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# Gender Differences, Personality Traits and Mental Health among Secondary School Adolescents in Enugu, South East Nigeria

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#### Authors' contributions

This study was jointly conducted by all the authors. Authors FEO, ENA, GCO and CSE contributed to the conception, literature review, data collection and proof reading of the manuscript. Author ENA did the analysis, author FEO wrote the discussion while all the authors read and approved the final copy of the manuscript.

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#### **ABSTRACT**

**Background:** Our thinking, feelings and behaviour as well as our unique individuality can contribute a lot to our mental health. Furthermore based on personality traits it has been argued that some people may be more prone to mental health problems than others. Adolescents are generally perceived as a healthy age group but reports revealed that in spite of this as many as 20% of them in any given year experience mental health problems.

**Objective:** This study assessed gender differences, personality traits and mental health among secondary school adolescents in Enugu, south east Nigeria.

Study Design: This is a descriptive cross-sectional study design.

Place and Duration of Study: Enugu, south east Nigeria, between October-December 2014.

**Methods:** The general Health Questionnaire (GHQ-12), the Big Five Personality inventory and a socio-demographic questionnaire were used to assess 432 secondary school adolescents (216 males and 216 females) in Enugu for prevalence of personality traits and mental health.

**Results:** The prevalence of personality traits varied among the subjects with neuroticism being the most prevalent (22.9%), while extraversion was the least prevalent (16.9%). The study further revealed that mental health problem was present in 23.6% of the subjects.

**Conclusion:** The study had revealed the prevalence of various personality traits and mental health problems among secondary school adolescents who took part in the study. It is recommended that adolescent counselling and regular personality assessment in schools be introduced.

Keywords: Personality traits; mental health; adolescent counseling; stress inoculation.

## 1. INTRODUCTION

Broadly speaking personality is conceptualized as the relatively stable pattern of behaviour that is determined over the course of a person's life. For instance it was posited [1] that personality refers to an individual's style of behaving, thinking and feeling. Furthermore an individual's personality has been found to predict how that person reacts to other people, how he articulates and solves problems and how he is affected by stressful events in his environment [2]. With regards to personality traits, the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) of the American Psychiatric Association [3] posited that 'personality traits are enduring patterns of perceiving, relating to and thinking about the environment and about oneself that are exhibited in a wide range of personal and social context' whereas other researchers maintained that a personality trait is a consistent and long lasting tendency in an individual's behaviour and actions.

Personality traits are broadly classified into five and were collectively called the big five personality traits by some trait theorists in psychology using factor analysis [5,6]. They argued that these five traits represent the core of personality. These five traits are: agreeableness, conscientiousness, neuroticism, extraversion and openness to experience. Some researchers had observed that these five traits cover the broad domain of personality to a large extent and provide a good perspective for the description of personality [7,8]. For instance McCrae and Costa [9] indicated that neuroticism which they said relates to a tendency to experience dysphoric affect, sadness, hopelessness and guilt was linked to low self esteem, irrational beliefs and pessimistic attitude. Extraversion, however, which they said was related to a preference to

companionship and social stimulation, was linked to social skills e.g. having many friends. Also, openness to experience which has to do with the need for variety, novelty and change was linked to having interest in travels, different hobbies and diverse vocational interests [9].

Agreeableness which has to do with willingness to defer to others during interpersonal conflicts was linked to having forgiving attitudes, beliefs in cooperation and having inoffensive language. With regards to conscientiousness the researchers posited that this has to do with strong sense of purpose and high aspiration level and they linked it to having leadership skills, long term plans, organized support network and technical expertise [10].

It has been argued that our thinking, feelings and behaviour as well as our unique individuality contribute a lot to our mental health and that based on personality traits some people may be more prone to mental health problems than others [4,10-12]. The World Health Organisation [13] defined mental health as the state of wellbeing whereby an individual realizes his or her own abilities, can cope with the normal stresses of life, work productively and fruitfully and is able to make meaningful contribution to his or her community.

