



# THE INFLUENCE OF DESIRED BODY IMAGE ON THE PATTERN OF FOOD CONSUMPTION AMONG FEMALE STUDENTS IN SELECTED TERTIARY INSTITUTIONS IN OGUN STATE, NIGERIA

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## Introduction

According to Stice and Shaw (2002), body image can be comprised of many things, such as feelings, assumptions, or generalizations about one's own body, the image a person pictures in his or her mind, and how a person may feel in his or her body. As described by the National Eating Disorders Association, satisfaction with one's own body can be either positive or negative. A positive body image is when a person is comfortable and content with his or her body. They may be proud of what they look like and be realistic by seeing the different body parts as they truly are. Individuals with a negative body image may distort the way they look. They may believe that some parts are much larger or smaller than they actually are. Feeling anxious, ashamed, or embarrassed about one's body is common with a negative body image (Stice & Shaw, 2002).

Trying to measure up to society's ideal body weight can decrease body satisfaction, especially when the ideal is unattainable. It is not realistic for everyone to look tall, thin, and beautiful. Body dissatisfaction occurs when the perceived body image and the ideal body image are not congruent (Gruber, Pope, Lalonde, & Hudson, 2001; Zellner, Hamer, & Adler, 1989). If the ideal body image is not realistic, a greater amount of body dissatisfaction can occur. No matter how much a specific ideal body shape is desired, attaining that body shape may not be possible through the healthy means of sensible diet and exercise. Negative body satisfaction is not common among all populations; it tends to be more prevalent in women compared to men (Strauss, 1999). One potential cause of this difference may be the emphasis placed on outer appearance to make one look skinny. Unlike women, most men do not want to appear skinny and instead desire to be larger with an increased amount of muscle (Drewnowski & Yee, 1987). According to Keel et al. (2007), younger individuals also tend to have a greater degree of dissatisfaction. When younger, more self-worth is placed on outer appearance, and as a person ages, self-worth is determined more by successes in life (Keel et al. 2007). A number of factors influence a person's body image. According to research, the foods a person consumes can temporarily alter his or her body image.

Higher dissatisfaction is common in certain populations. A preference for a thinner contour is more widespread in females. Women are twice as likely to want to weigh less than men (Strauss, 1999). However, this is not to say that some men do not have a negative body image. Most men are typically not interested in weight loss, but are more concerned with weight gain, size, and the strength of their bodies (Drewnowski & Yee, 1987). Drewnowski and Yee further state that women have a tendency to describe themselves as

overweight, worry about being fat, and express concern about their body weight. In another study, women were found to perceive their current body shape as larger than their ideal shape more often than males and believed themselves to be heavier than what a female should weigh according to male preferences (Demarest & Allen, 2000). One last study looking at differences in body image, weight, and gender found women attempted to lose weight more often than men (Wharton, Adams, & Rampl, 2008). Body dissatisfaction is greater depending on age as well. According to Lowery *et al.* (2005), up to 90% of college students worry about their body image. This high statistic may be due to the fact that college students feel they are being assessed for physical attractiveness. A college student's diet is typically high in fat, sodium, and sugar, while low in fruits, vegetables, and dairy products (Brunt *et al.*, 2008). Female college students are more susceptible to partaking in inappropriate weight management practices such as using laxatives, exercising excessively, or cutting calories (Wharton *et al.*, 2008). Wharton *et al.* further state that the decisions and habits formed during college establish lifelong habits. For example, if someone exercises regularly and eats a diet rich in fruit and vegetables, he or she is more likely to have these same healthy habits later in life. Lowery *et al.* stated that being beautiful may be seen as an important part of having social success; thus, college students may be concerned about the way they look.

