



## Contributions of personality and sociological factors to anorexia nervosa among students of University of Port Harcourt, Nigeria

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### Abstract

The study investigated the contributions of personality and sociological factors to anorexia nervosa behavior among students of university of Port Harcourt. The study adopted an ex post-factor design. Two research questions and two corresponding hypotheses guided the study. The population of this study consisted of males and females in first year at the University of Port Harcourt between ages 16 – 20 years. The researcher used purposive sampling technique and a sample of 296 students was used for this study (Males = 83, Females = 213). Two instruments were used for the study, namely the Sociological Assessment Scale (SAS) and the Eating Attitude Test (EAT-26). The face and content validities of the instruments were determined. The reliability of the instrument was determined using Cronbach alpha method which assesses the internal consistency of the items in the instrument. Multiple regression, mean, standard deviation, one-way analysis of variance and ANOVA associated with multiple regression were used for data analysis. Results obtained were that; neuroticism, extraversion and openness to experience significantly contribute to anorexia nervosa behavior among students socioeconomic status does not significantly influence students' anorexia nervosa behavior. Based on the findings of the study, recommendations were made which are that; more attention should be given by parents and lecturers/teachers to the adolescents during this transitional period so as to educate them on the implications of anorexia nervosa behavior in every action they take; a unit for nutritionist and social workers should be created in the university and students should be mandated to visit these officers yearly to ascertain their fitness and receive support where and when necessary.

**Keywords:** contributions, personality, sociological, factors, anorexia nervosa, students

### Introduction

The study of personality and sociological factors are very important because variations in personality and sociological factors may predispose one to different types of disorders. They may account for unusual features in a wide range of health conditions and may affect the ways people see and handle situations. Personality and sociological factors can predispose one to psychiatric disorders as in anorexic conditions by modifying the response to stressful events. For example, adverse circumstances are more likely to induce an anxiety disorder in a person who has always worried about minor problems. This usually occurs when features of personality and sociological factors have become exaggerated in response to stressful events as seen in adolescents who see their transitional period as a period of "storm and stress" and problematic biological and chemical changes. Hence, the study of personality and sociological factors as correlates of Anorexia nervosa among adolescents in the University of Port Harcourt.

Anorexia nervosa is a common eating disorder and a common phenomenon associated with the adolescents during their transitional period from childhood to adolescent. It is as a result of some physiological changes that occur during this development stage. The issue of eating disorder amongst the adolescents is classified into different types; ranging from Anorexia nervosa to bulimia nervosa. Others are binge eating type which leads to obesity and the orthorexia nervosa.

Eriega (2006) <sup>[23]</sup>. defined anorexia nervosa as a prolonged and severe refusal to eat, which leads to death of 5 to 15%

of anorexics of the psychiatric patients. Following a review of epidemiological studies, Hoek in Mcfarlane, Trottier, Polivy, Herman, Arsenault and Boivin (2012) reported that the incidence rate of AN is 8 per 100,000 while the average prevalence rate among young female is 0.3%. With respect to ethnicity, Hoek (2006) found that AN is a common disorder among young White females but extremely rare among Black females. There has been a report of an increase in the incidence of AN but it is unclear whether this is due to increased awareness and recognition. The APA (2000) <sup>[4]</sup>. has reported that anorexia nervosa affects 1% of young women in the US annually. Presently only about one third of those with AN receive mental health care (Mcfarlane *et al.*, 2012).

Cavera Lahortiga, Martinez-Gonzalez, Gual, Irala-Estevéz and Alonso (2002) <sup>[14]</sup>. carried out a study titled "Neuroticism and low self-esteem as risk factors for incidence of eating disorders on a prospective cohort study". After the data analysis, it was found that neuroticism was monotonically associated with an increased risk of anorexia nervosa and that in the logistics model, a high score of neuroticism was associated with a four-fold increase in the odds of developing anorexia nervosa.