Unfortunately, mental health has not received much attention as was necessary apparently due to lack of adequate knowledge and the misunderstanding of issues bothering on mental health as well as due to the fears that findings may reveal a mentally ill person [14].

Indeed, variables like age, gender, ethnicity, marital status unemployment, physical illness and disability had all been reported to be associated with mental health, life events and

personality traits [15-16]. Also a number of studies had revealed that students are at the risk of developing mental health problems across the globe. For instance Uner et al. [17] reported in their study that about 56.8% of the students they studied were found to be at the risk of mental The health problems. UNICEF adolescence as the period of human development lasting between the ages of ten to nineteen years [18]. It is also seen as a stage in individual growth and development which has been notorious throughout the centuries as one of great emotional upset with wide fluctuations in behaviour.

Adolescents are generally perceived as a healthy age group and yet 20% of them in any given year experience mental health problems, most commonly depression and anxiety [14].

Since no known study had evaluated the relationship between gender differences, personality traits and mental health among secondary school adolescents in Enugu, south east Nigeria the present study is an attempt to look at this concept and provide a baseline data for future studies in Nigeria on the relationship between gender differences, personality traits and mental health among secondary school adolescents.

#### 2. MATERIALS AND METHODS

## 2.1 Subjects

Subjects for the study were male and female adolescents attending secondary schools in Enugu metropolis in Enugu state, south east Nigeria. The choice of schools reflects the type of secondary schools within the metropolis. These are public, mission and private secondary schools. There are two local government councils within the metropolis: Enugu south and Enugu north. From each local government two each of public, mission and private secondary schools were selected using simple random sampling procedure, making a total of 6 secondary schools per local government and 12 secondary schools from the two governments. Then from each school students made up of 18 males and 18 females who were within the adolescent age range of 10-19 years were again selected using the same sampling procedure. Using the formula for minimum sample size calculation for a prevalence study [19] a total of 432 students (216 males and 216 females) were sampled. This

number therefore forms the population of the study. Inclusion criteria were students who fall within the adolescent age range of 10-19 years, those who reported not being sick as at the time of data collection and those who consented to participate.

Exclusion criteria were students who were below the age of ten years, those who were above the age of 19 years, those who being sick and those who did not consent to participate. Permission to carry out the study was obtained from the state schools management board and the school authorities concerned while ethical permit was obtained from University of Nigeria Teaching Hospital Ethics Committee. All the subjects gave their consent to participate in the study.

#### 2.2 Data Collection and Instruments

Data for the study was collected by the authors with the help of two psychology interns. The subjects were given a self administered instrument that was made up of three parts. Part contained basic socio-demographic information such as age, gender, type of family, occupation of father and mother, current class in school and religion. Part two was the General health questionnaire (GHQ-12) [20] which is a screening instrument for psychiatric morbidity. Although it does not yield a diagnosis, positive scores are indicative of negative states of mental health. Each item is rated 0 or 1 on the basis of the frequency with which the subject had experienced the symptom in the recent past vielding a maximum score of 12. In the GHQ-12 subjects are asked to indicate for instance, how recently they have been able to concentrate on whatever they have been doing. The response options include; better than usual, same as usual, less than usual, and much less than usual. A score of 1 and above is indicative of negative state of mental health. The GHQ-12 has been used for studies in Nigeria [21,22].

Part three was the big five personality inventory [23]. This is a 44-item inventory that assesses personality from a five-dimensional perspective. The five dimensions are extraversion, agreeableness, conscientiousness, neuroticism and openness. The scale is rated based on a 5-point likert scale ranging from 1 = 'strongly disagree' to 5 = 'strongly agree'. The higher the score in each subscale the more the respondent seems to consider the personality characteristics of him or herself. The average current reliability study for the Big five inventory was .75, while the

current reliability of each of the subscales were Extraversion = .69; Agreeableness = .70; Conscientiousness = .72; Neuroticism = .75 and Openness = .74 [15]. This study was conducted at Enugu, South east Nigeria between October-December 2014.