Although many people in college are concerned about body image, only a small number of male and female subjects in a study conducted by Brunt, Rhee, and Zhong (2008) were actually overweight or obese (27% and 8%, respectively). When examining those with a higher BMI, a higher degree of body dissatisfaction was found (Jonnalagadda *et al.*, 2004). Regardless of a person's weight, body dissatisfaction is common on college campuses. College is seen as a transition to adulthood and independent living (Brunt, Rhee, & Zhong, 2008; Wharton *et al.*, 2008), which is why this study is necessary at this time, so that more can be learned about the various actions of the students concerning the adequacy of their diet and their implications on their looks also.

## **Materials and methods**

### **Data collection procedure**

Prior to the commencement of the research, submission of the research proposal was made at the administrative unit of each institution, and consent was sought from the management to carry out the research among the students. Undergraduate students of selected tertiary institutions (Tai Solarin University of Education & Ogun State College of Health Technology) were used as the research population. The population consisted of female students, and a total sample of one hundred and eighty seven (187) students was selected using a multistage sampling technique.

The researchers approached students at places in the college premises such as the auditorium, lecture halls, fellowship centres, and halls of residence and sought their permission to participate in the study. To obtain informed consent from participants, the researchers first explained the purpose and significance of the study to the participants. After obtaining informed consent from a participant, he or she was given the questionnaire to fill out. On completion of the questionnaires, the researchers collected and analyzed the data on a computer with the Statistical Package for Social Sciences (SPSS) program.

### **Approval to carry out the study**

Prior to the commencement of the research, submission of the research proposal was made at the administrative unit of each institution, and consent was sought from the management to carry out the research among the students. Verbal informed consent was obtained from the students that participated in the study.

### **The Method of Data Collection**

A pretested, structured interviewer administered questionnaire was used to collect information from the respondents. The questionnaire was used to collect information on the respondent's bio-data and socio-economic characteristics, level of satisfaction with their looks, their consumption attitude, and their knowledge about ways of keeping or attaining their desired body image with food consumption. The anthropometric profile was evaluated by weight and height according to the Jelliffe (1968) criteria, and the calculation of body mass index (BMI) was assessed according to the World Health Organization (WHO) (2007).

## Statistical analysis

Frequency counts, percentages, means, standard deviations, correlation, and Chi-Square were used to analyze the data. The Pearson  $r$  test was used to find the correlation among variables and Chi-square for testing the association of research variables. SPSS was used for all statistical calculations, and a p-value of 0.05 was considered significant.

## Results

Table 1 shows the socio-demographic characteristics of the respondents. It showed that 50.3% and 49.7% of the students were enrolled at Ogun State College of Technology and Tai Solarin University of Education, respectively. The age range of the students showed that the majority was between 22 and 25 years old, and the students were selected from 100 to 400 levels. The majority is single, but 19.8% of them are married.

Table 2 shows the level of satisfaction with the looks and consumption attitudes of the students. It showed that 33.6% are certainly sure that they would like to be thinner as compared to their present look, and about 34.2% exercise a lot to avoid gaining weight, while 44.4% are afraid of getting fat. Also, 25.1% skipped meals every day to avoid weight gain, and 21.9% of them were certainly sure that due to their not eating properly, they had lost considerable weight. The result also shows that 21.4% were not happy with their stature and 29.9% of them were not able to control their eating habits because they ate more than enough. It shows that 7.0% willfully vomited after eating and 15.0% used pharmaceuticals to control their appetite. The mean body mass index classification shown in table 3 indicated that the mean underweight ranged between  $18.1 \pm 4.3$  and  $18.4 \pm 6.1$  while normal BMI ranged between  $20.6 \pm 6.2$  and  $23.4 \pm 7.1$  but the mean overweight among the students was between  $25.3 \pm 7.3$  and  $28.27.7$ .

Table 4 shows the correlation between the level of satisfaction with their looks and their consumption attitude, classified according to their BMI. The result showed that there is a correlation between BMI indicators and the level of satisfaction and consumption attitude of the students. It shows a significant relationship between BMI and students that love to be thinner, those that exercise a lot to avoid gaining weight, the ones that are not happy with their body, and those that cannot control their consumption. Table 5 shows the relationship between socio-economic characteristics and the nutritional status of the students. Age is significantly related to being underweight, normal, and overweight. The monthly stipend and lifestyle are related to the nutritional status of the students.