In two studies carried out by Amirkhan, Risinger and Swickert (1995) <sup>[8]</sup>. in a paper titled "Extraversion: a Hidden personality factor in coping reported two studies. The second study was also conducted in Southern California Universities using introductory psychology students. Zero-order correlations showed a high degree of covariation between the personality traits and the help-seeking latency,

as well as among the traits themselves. Although mean personality scores approximated scale norms, the degree of covariation among extraversion, neuroticism, and agreeableness proved much higher than that found in the normative sample (Costa and McCrae, 1989)<sup>[19]</sup>.

Podar, Hannus and Alik (1999)<sup>[49]</sup> carried out a study entitled “Personality and Affectivity Characteristics Associated with Eating Disorders: A Comparison of Eating Disordered, Weight-Preoccupied, and Normal Samples”. Among the facet scales of openness to experience the weight watchers differed significantly from the control in Fantasy, Aesthetic and Ideas. The patient group scored significantly higher than controls in Feelings Actions and Ideas. Although Neuroticism made the largest contribution to EDI-2 subscale, openness to experience also predisposed individuals to eating disorders.

Rogers, Resnick, Mitchell and Blum (1997) conducted a study in USA entitled “The relationship between socioeconomic status and eating disordered behavior in a community sample of adolescent girls. The sample size was 17.571. The study of Story, French, Resnick and Blum (1995) titled “Ethnic/racial and socioeconomic differences in dieting behaviours and body image perceptions in adolescent used a sample size of 17.159.

Neumark-Sztainer, Story, Falkner, Beuhring and Resnick (1999) conducted a study entitled “Sociodemographic and personal characteristics of adolescents engaged in weight loss on weight/muscle gain behaviours: who is doing what?” Their results indicated that although there was some significant positive relationship between socio-economic status and some unhealthy dieting behaviours, there is no relationship between self-report of clinically significant eating disordered behavior and SES in the sample community.

Reagan (2005) conducted a study titled “Influence of race, gender and socioeconomic status on binge eating frequency in population-based sample”. The results showed for women, frequency of anorexia nervosa was negatively associated with age and family income, and positively associated with the adolescents, depression, and the time residing in polluted neighbourhoods. For men, the frequency is negative associated with age but was not affected by education race, obesity or current dieting.

O’Dea and Caputi (2001)<sup>[44]</sup> conducted a study titled “Association between socioeconomic status, weight, age, and gender, and the body image and weight control practices of 6 to 19 years old children and adolescents. Physical self-esteem was lowest among overweight girls of middle/upper SES, despite the latter being more likely to be overweight. Being overweight does not appear to adversely affect the physical self-esteem of children of low SES, particularly boys.

Sharma (2013) carried out a study titled “Gender differences in adolescent neuroticism”. The data collected was analyzed using descriptive statistical methods. The female adolescents were more prone to negative self-evaluations considering themselves as plain. Although the mean neuroticism in adolescent females is slightly higher than in males, the level of neuroticism did not vary with gender. Significantly positive correlations (low and moderate) were obtained for the parent-child-relationship that are indifferent. A study by Szabo and Allwood (2004)<sup>[58]</sup> titled “A cross cultural study of eating attitudes in adolescent South African females used a sample of black and white female

adolescents (generally aged 13 – 18) in an urban setting (n = 1353; 578 Blacks and 506 Whites) and an exclusively black, Zulu speaking sample in a rural setting (n = r361). Bonferroni t-tests revealed that the urban white group had a significantly greater difference than the urban black group who in turn had a significantly greater difference than the rural black group. The greatest difference was observed in the urban white group and the least in the rural black group. By implication, the potential drive to be thinner is greatest in the urban white group. By implication, the potential drive to be thinner is greatest in the urban white group and the least in the rural black group.