## 2.3 Data Analysis

Data for the study was analysed using the Statistical package for social science, SPSS version 16.0. Means, standard deviations, percentages and the student t-test were performed to find relationships between variables. The level of significance chosen for this study was p≤0.05 at 95% confidence interval.

## 3. RESULTS

Equal numbers of males and females students (50%) were studied. The subjects aged between ten to nineteen years and the mean age was 15.05 years (SD = 2.192). Most (55.3%) were in senior secondary school; Christians (97.7%) and from monogamous homes (92.8%). Most of the parents were employed (father - 99.3%; mother - 90.7%).

Neuroticism was the most prevalent personality trait (22.9%) while the least is extraversion (16.9%). Mental health problem was present in 23.6%.

Gender, class in school, religion, family structure, father's and mother's employment status did not significantly affect personality trait (P=0.77;0.83;0.35;0.85;0.41 and 0.97 respectively). Age however, significantly affected the personality trait (P<0.01).

Mental health status was not significantly affected by gender (P = 0.65); age (P = 0.08); class in school (P = 0.90); religion (P = 0.43); father's employment (P = 0.17) or mother's employment status (P = 0.08) Table 1.

Mental health is however significantly affected by family structure (P = 0.01) and personality trait (P = 0.01) Table 2.

## 4. DISCUSSION

This study assessed gender differences, personality traits and mental health among

secondary school adolescents in Enugu, south east Nigeria.

The study revealed that the prevalence of personality traits varied among the subjects with neuroticism being the most prevalent (22.9%), while extraversion was the least prevalent (16.9%). The study further revealed that mental health problem was present in 23.6% of the subjects studied and there was a significant relationship between mental health personality traits. This finding was in line with previous reports by other researchers. For instance Haslam et al. [12] reported that personality traits were significantly associated with subjective well-being. They further argued that all the personality traits were positively correlated with subjective well-being except for neuroticism which showed а negative relationship to subjective well-being. Similarly in another study among medical students in a Malaysian university reported that 41.9% of the subjects experienced emotional disorders [24].

The high prevalence of mental health problem noticed in this study may be attributed to the high prevalence of neuroticism which has been reported to relate to a tendency to experience dysphoric affect, sadness, hopelessness and guilt and was linked to low self esteem, irrational beliefs and pessimistic attitude [10]. Furthermore Godwin and Friedman [13] had argued that higher levels of neuroticism were significantly associated with mental health problems among the youths and young adults they studied. The pattern of results noticed in this study further corroborates Godwin and Friedman's findings.

Gender, class in school, family structure as well as fathers' or mothers' occupation did not significantly affect personality traits and mental health. This finding was consistent with that of Nordin et al. [15] who found no significant difference in personality traits and mental health male female Malaysian among and undergraduates. They equally reported no significant difference in mental health among second. third and fourth first. undergraduates. However this finding was contrary to that of Yen et al. [16] who reported factors related demographic that to characteristics were associated with mental health. They argued that females were more prone to have poor mental health than males. The subjects for their study were junior high school students in Southern Taiwan.