## Discussion

Much of the empirical evidence establishes a significant relationship between body image and diet among tertiary institution students. Further evidence has been obtained in this study. The present study has revealed a significant positive relationship between consumption pattern and body image. The finding of a positive relationship between eating behavior and body image implies that whenever people assume greater control over their diet, they begin to feel satisfied with their body image. On the other hand, individuals who are not able to control their eating behavior end up experiencing lower body image satisfaction (Christopher *et al*; 2015). This finding agrees with that of Cilliers, Senekal, and Kunneke (2006), who discovered, after their investigation of the association between the weight status of first-year female students and various weight management-related characteristics, that underweight, normal-weight, and overweight students differed with regard to their perception of their weight, weight goals, and previous weight-loss practices. Cilliers, Senekal, and Kunneke (2006) found that a higher body mass index was correlated with a higher body shape score, a lower self-concept, and higher eating pathologies.

The study shows that body dissatisfaction is associated with perceived negative health among the students. These findings correspond with studies among young adults in Sweden (18–34 years) showing that both obesity and underweight were associated with perceived negative health, even when health problems were controlled (Hagquist; 1998). This relationship between body image and perceived health may be explained by adolescents' views of health. A global definition of health suggests that several domains related to self-esteem may influence the responses, including body image.

The prevalence of being overweight or obese in the current study was similar to that in the Kelishadi study (Kelishadi *et al.*, 2013). However, Sotoodeh *et al.* reported a higher prevalence of obesity (Sotoodeh *et al.*, 2020), which may be as a result of a difference in the educational level of the respondents about food choice. It shows that most of the overweight and obese students were not satisfied with their body image because 42.6% of them were not happy with their body and a considerable number of them could not actually control their eating. In assessing attitudes towards healthy eating habits, there is a relationship between consumption attitudes and body image. This result was consistent with the study of Saheb Zamani *et al.* (2011) who observed there was a significant relationship between assumed look and consumption pattern. This study showed a negative relationship between self-esteem and unhealthy dieting behaviors, such that students with low self-esteem (attitude) had unhealthier dieting behaviors such as skipping breakfast, using medications for thinness and appetite suppressants, and so on. These and other eating disorders and unhealthy eating behaviors were observed by Bruin *et al.* (2009), Mussap (2009), Martyn-Nemeth (2009), and Mann (2004). As it is seen, body satisfaction is correlated with attitude. According to the finding, age has some form of relationship with body image among college students. This finding agrees with the assertion by Groesz, Levine, and Murnen (2002) that although body image concerns have become a normative experience for women of all ages, body dissatisfaction appears to increase and climax during the middle and late adolescent years. After viewing 10 thin-ideal stereotype images, Groesz *et al.* (2002) concluded that adolescent women experienced greater body dissatisfaction than older women. They further explained that, in conjunction with developmental processes such as physical maturation, identity development, and peer relationships, media influences are related to body dissatisfaction among adolescent women.

The results of this study showed that high self-satisfaction tends to high self-esteem and high self-appreciation, and one who respects herself searches for health-promoting lifestyle behaviors, such as better nutritional behavior, avoiding unhealthy behavior. This research also proved that there is a strong relationship between keeping a desired body image and the pattern of food consumption. This viewpoint is shared by Fakheran *et al.* (2012), who observed that behaviors associated with an unhealthy lifestyle, such as eliminating main meals, eliminating breakfast, self-imposed fasting, and consumption of anti-appetites, diuretics, and vomiting after eating, were mostly observed among students who were dissatisfied with their image.