A follow up study by Szabo and Allwood (2006)<sup>[57]</sup> was titled “Body figure preference in South African adolescent females: a cross cultural study. Data collected was analyzed using ANOVA with post-hoc Bonferroni t-test to determine significant differences between variables and chi-square test to determine relationship between group and category. No significant difference was found for either age or weight. The socioeconomic status of the white sample was significantly higher.

Another study was carried out by Preti, Pinnac, Noccas, Pilius, Mulliri, Micheli, Casta, Petretto, Masala, (2007)<sup>[50]</sup> titled “Rural/urban differences in the distribution of eating disorder symptoms among adolescents from community samples”. Among the males, the EAT were higher in the urban than the rural samples. Conversely, both male and female students in the rural sample reported higher scores on the Bulimic Investigatory Test, Edinburgh (BITE) symptoms subscale. No other differences were found in socio-economic status in the rural sample. No other differences were found in socio-economic status and age did not influence the differences in the reporting of eating disorder symptoms by place of residence.

Nazim, Tariq, Ijaz (2010)<sup>[40]</sup> carried out a study titled “Co-relational study of body types and fundamental neurotic reactions among adolescents of urban sector of Peshawar, Pakistan. Results suggest a strong relationship between deviation from societal standards for body types and the development of depression, anxiety.

Zwickert and Rieger (2013)<sup>[64]</sup> carried out a study titled “Stigmatizing attitudes towards individual and individual with anorexia nervosa: an investigation of attribution theory”. Data collected were analyzed using ANOVA and Cronbach’s alpha. Participants reported a significantly greater desire for social distance from the target with anorexia nervosa compared to target with obesity or skin cancer, and yet (contrary to Attribution Theory) attributed less blame to the target with anorexia nervosa. There was significant increase in stigmatization towards targets described as blameworthy relative to targets described as non-blameworthy.

However, to the best of the researcher’s knowledge, no empirical study has been conducted on the contributions of personality and sociological factors to anorexia nervosa among students in University of Port Harcourt, Nigeria. Hence, this present study was conducted to fill the existing gap.

### **Purpose of the study**

The purpose of the study was to investigate the contributions of personality and sociological factors to anorexia nervosa behavior among students of university of Port Harcourt. In specific terms, the study sought to achieve

the following objectives:

1. Ascertain the extent to which neuroticism, extraversion and openness to experience jointly contribute to anorexia nervosa behavior among students in the University of Port Harcourt.
2. Examine the extent to which socio-economic status (low, middle and high) influence students' anorexia nervosa behavior in the University of Port Harcourt

**Research Questions**

The following research questions guided the study:

1. To what extent do neuroticism, extraversion and openness to experience jointly contribute to anorexia nervosa behavior among students in the University of Port Harcourt?
2. To what extent do socio-economic status (low, middle and high) influence students' anorexia nervosa behavior in the University of Port Harcourt?

**Hypotheses**

The following null hypotheses guided the conduct of the study:

1. Neuroticism, extraversion, and openness to experience personality do not significantly contribute to students' anorexia nervosa behavior.
2. Socioeconomic status does not significantly influence students' anorexia nervosa behavior.

**Research Methodology**

The study adopted an ex post-factor design. The population for this study consists of males and females in first year at the University of Port Harcourt between ages 16 – 20 years. The researcher used purposive sampling technique and a sample of 296 students was used for this study (Males = 83, Females = 213). The students were not limited to any particular Department or Faculty but must be between the ages of 16 to 20 years and in the first year programme of study in the University of Port Harcourt.

Two instruments were used for the study, namely the Personality Trait Assessment Scale (PTAS) and the Eating Attitude Test (EAT-26). The Personality Trait Assessment Scale (PTAS) is an instrument adapted from Berkeley (2009) with 52 items. However, the researcher used only 31 items (Neuroticism n = 11; Extraversion n = 10 and Openness to experience n = 10). For the second instrument tagged Eating Attitude Test (Eat-26), it is adapted from the work of Germer (2009). It has twenty six (26) items as the name implies.