Table 1. Socio-demographic variables and personality traits

|                     | Openness<br>N = 95 | Conscientiousness<br>N = 84 | Extraversion<br>N = 73                | Agreeableness<br>N = 81 | Neuroticism<br>N = 99 | Total<br>N = 432                      |
|---------------------|--------------------|-----------------------------|---------------------------------------|-------------------------|-----------------------|---------------------------------------|
| Gender              |                    |                             |                                       |                         |                       |                                       |
| Male                | 44(20.4)           | 46(21.3)                    | 39(18.1)                              | 39(18.1)                | 48(22.1)              | 216(100.0)                            |
| Female              | 51(23.6)           | 38(17.6)                    | 34(15.7)                              | 42(19.5)                | 51(23.6)              | 216(100.0)                            |
|                     | ,                  | ,                           | $\chi^2 = 1.82$ ; P = 0.77            | ,                       | , ,                   | · · · · · · · · · · · · · · · · · · · |
| Age (yrs)           |                    |                             |                                       |                         |                       |                                       |
| 10                  | 1(25.0)            | 0(0.0)                      | 1(25.0)                               | 0(0.0)                  | 2(50.0)               | 4(100.0)                              |
| 11                  | 3(15.0)            | 7(35.0)                     | 4(20.0)                               | 4(20.0)                 | 2(10.0)               | 2Ò(100.Ó)                             |
| 12                  | 7(16.3)            | 7916.3)                     | 4(9.3)                                | 9(20.9)                 | 16(37.2)              | 43(100.0)                             |
| 13                  | 9(20.5)            | 10(22.7)                    | 6(13.6)                               | 10(22.7)                | 9(20.5)               | 44(100.0)                             |
| 14                  | 15(24.6)           | 11(18.0)                    | 13(21.3)                              | 10(16.4)                | 12(19.7)              | 61(100.0)                             |
| 15                  | 11(18.3)           | 16(26.7)                    | 9(15.0)                               | 13(21.7)                | 11(18.3)              | 60(100.0)                             |
| 16                  | 23(25.6)           | 16(17.8)                    | 19(21.1)                              | 15(16.7)                | 17(18.8)              | 90(100.0)                             |
| 17                  | 12(23.5)           | 8(15.7) <sup>^</sup>        | 9(17.6)                               | 6(11.8)                 | 16(̀31.4)́            | 51(100.0)                             |
| 18                  | 8(26.7)            | 3(10.0)                     | 3(10.0)                               | 9(30.0)                 | 7(23.3)               | 30(100.0)                             |
| 19                  | 6(20.7)            | 6(20.7)                     | 5(17.2)                               | 5(17.2)                 | 7(24.2)               | 29(100.0)                             |
|                     |                    | Likelihood                  | $1 \text{ ratio } \chi^2 = 123.79; P$ | = < 0.01*               |                       |                                       |
| Class               |                    |                             |                                       |                         |                       |                                       |
| JSS                 | 45(23.3)           | 40(20.7)                    | 31(16.1)                              | 37(19.2)                | 40(20.7)              | 193(100.0)                            |
| SSS                 | 50(20.9)           | 44(18.4)                    | 42(17.6)                              | 44(18.4)                | 59(24.7)              | 239(100.0)                            |
|                     |                    | ·                           | $\chi^2$ = 1.48; P = 0.83             |                         | •                     |                                       |
| Religion            |                    |                             |                                       |                         |                       |                                       |
| Christianity        | 93                 | 83                          | 71                                    | 80                      | 95                    | 422(100.0)                            |
| Moslem              | 0(0.0)             | 1(33.3)                     | 0(0.0)                                | 0(0.0)                  | 2(66.7)               | 3(100.0)                              |
| African traditional | 2(28.6)            | 0(0.0)                      | 2(28.6)                               | 1(14.2)                 | 2(28.6)               | 7(100.0)                              |
| religion            | ,                  | ,                           | ,                                     | ,                       | ,                     | ,                                     |
|                     |                    | Likeliho                    | ood ratio $\chi^2$ = 8.89; P          | = 0.35                  |                       |                                       |
| Family structure    |                    |                             |                                       |                         |                       |                                       |
| Monogamy            |                    |                             |                                       |                         |                       |                                       |
| Polygamy            | 87(21.7)           | 79(19.7)                    | 69(17.2)                              | 76(19.0)                | 90(22.4)              | 401(100.0)                            |