According to Pruzinsky and Cash (1990), body image is a multifaceted construct involving subjective evaluations of the body. Such appraisals can lead to a perception of the body quite distinct from its objective size and shape (Pruzinsky & Cash, 1990). Most people maintain favorable feelings about their body image through bad habits like dieting and smoking, which are at the expense of their health. In this sense, they feel good about themselves, but they suffer from poor psychological health. Dissatisfaction with weight and shape is a widespread problem (Tiggemann & Lynch, 2001), as is engaging in maladaptive behaviors related to this dissatisfaction with one's body (Shafran, Fairburn, Robinson, & Lask, 2004). Levine and Smolak (2002) argued that individuals may be dissatisfied with their body weight, or shape, or some facial feature, yet the impact of this negative body image evaluation on actual day-to-day body image experiences and psychosocial functioning can range from minimal to extreme. Thus, body image disturbance is not merely body image dissatisfaction. Stice (2002) cites eating pathology as a mediating link between body image and psychological health. This stance confirms the argument put forward by Levine and Smolak (2002) in the explanation of the negative relationship between body image and unhealthy eating behavior. Stice (2002) believed that body dissatisfaction is one of the most consistent and robust risk and maintenance factors for eating pathology. Body dissatisfaction promotes dieting and negative effects, which in turn increases the risk of eating pathology (Stice, 2002). This can, in turn, set the stage for the development of eating disorders such as anorexia nervosa and bulimia nervosa (Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004; Stice, 2002). The study reveals the negative consequences of dieting to maintain a favorable body image. In other words, people who desire to maintain a favorable body image adopt poor eating behaviors, which lead to various forms of ill health.

## Conclusion

In investigating the relationship between body image and eating behavior among students, the researchers observed a significant positive relationship between the two. This led to the suggestion of an ecological perspective on health promotion, in which students, school management, and parents need to determine how self-confidence and humanistic values can be promoted at a system level in schools. Increased physical activity and healthy eating may be promoted through curricular and structural changes, e.g., daily physical activity and healthy meals available around the school. School health services have a unique



position as a potential partner in planning, implementing, and evaluating health-promotive strategies within the school system.

There should be a focus on regular exercise, a healthy lifestyle, healthy food choices, and quality of life. Counseling for at-risk students in order to prevent eating disorders, as well as psychological and stress-related counseling, and addressing students' unrealistic body image concerns through broad health communication campaigns. There is a need for nutrition education interventions in the family context, regardless of the socioeconomic status of individuals. The interventions should be handled by a multidisciplinary team, including health and education professionals, as well as the media, in order to promote the health of students with educational strategies and stimulate adequate food consumption, which will help to prevent chronic diseases in adult life.

The findings about body image and tendencies towards eating behavior among students should necessitate the need for further education directed at general practitioners, doctors from other specialties, and mental health professionals.

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### Potential for Conflict of Interest

No competing interests

### References

- Brunt, A., Rhee, Y., & Zhong, L. (2008). Differences in dietary patterns among college students according to body mass index. *Journal of American College Health*, 56(6), 629-634.
- Christopher M. A., Kingsley N., Angela A. G., Mary N. A (2015); Relationships among Body Image, Eating Behavior, and Psychological Health of University of Ghana Students. *International Journal of Humanities and Social Science*; Vol. 5, No. 6
- Cilliers J, Senekal M, Kunneke E, (2006); The association between the body mass index of first year female university students and their weight-related perceptions and practices, psychological health, physical activity and other physical health indicators. *Public Health Nutrition* 9(2):234-243.
- Demarest, 1, & Allen, R. (2000). Body image: Gender, ethnic, and age differences. *Journal of Social Psychology*, 140(4),465-472.
- Drewnowski, A. & Hann, C. (1999); Food preferences and reported frequencies of food consumption as predictors of current diet in young women. *The American Journal of Clinical Nutrition*, 70(1),28-36.
- Fakheran E. O, Yaghini J, Sayedyahosseini A. Relationship between oral hygiene behaviors and self-esteem among students of Isfahan University of Medical Sciences. *J Isfahan Dent Sch*. 2012;7:559-66.
- Groesz L.M, Levine M.P, Murnen S.K. (2002); The effect of experimental presentation of thin media images on body satisfaction: a meta-analytic review. *Int J Eat Disord*. 31(1):1-16. Iorgulescu G. Low self-esteem in women with eating disorders and alcohol abuse as a psycho-social factor to be included in their psychotherapeutic approach. *J Med Life*. 2010;3:458-64.
- Gruber, A. J., Pope H. G. Jr., Lalonde, J. K., & Hudson, J. I. (2001). Why do young women diet? The roles of body fat, body perception, and body ideal. *The Journal of Clinical Psychiatry*, 62(8), 609-611.
- Hagquist C.E.I. (1998); Economic stress and perceived health among adolescents in Sweden. *J Adolesc Health*; 22: 250-7.