Copies of the questionnaire were given to three experts in measurement and evaluation and psychology who were requested to vet the items for clarity of words to eschew ambiguity. The reliability of the instruments was determined using Cronbach Alpha method which assesses the internal consistency of the items in the instrument. For this to be done, the items in the two instruments were administered to a randomly selected 20 year one University students between ages 16 to 20 who may not be part of the main sample for the study. After the pilot testing, the instruments were scored, collated and analyzed via the Cronbach Alpha method and the coefficient obtained were 0.68, 0.67, and 0.69 for Neuroticism, Extraversion and Openness to Experience respectively, hence, the mean of the reliability was 0.68. For the second instrument, the reliability coefficient obtained was 0.61. Mean, standard deviation,

multiple regression, ANOVA associated with multiple regression, and one-way analysis of variance were used for data analysis.

**Data Presentation and Results**

**Research question 1:** To what extent do neuroticism, extraversion and openness to experience jointly contribute to anorexia nervosa behavior among students in the University of Port Harcourt?

**Hypothesis 1:** Neuroticism, extraversion, and openness to experience personality do not significantly contribute to students' anorexia nervosa behavior.

**Table 1:** Summary of multiple regression using Neuroticism, Extraversion, Openness to expression and Anorexia nervosa

Variable	N	Mean	SD	R	R <sup>2</sup>	Adjusted R <sup>2</sup>
Anorexia Nervosa	296	83.45	23.56			
Neuroticism	296	27.19	5.45	0.208	0.043	0.033
Extraversion	296	26.46	4.70			
Openness to expression	296	26.40	3.83			

Table 1 shows that the mean score of the students are 83.45, 27.19, 26.46 and 26.40 respectively for Anorexia nervosa, neuroticism, extraversion and openness to expression. Their standard deviations (SD) are 23.56, 5.45, 4.70 and 3.83 respectively. The table also shows that the multiple regression coefficient obtained was 0.208, the coefficient of multiple determination R<sup>2</sup> was 0.043. This implies that 4.3% variations in anorexia nervosa behavior can be explained by the joint influence of neuroticism, extraversion and openness to expression while the remaining 95.7% of the variation cannot be explainable by the joint influence of neuroticism, extraversion and openness to expression.

**Table 2:** Summary of ANOVA showing the joint contribution of neuroticism, extraversion and openness to expression on anorexia nervosa

Model	Sum of squares	Df	Mean square	F	Significance
Regression	7082.41	3	2360.80	4.401	0.005
Residual	156628.73	292	536.40		
Total	163711.14	295			

Results in table 2 show that the calculated F-value of 4.401 was significant at 0.05 level which is lower than the 0.05, the chosen level of probability. Hence the null hypothesis is rejected; indicating that neuroticism, extraversion and openness to experience significantly contribute to anorexia nervosa behavior among students.

**Research question 2:** To what extent do socio-economic status (low, middle and high) influence students' anorexia nervosa behavior in the University of Port Harcourt?

**Hypothesis 2:** Socioeconomic status does not significantly influence students' anorexia nervosa behavior.

**Table 3:** Mean and standard deviation on students' anorexia nervosa behavior based on their socioeconomic status

Socioeconomic status	N	Mean	SD
Low	65	80.74	27.93
Middle	178	84.78	22.69
High	53	82.30	25.45
Total	296	83.45	23.56

Table 3 shows that the mean score of the students from the low SES was 80.74 (SD = 27.93), that of those from middle SES was 84.78 (SD=22.69) while that of high SES was 82.30 (SD = 25.45). This indicated that the students' from middle SES had the highest mean score, followed by those from high SES and then those from low SES. However, to determine if the difference observed are significant or not ANOVA was employed. The results obtained are as presented in table 4 below.

