97	0.48	H
Social Contact	2.90	0.54	H
Societal Institutions	2.78	0.49	H
Social Participation	2.71	0.51	H
Social Isolation	2.71	0.42	H
Overall Weighted Mean	2.88	0.14	H

Scale: 1.00-1.75 – Very High (VH), 1.76-2.50 – High (H), 2.51-3.25 – Low (L), 3.26-4.00 – Very Low

Respondents' Level of Behavioral Problems as Perceived by the Parents and Adolescence Themselves

Table 4 presents the data in determining the level of the respondents' behavioral problems as perceived by their parents and adolescents. Although the weighted mean of the perceptions of the two groups of respondents differs in the continuum, both are interpreted as common behavioral problems. This implies that the respondents are not affected by their weight status to manifest negative behaviors. Although several authors have identified a strong link between obesity and internalizing difficulties, lower quality of life, social issues, and increased behavioral problems (Al-Agha, Al-Ghamdi, & Halabi, 2016), in this study, both the respondents and their parents perceived that the respondents manifest a low level of behavioral problems.

Obesity is associated with the development of multiple diseases in the short and long term during the teenage period, including type II diabetes and cardiovascular disease (Cheng, Medlow, & Steinbeck, 2016; Rankin et al., 2016) and some psychosocial problems, although extreme mental health does not develop in most overweight and obese children issues (Pont, Puhl, Cook, & Slusser, 2017). The relationship between weight status and behavioral concerns differs across age and gender (Jalo, 2019). There are two types of cognitive concerns, externalizing and internalizing concerns. Externalizing issues (e.g., violent behavior and

attention issues) are characterized by under-control of emotions. In contrast, internalizing problems are marked by over-control of emotions (e.g., anxiety, depression, and withdrawal) (Ellemers, van der Toorn, Paunov, & van Leeuwen, 2019).

The relationship between weight status and behavioral concerns differs across age and sex (Jalo, 2019). There are two types of cognitive concerns, externalizing and internalizing concerns. Externalizing issues (e.g., violent behavior and attention issues) are characterized by under-control of emotions, evidence of the correlation between weight status and other externalizing behavioral problems, however, is mixed and tends to differ by age. For example, studies have identified associations between excess weight and at least one indicator of externalizing issues, such as conduct disorder (Segal et al., 2016), oppositional defiant disorder (Cimino et al., 2016), delinquent behavior (Amianto et al., 2018) or bullying (Liu, Chen, Yan, & Luo, 2016), among children over eight years of age and teenagers.

Table 4. Respondents’ Level of behavioral Problems as Perceived by the Parents and Adolescents Themselves.

Variable	Children’s Perceptions			Parents Perceptions		
	WM	Stdev	QI	WM	Stdev	QI
Behavioral Problems	2.49	0.04	L	2.31	0.43	L

Scale: 1.00-1.75 – Very High (VH), 1.76-2.50 – High (H), 2.51-3.25 – Low (L), 3.26-4.00 – Very Low

Relationship between the Respondents’ Level of Obesity and Level of Emotional Well-being

Table 5 reveals the data in determining the significant relationship between the respondents’ level of obesity and emotional well-being as to stress and emotional eating. The p-value for both constructs is higher than 0.05; hence there is no significant relationship between obesity and

emotional well-being. Although, many studies found that the emotional well-being of obese adolescence is significantly related to their emotional well-being. The respondents in this research study may have positive coping strategies and strong support from their parents, teachers, and classmates; hence they did not show disturbed emotional well-being. This is a good indication that at a young age, they are not affected by their body image.

Table 5. Significant Relationship between the Respondents' Level of Obesity and Level of Emotional Well-being.

Behavioral Problems	Test Statistics		Remarks
	<i>r-value</i>	<i>p-value</i>	
Level of Obesity and Level of Emotional Well- being as to:			
Stress	0.025	0.782	Not Significant
Emotional Eating	0.008	0.927	Not Significant

*Scale: 0.00-0.01** Highly Significant*

0.02-0.05 Significant Above*

0.05 Not Significant

Emotional well-being encompasses emotions associated with a positive and negative effect, happiness, and life satisfaction (Short, 2016). Eating habits that emerge from the widespread availability of palatable foods, as well as increased psychological availability of food through a shift in social norms that make it appropriate and attractive to engage in eating whenever and wherever possible, can negatively affect the emotional well-being of those living with obesity (Lowe et al., 2016).