<http://www.who.int/growthref/en/>.

Hunter, D. A., Newton, P., Wood, M. D., (2013). Limited regeneration in long acellular nerve allografts is associated with increased Schwann cell senescence. *Exp. Neurol.* 247, 165–177.

Jacobi C., Chris H, Martina de Z, Helena C. K, Stewart A. W (2004); Coming to terms with risk factors for eating disorders: application of risk terminology and suggestions for a general taxonomy. *Psychol Bull.*;130(1):19-65.

Jelliffe, D. B. (1968); "The assessment of the nutritional status of the community," (S'erie de Monografias, 53). Geneva, 271.

Jonnalagadda, S., Ziegler, P., & Nelson, J. (2004). Food preferences, dieting behaviors, and body image perceptions of elite figure skaters. *International Journal of Sport Nutrition and Exercise Metabolism*, 14(5), 594-606.

Keel, P. K., Baxter, M. G., Heatherton, R. F., & Joiner T. E., (2007). A 20-year longitudinal study of body weight, dieting, and eating disorder symptoms. *The Journal of Abnormal Psychology* 116(2), 422-432.

Kelishadi R, Poursafa P, Jamshidi F, (2013); "Role of Environmental Chemicals in Obesity: A Systematic Review on the Current Evidence". *Journal of Environmental and Public health*, vol. 2013, Article ID 896789.

Levine, M. P., & Smolak, L. (2002). Body image development in adolescence. In T. F. Cash, & T. Pruzinsky (Eds.), *Body image: A handbook of theory, research & clinical practice* (pp. 74–82). New York: The Guilford Press

Lowery, S., Kurpius, S., Befort, C., Blanks, E., Sollenberger, S., Nicpon, M., et al. (2005). Body image, self-esteem, and health-related behaviors among male and female first year college students. *Journal of College Student Development*, 46, 612-623.

Martyn-Nemeth P, Penckofer S., Gulanick M., Velsor-Friedrich, & Bryant F.B., (2009); The relationship among self esteem, stress, coping, eating behavior and depressed mood in adolescent . *Res. Nurs. Health* 32, 96-109.

Mussap J (2009); Acculturation, body image, and eating behaviours in Muslim-Australian women. *Health place.* 15(2):532-539

Pruzinsky, T., & Cash, T. F. (1990). Integrative themes in body-image development, deviance, and change. In T. G. Cash, & T. Pruzinsky (Eds.), *Body images: Development, deviance and change* (pp. 338–349). New York: The Guilford Press.

Sahebzamani M, Fesharaki M, Abdollahi-Mofrad Z.(2011); Association of life style and self-esteem among adolescent girls of daily public high schools of Tehran. *Med Sci J Islamic Azad Univ* ;20:45-51.

Shafran, R., Fairburn, C. G., Robinson, P., & Lask, B. (2004). Body checking and its avoidance in eating disorders. *International Journal of Eating Disorders*, 35, 93–101.

Sigita L, Virginija K, Julija K. & Danguole G. (2007); Perception of body image and tendencies of eating behaviour among adolescents. *Health Prim Car*, Vol., 1(2): 1-6.