**Table 4:** Analysis of variance showing the influence of students' parental SES on anorexia nervosa behavior

Source of variance	Sum of squares	Df	Mean square	F	Significance
Between group	860.40	2	430.20	0.774	0.462
Within group	162850.74	293	555.81		
Total	163711.14	295			

Table 4 revealed that the calculated F value 0.774 obtained was significant at 0.462 level which is higher than 0.05, the chosen level of probability. Hence the null hypothesis of no significant influence of students' parental was retained.

**Discussion of Results**

**Joint Contribution of Neuroticism, Extraversion and Openness to Experience personality traits on anorexia nervosa behavior**

The results indicated that the R is 0.208 and R<sup>2</sup> 0.043 (see table 1). This shows that only about 4.3% of the variation in the students' anorexia nervosa behavior was as a result of changes in the joint personality traits of neuroticism, extraversion and openness to experience. Hence, about 95.7% of the variations in the student's scores were as a result of variables other than these ones being investigated. The table 2 also shows F = 4.401, Significance = 0.05 which is significant. Therefore, neuroticism, extraversion and openness to experience jointly influence students' behavior of anorexia nervosa. This result is expected and not surprising because these personality traits are three out of the five major categories of personalities. Also, this eating disorder, anorexia nervosa under investigation is a behavioural problem and one's behavior is influenced by one's personality. Based on these statements, these personality traits are expected to have an influence on the students' anorexia nervosa behavior.

The findings of this present study is in agreement with the findings of Amir Khan, Risinger and Swickert (1995)<sup>[8]</sup>, who reported that personality traits of neuroticism, extraversion and openness to experience covered highly as a coping strategy in one's behavior. Likewise, the findings corroborates those of Podar, Hannus and Alik (1999)<sup>[49]</sup>, who worked on "Personality and Affectivity Characteristics Associated with eating disorders" and found that neuroticism, extraversion and openness to experience significantly influenced people's behavior of anorexia nervosa.

However, a previous finding discordant with the result of the present study include the work of Fawzi, Hashim, Fouad and Abdel-Fattah (2010)<sup>[24]</sup>, who investigated the prevalence of eating disorders in a sample of rural and urban secondary school girls in SHirkia, Egypt. The result showed no statistical association between all the variables including personality traits.

**Influence of socio-economic status on Anorexic Nervosa Behaviour**

The results showed that students of low socioeconomic status had a mean score of 80.74, SD =27.93 on anorexic nervosa. Students of middle socio-economic status had a mean score = 84.78, SD = 22.69. Lastly, students of high socioeconomic status had a mean score of 82.30, SD = 20.45. The F = 0.774 and significance value of = 0.462 was not significant at 0.05 level of significance. Hence, socioeconomic status does not significantly influence students of anorexia nervosa behavior in University of Port Harcourt. This result is unexpected since the socio-economic status is expected to affect the case which one acquires/purchases the type of food one wants to eat. Hence, eating disorder behavior is expected to have been influenced by availability of money. This unexpected result could have been as a result of education and training the high SES received on eating disorders and their negative effects on health, longevity as well measures to control one's eating habit.

**Conclusion of the study**

The first results showed a significant difference in the trait of neuroticism among students. This implies that the personality traits of the students should be adequately studied. Second, eating behavior of these adolescents should be taken paramount, so as to check-mate their different eating styles and correct whatever abnormalities in the eating behavior.

Furthermore, socioeconomic status should also be considered so as to treat these adolescents as unique individual personalities and not as aggregate or collection of adolescents.

**Recommendations**

Based on the findings of the study, the following recommendations are made.

1. More attentions should be given by parents and lecturers/teachers to the adolescents during this transitional period so as to educate them on the implications of anorexia nervosa behavior in every action they take.
2. Psychologists and nurses should get involved in caring adequately for the psychological aspects of these adolescents.
3. A unit for nutritionist and social workers should be created in the university and students should be mandated to visit these officers yearly to ascertain their fitness and receive support where and when necessary. This will reduce ingestion of drugs for every health issue including the ones psychological care can handle.

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