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|                                  | Openness<br>N = 95 | Conscientiousness<br>N = 84 | Extraversion<br>N = 73       | Agreeableness<br>N = 81 | Neuroticism<br>N = 99 | Total<br>N = 432 |
|----------------------------------|--------------------|-----------------------------|------------------------------|-------------------------|-----------------------|------------------|
|                                  | 8(25.8)            | 5(16.1)                     | 4(12.9)                      | 5(16.1)                 | 9(29.1)               | 31(100.0)        |
|                                  |                    |                             | $\chi^2$ = 1.39; P = 0.85    |                         |                       |                  |
| Father's employment              |                    |                             |                              |                         |                       |                  |
| Self employed                    |                    |                             |                              |                         |                       |                  |
| Public servant                   | 38(24.4)           | 26(16.7)                    | 25(16.0)                     | 31(19.9)                | 36(23.0)              | 156(100.0)       |
| Unemployed                       | , ,                | ,                           | • •                          | , ,                     | ` ,                   | , ,              |
| . ,                              | 56(20.5)           | 58(21.2)                    | 46(16.8)                     | 50(18.3)                | 63(23.2)              | 273(100.0)       |
|                                  | 1(33.3)            | 0(0.0)                      | 2(66.7)                      | 0(0.0)                  | 0(0.0)                | 3(100.0)         |
|                                  |                    | Likeliho                    | ood ratio $\chi^2$ = 8.28; P | = 0.41                  |                       |                  |
| Mother's employment<br>Housewife |                    |                             |                              |                         |                       |                  |
| Self employed                    | 9(22.5)            | 5(12.5)                     | 7(17.5)                      | 7(17.5)                 | 12(30.0)              | 40(100.0)        |
| Public servant                   | 34(21.0)           | 33(20.4)                    | 28(17.3)                     | 30(18.5)                | 37(22.8)              | 162(100.0)       |
|                                  | 52(22.6)           | 46(20.0)                    | 38(16.5)                     | 44(19.1)                | 50(21.8)              | 230(100.0)       |
|                                  |                    |                             | $\chi^2 = 2.33$ ; P = 0.97   | · ·                     |                       |                  |