Sotoodeh J.A & Rahmanian K. (2020); Relation of health related quality of life with abnormal weight: A cross sectional study prior to the weight reduction intervention. *J Family Med Prim Care.* 9(9): 4662-4666

Stice, E. (2002). Risk and maintenance factors for eating pathology: A meta-analytic review. *Psychological Bulletin*, 128, 825–848.

Stice, E., & Shaw, H. E. (2002). Role of body dissatisfaction in the onset and maintenance of eating pathology: A synthesis of research findings. *Journal of Psychosomatic Research*, 53(5), 985–993.

Strauss, R. S. (1999). Self-reported weight status and dieting in a cross-sectional sample of young adolescents: National Health and Nutrition Examination Survey III. *Archives of Pediatrics & Adolescent Medicine*, 153(7), 741-747.

Tiggemann M, Williamson S. (2000). The effect of exercise on body satisfaction and self-esteem as a function of gender and age. *Sex Roles*. 43:119-27.

Tiggemann M. (2005). Body dissatisfaction and adolescent self-esteem: Prospective findings. *Body Image*. 2:129-35.

Wharton, C., Adams, T., & Hampl, J. (2008). Weight loss practices and body weight perceptions among US college students. *Journal of American College Health*, 56(5), 579-584.

World Health Organization (2007); "Growth reference 5-19 anos," 2007,

Zellner, D., Hamer, D., & Adler, R (1989). Effects of eating abnormalities and gender on perceptions of desirable body shape. *Journal of Abnormal Psychology*, 98(1), 93-96.

**Table 1: Socio-demographic Characteristics of the respondents**

| Variable              | Frequency | Percentage |
|-----------------------|-----------|------------|
| <b>Schools</b>        |           |            |
| Osochtech             | 94        | 50.3       |
| Tasued                | 93        | 49.7       |
| Total                 | 187       | 100.0      |
| <b>Age(yrs)</b>       |           |            |
| 16-20                 | 51        | 27.3       |
| 21-25                 | 57        | 30.5       |
| 26-30                 | 56        | 29.9       |
| 31 & Above            | 23        | 12.3       |
| Total                 | 187       | 100.0      |
| <b>Level</b>          |           |            |
| 100                   | 47        | 25.1       |
| 200                   | 47        | 25.1       |
| 300                   | 46        | 24.6       |
| 400                   | 45        | 24.1       |
| Total                 | 187       | 100.0      |
| <b>Religion</b>       |           |            |
| Islam                 | 81        | 43.3       |
| Christianity          | 91        | 48.7       |
| Others                | 15        | 8.0        |
| Total                 | 187       | 100.0      |
| <b>Tribe</b>          |           |            |
| Hausa                 | 05        | 2.7        |
| Igbo                  | 31        | 16.6       |
| Yoruba                | 151       | 80.7       |
| Total                 | 187       | 100.0      |
| <b>Marital status</b> |           |            |
| Single                | 143       | 76.5       |
| Married               | 37        | 19.8       |
| Divorced              | 05        | 2.8        |

|               |     |       |
|---------------|-----|-------|
| Widow/widower | 02  | 0.1   |
| Total         | 187 | 100.0 |