Relationship between the Respondents' Level of Obesity and Level of Social Well-being

Table 6 reflects the data in determining the significant relationship between the respondents' level of obesity and social well-being. Among the six constructs, only social contact showed a significant relationship

with the level of obesity. Therefore, the r-value is 0.212, with a p-value of 0.02, which implies a relationship between the two variables.

Social well-being comprises social integration, acceptance, contribution, actualization, and coherence (Afshar, Foroughan, Vedadhir, & Tabatabaei, 2017). Owing to the social stigma of obesity, the social well-being of those living with obesity can be adversely affected. In society, widespread negative weight-related attitudes, such as those living with obesity being lazy and unintelligent, can result in discriminatory behaviors and social opportunities in the workplace and healthcare settings (Tanner, 2017). In turn, social stigma impacts emotional and psychological well-being through internalizing behaviors toward obesity. For those living with obesity, anti-obesity attitudes cause anxiety and guilt, lowering their self-esteem and sense of self-worth (Hutchinson & Calland, 2019; Rand, 2017).

Table 6. Significant Relationship between the Respondents’ Level of Obesity and Level of Social Well-being.

Social Problems	Test Statistics		Remarks
	r-value	p-value	
Level of Obesity and Level of Social Well-being as to:			
Social Contact	0.212	0.02*	Significant
Neighborhood and Neighborhood Cohesion	0.124	0.178	Not Significant Not
Material Deprivation	0.058	0.532	Significant Not Significant
Social Isolation	0.058	0.528	Not Significant Not
Societal Institutions	0.088	0.337	Significant
Social Participation	0.024	0.795	

Scale: 0.00-0.01** Highly Significant, 0.02-0.05* Significant, Above 0.05 Not Significant

In a qualitative study, obese participants felt that their family and friends perceived their appearance as less socially accepted. They assumed they were ugly, which impacted their feelings of social integration and acceptance. They feel they are not socially accepted because of their weight. This culminated in a reduction in their social and mental well-being because they felt ashamed of their body shape and height because of the lack of approval of their weight (Rand et al., 2017).

A quantitative study found that overweight teenagers are more likely to experience verbal victimization, feel less accepted by their peers, and are less likely to be overweight from mid-adolescence to early adulthood than teenagers. Also, females who are overweight are more likely than females who are not overweight to be physically assaulted at ages 15 to 22 (Ames, & Leadbeater, 2017).

Socially competent people using better strategies for solving interpersonal problems are more readily accepted by peers and valued by adults. Obese individuals, especially teenagers, have deficits in social skills, which damage relationships, self-esteem, and their valuation by social agents. A study finding showed that the components of social competence were negatively associated with obesity, and most studies focused on self-esteem, the pattern of interaction with peers, and social relationships (Sapienza, Schoen, & Fisberg, 2017).

Relationship between the Respondents' Level of Obesity and Level of Behavioral Problems

Table 7 shows the data in determining the significant relationship between the respondents' level of obesity and behavioral problems. The r-value of 0.103 with a p-value of 0.264 implies no significant relationship between the respondents' level of obesity and their social behavior.

This means that being obese does not influence manifesting negative behaviors. The respondents may have practiced a healthy coping mechanism coupled with their parent's support; thus, they become well-adjusted individuals. Although many studies reported that negative behaviors are being manifested among adolescence, however, in this study, it never influenced them to display unaccepted behavior.

Table 7. Significant Relationship between the Respondents’ Level of Obesity and Level of Behavioral Problems.

Behavioral Problems	Test Statistics		Remarks
	r-value	p-value	
Level of Obesity and Level of Social Behavior	0.103	0.264	Not Significant

*Legend: 0.00-0.01** Highly Significant
 0.02-0.05* Significant Above
 0.05 Not Significant*

Conclusions and Recommendations

The majority of the respondents who participated in the study were overweight. However, the high level of respondents’ emotional well-being, as manifested by the low level of stress and emotional eating, indicated that obesity does not affect the social well-being of the respondents. However, the respondents’ level of obesity contributes to how they react and interact with others in the community.

Given the findings from this study, it is recommended that stakeholders in education, sports, and health put a mechanism that will guide learners at schools to participate in physical activities. Such activities may include sports and other domesticated activities that, in turn, will act as an outlet for excessive body fat deposits, which may help in improving the students’ body health condition. Moreover, the researcher believes an in-depth study on this topic would benefit this research field. The information obtained from this study may serve to create greater awareness and sensitivity during interaction and communication with obese adolescents. However, larger numbers of obese adolescents need to be studied in the future. Another aspect to consider is that obese participants from various cultures should be involved. This will allow the inclusion of different cultural views on obesity, which could vastly enrich the understanding of this phenomenon.

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