\*Significant

Table 2. Socio-demographic variables/personality traits and mental health

| Socio-demographic                       | Mental health                         |                    |               |  |  |
|---|---------------------------------------|--------------------|---------------|--|--|
| variables                               | Present N = 102 (%)                   | Absent N = 330 (%) | Total N = 432 |  |  |
| Gender                                  |                                       |                    |               |  |  |
| Male                                    | 53(24.5)                              | 163(75.5)          | 216(100.0)    |  |  |
| Female                                  | 49(22.7)                              | 167(77.3)          | 216(100.0)    |  |  |
|   | $\chi^2 = 0.21$ ; P                   | = 0.65             |               |  |  |
| Age (yrs)                               |                                       |                    |               |  |  |
| 10                                      | 2(50.0)                               | 2(50.0)            | 4(100.0)      |  |  |
| 11                                      | 4(20.0)                               | 16(80.0)           | 20(100.0)     |  |  |
| 12                                      | 17(39.5)                              | 26(60.5)           | 43(100.0)     |  |  |
| 13                                      | 9(20.5)                               | 35(79.5)           | 44(100.0)     |  |  |
| 14                                      | 9(17.3)                               | 52(82.7)           | 61(100.0)     |  |  |
| 15                                      | 9(17.6)                               | 51(82.4)           | 60(100.0)     |  |  |
| 16                                      | 24(26.7)                              | 66(73.7)           | 90(100.0)     |  |  |
| 17                                      | 11(21.6)                              | 40(78.4)           | 51(100.0)     |  |  |
| 18                                      | 7(23.3)                               | 23(76.7)           | 30(100.0)     |  |  |
| 19                                      | 10(34.5)                              | 19(65.5)           | 29(100.0)     |  |  |
|   | $\chi^2 = 15.58; P$                   |                    | , ,           |  |  |
| Class                                   | , , , , , , , , , , , , , , , , , , , |                    |               |  |  |
| JSS                                     | 45(23.3)                              | 148(76.7)          | 193(100.0)    |  |  |
| SSS                                     | 57(23.8)                              | 182(76.2)          | 239(100.0)    |  |  |
| $\chi^2 = 0.02$ ; P = 0.90              | - ( )                                 | - ( - )            | (,            |  |  |
| Religion                                |                                       |                    |               |  |  |
| Christianity                            | 100(23.7)                             | 322(76.3)          | 422(100.0)    |  |  |
| Moslem                                  | 0(0.0)                                | 3(100.0)           | 3(100.0)      |  |  |
| African traditional religion            | 2(28.6)                               | 5(71.4)            | 7(100.0)      |  |  |
|   | $\chi^2 = 1.71; P$                    |                    | ( )           |  |  |
| Family structure                        | , , , , , , , , , , , , , , , , , , , |                    |               |  |  |
| Monogamy                                | 89(22.2)                              | 312(77.8)          | 401(100.0)    |  |  |
| Polygamy                                | 13(41.9)                              | 18(58.1)           | 31(100.0)     |  |  |
| ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | $\chi^2 = 6.22; P =$                  |                    | , ,           |  |  |
| Father's employment                     |                                       |                    |               |  |  |
| Self employed                           | 43(27.6)                              | 113(72.4)          | 156(100.0)    |  |  |
| Public servant                          | 59(21.6)                              | 214(78.4)          | 273(100.0)    |  |  |
| Unemployed                              | 0(0.0)                                | 3(100.0)           | 3(100.0)      |  |  |
| • •                                     | Likelihood ratio χ <sup>2</sup> =     |                    | , ,           |  |  |
| Mother's employment                     |                                       | ·                  |               |  |  |
| Housewife                               | 15(37.5)                              | 25(62.5)           | 40(100.0)     |  |  |
| Self employed                           | 38(23.5)                              | 124(76.5)          | 162(100.0)    |  |  |
| Public servant                          | 49(21.3)                              | 181(78.7)          | 230(100.0)    |  |  |
|   | $\chi^2 = 4.96$ ; P                   | = 0.08             |               |  |  |
| Personality trait                       | Λ                                     |                    |               |  |  |
| Openness                                | 16(16.8)                              | 79(83.2)           | 95(100.0)     |  |  |
| Conscientiousness                       | 8(9.5)                                | 76(90.5)           | 84(100.0)     |  |  |
| Extraversion                            | 6(8.2)                                | 67(91.8)           | 73(100.0)     |  |  |
| Agreeableness                           | 7(8.6)                                | 74(91.4)           | 81(100.0)     |  |  |
| Neuroticism                             | 65(65.7)                              | 34(34.3)           | 99(100.0)     |  |  |
|   | $\chi^2 = 128.34; P$                  | ,                  | 55(.55.5)     |  |  |
|   | *Significa                            |                    |               |  |  |

# 5. CONCLUSION

This study had observed that secondary school adolescents are prone to mental health problems

and they exhibited various degrees of personality traits. The pattern of findings in this study had laid credence to earlier reports which opined that even though adolescents were generally regarded as a healthy age group but still a sizable number of them in any given year still experience some mental health problems like depression and anxiety among other mental health challenges.

Since secondary school adolescents have been found to be prone to mental health problems associated with personality traits especially neuroticism, there is need to introduce adolescent counseling and regular personality assessment in schools to help identify adolescents with high degree of neuroticism with a view to providing them with stress inoculation at regular intervals as this will help to prevent them from braking down with full blown mental illness.

The non inclusion of private companies as one of the occupational categories of the parents of the subjects is seen as a limitation of the study. Furthermore the collection of data for this study from only one state may limit the generalization of the result beyond the study location; in future efforts should be made to carry out similar study across many locations in south eastern Nigeria.

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The authors received no type of funding whether internal or external for this study.

#### CONSENT

All the subjects consented to participate in the study

## ETHICAL APPROVAL

Ethical approval for this study was obtained from the university of Nigeria research ethics committee.

## **COMPETING INTEREST**

The authors have no competing interest in this study.

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