**Table 2: level of satisfaction about their look and consumption attitude**

| Items   | Somewhat<br>true = N(%) | Certainly<br>True | Not true  | P      |
|---|-------------------------|-------------------|-----------|--------|
| I would like to be thinner  | 69 (36.9)               | 63(33.6)          | 55(29.4)  | <0.001 |
| I exercise a lot to avoid gaining weight  | 51(27.3)                | 64(34.2)          | 72(38.5)  | <0.001 |
| I am afraid of getting fat  | 49(26.2)                | 83(44.4)          | 55(29.4)  | <0.001 |
| I have been on a diet   | 42(22.5)                | 49(26.2)          | 96(51.3)  | 0.061  |
| I skipped meals everyday to avoid weight gain   | 49(26.2)                | 47(25.1)          | 91(48.7)  | <0.001 |
| It terrifies me if I gain even a little weight  | 72(38.5)                | 52(27.8)          | 63(33.7)  | 0.021  |
| I have lost weight considerably over a short<br>period of time due to not eating properly                   | 59(31.6)                | 41(21.9)          | 87(46.5)  | <0.001 |
| I am not happy with my body   | 42(22.5)                | 40(21.4)          | 105(56.1) | <0.001 |
| I am not always able to control my eating   | 45(24.1)                | 56(29.9)          | 86(46.0)  | <0.001 |
| I devour large amounts of food at one time  | 36(19.3)                | 41(21.9)          | 110(59.0) | <0.001 |
| I have willfully vomited after having eaten   | 18(9.6)                 | 13(7.0)           | 156(84.4) | <0.001 |
| I have used pharmaceuticals to control my<br>weight (appetite restricting drugs, laxatives or<br>diuretics) | 25(13.4)                | 28(15.0)          | 134(71.7) | <0.001 |
| N=187   |                         |                   |           |        |

**Table 3: The Mean BMI Classification of the respondents**

| Age(years) | BMI         |          |            |
|------------|-------------|----------|------------|
|            | Underweight | Normal   | Overweight |
| 16-20      | 18.1±4.3    | 20.6±6.2 | 26.1±7.4   |
| 21-25      | 18.2±5.2    | 22.3±6.3 | 25.3±7.3   |
| 26-30      | 18.4±6.1    | 21.6±6.4 | 26.3±7.5   |
| 31 & Above | 18.3±5.3    | 23.4±7.1 | 28.2±7.7   |



**Table 4: level of satisfaction about their look and consumption attitude classified according to their BMI**

| Item   | Underweigh<br>t% (N=32) |                   |             | Normal<br>% (N=108) |                   |             | Overweight<br>% (N=47) |                   |             | p      |
|--|-------------------------|-------------------|-------------|---------------------|-------------------|-------------|------------------------|-------------------|-------------|--------|
|  | Somewhat<br>True        | Certainly<br>True | Not<br>true | Somewhat<br>true    | Certainly<br>true | Not<br>true | Somewhat<br>true       | Certainly<br>True | Not<br>true |        |
| 1.I would like to be thinner   | 7(21.9)                 | 3(9.4)            | 22(68.8)    | 45(41.7)            | 37(34.3)          | 26(24.1)    | 17(36.2)               | 23(48.9)          | 7(14.9)     | <0.001 |
| 2.I exercise a lot to avoid<br>gaining weight                              | 8(25)                   | 2(6.3)            | 22(68.8)    | 31(28.7)            | 39(36.1)          | 38(35.2)    | 12(25.5)               | 23(48.9)          | 12(25.5)    | <0.001 |
| 3.I am afraid of getting fat   | 9(28.1)                 | 6(18.8)           | 17(53.1)    | 26(24.1)            | 46(42.6)          | 36(33.3)    | 14(29.8)               | 31(66.0)          | 2(4.3)      | <0.001 |
| 4.I have been on a diet  | 5(15.6)                 | 5(15.6)           | 22(68.8)    | 31(28.7)            | 22(20.4)          | 55(50.9)    | 18(38.3)               | 21(44.7)          | 8(17.0)     | 0.053  |
| 5.I skipped meals everyday to<br>avoid weight gain                         | 8(25)                   | 6(18.8)           | 18(56.3)    | 23(21.3)            | 19(17.6)          | 66(61.1)    | 18(38.3)               | 22(46.8)          | 7(14.9)     | <0.001 |
| 6.It terrifies me if I gain even a<br>little weight                        | 10(31.3)                | 2(6.3)            | 20(62.5)    | 39(36.1)            | 38(35.2)          | 31(28.7)    | 23(48.9)               | 12(25.5)          | 12(25.5)    | <0.001 |
| 7.lost weight over a short<br>period of time due to not<br>eating properly | 9(28.1)                 | 12(37.5)          | 11(34.4)    | 32(29.6)            | 21(19.4)          | 55(50.9)    | 18(38.3)               | 8(17.0)           | 21(44.7)    | 0.042  |
| 8.Not happy with my body   | 6(18.8)                 | 3(9.4)            | 23(71.9)    | 24(22.2)            | 17(15.7)          | 67(62.0)    | 12(25.5)               | 20(42.6)          | 15(31.9)    | <0.001 |
| 9.I am not always able to<br>control my eating                             | 3(9.4)                  | 6(18.8)           | 23(71.9)    | 21(19.4)            | 32(29.6)          | 55(50.9)    | 21(44.7)               | 18(38.3)          | 8(17.0)     | <0.001 |
| 10.I devour large amounts of<br>food at one time                           | 3(9.4)                  | 3(9.4)            | 26(81.3)    | 19(17.6)            | 23(21.3)          | 66(61.1)    | 14(29.8)               | 15(31.9)          | 18(38.3)    | 0.056  |
| 11.I have vomited after having<br>eaten                                    | 1(3.1)                  | 2(6.3)            | 29(90.6)    | 10(9.3)             | 7(6.5)            | 91(84.3)    | 7(14.9)                | 4(8.5)            | 36(76.6)    | <0.001 |
| 12.I have used drugs to control<br>my weight.                              | 3(9.4)                  | 0(0)              | 29(90.6)    | 12(11.1)            | 22(20.4)          | 74(68.5)    | 10(21.3)               | 6(12.8)           | 31(66.0)    | <0.001 |

Significant at  $p < 0.05$

**Table5a: Relationship between socio economic characteristics and the nutritional status of the students**

| Socio-economic characteristics | underweight    |    |         | Normal         |    |         | Overweight     |    |         |
|--------------------------------|----------------|----|---------|----------------|----|---------|----------------|----|---------|
|                                | X <sup>2</sup> | Df | p-value | X <sup>2</sup> | Df | p-value | X <sup>2</sup> | Df | p-value |
| Age                            | 47.27          | 18 | 0.001*  | 26.624         | 12 | 0.016*  | 32.011         | 12 | 0.001*  |
| Level                          | 16.82          | 12 | 0.153   | 24.432         | 9  | 0.004*  | 15.712         | 9  | 0.162   |
| Tribe                          | 15.815         | 9  | 0.072   | 28.541         | 12 | 0.005*  | 18.258         | 9  | 0.032*  |
| Monthly stipend                | 70.523         | 12 | 0.000*  | 68.765         | 18 | 0.000*  | 39.734         | 12 | 0.000*  |
| Lifestyle                      | 31.036         | 12 | 0.000*  | 59.271         | 15 | 0.000*  | 31.134         | 12 | 0.002*  |
| Physical exercise              | 37.218         | 14 | 0.001*  | 54.843         | 12 | 0.001*  | 33.012         | 12 | 0.001*  |

Significant at p&lt;0.05

**Table 5b: Pearson's Correlations between socio economic status and Body mass index of the respondents**

| Socio-economic characteristics | BMI         |         |            |         |
|--------------------------------|-------------|---------|------------|---------|
|                                | Underweight | Normal  | Overweight | Obese   |
| Age                            | 0.144       | 0.059   | 0.312*     | 0.125   |
| Level                          | -0.110      | 0.215   | 0.062      | 0.078   |
| Tribe                          | 0.071       | 0.002   | 0.020      | 0.008   |
| Monthly stipends               | 0.155*      | 0.238** | 0.103      | 0.103** |
| Lifestyle                      | 0.008       | 0.103** | 0.010      | 0.201*  |
| Physical exercise              | 0.030       | 0.110*  | 0.109      | 0.163*  |

