

# The Effects of Sex, Physical Defect on Body, Acne on Face and Education on Depression in Nigerian University Students

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## ABSTRACT

**Background:** Depression among university students is fairly prevalent and a common problem in the world. The aim of this study was to investigate the effects of sex, physical defect on body, acne on face and education on depression in Nigerian university students.

**Methods:** A total of 298 Nigerian university students were involved in the study. Participants were 105 men and 193 women who were 17 years-25 years of age. The Self Reporting Questionnaire (SRQ) 20 adapted from WHO was used to screen for depression.

**Results:** Depression score was higher in female than in male subjects ( $t=2.75, p=0.01$ ). Subjects with physical defect and acne had higher depression scores than subjects without physical defect and acne ( $t=2.76, p=0.01$  and  $t=2.12, p=0.04$ , respectively). There was a positive relationship between depression scores and years of education ( $F=4.53, p=0.00$ ).

**Conclusions:** Sex, university education and health related problems such as physical defect and acne are associated with depression scores in university students.

**Key words:** Depression, Gender, Education, Defect on body, Acne on face

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## INTRODUCTION

Depression is a mental disorder characterized by persistent loss of interest, pleasure feeling of sadness and, which are accompanied by somatic and cognitive changes that substantially affect the day-to-day living of the sufferer [1-3]. Depression can result from stress due to negative life experiences, including traumatic events, lack of social support, financial problems, interpersonal problems, and conflicts, as well as diseases of nervous and associated systems including neurodegenerative disorders and cancer [1-4].

Accumulating evidences indicate that depression is one of the leading causes of disability, affecting people in all countries across the world with a global prevalence of 3.2% [5-8]. Depression usually starts at a young age and often is recurrent throughout life. For these reasons, depression is considered the leading cause of disability across the world in terms of total years lost due to

disability [5]. Emerging reports indicate that University students are among the population with higher prevalence of depression [9-11]. According to available data, University students have higher prevalence of mental disorder than the general population [11]. A multi-center study of mental disorders conducted among youths in Europe showed that 5.8% had anxiety disorders, 10.5% had depressive disorder [12], and 32.3% reported suicidal thoughts [13]. In another study, conducted in Adama University in Ethiopia, Dessie et al. reported 21.6% prevalence of depression among 413 students [9]. Melese et al. reported 30% prevalence of depression among 240 students of Hawassa University in Southern Ethiopia [14]. Though data are scanty, a few studies conducted in Nigeria have showed that the prevalence of depression is higher among University students [15,16] compared to the general population-3.1% [17]. Out of 1,206 Federal University students in Western Nigeria, 8.3% reportedly had depressive disorder [15]. In another study conducted among 762 seniors of University of Nigeria, Enugu Campus, about 62% were observed to have depression [10]. A higher prevalence of depression (84%) was reported among students of Obafemi Awolowo University,

Ile Ife Nigeria [18]. From the above studies outlined, it appears that education level is inversely proportional to mental disorders. Indeed a recent study revealed a weak inverse relationship between depression and education [19]. Bjelland et al. reported that higher educational level confer a protective effect against depression [20]. Similar findings were reported in individuals who had higher education, but were shown to experience lower levels of depression [21,22]. However, diminishing mental health status secondary to educational level has been reported [23]. Consequently, overeducated people are expected to experience more episodes of depression [23]. Some authors did not find any association between education and depression among African Americans [24,25]. It will be important for future studies to address these inconsistencies using robust replications with larger sample size.

Literature evidences suggest that depression is associated with fatigue, poor appetite, concentration/attention disorder, psychomotor disturbances, sleep disorders, vague aches and pain, feelings of guilt or low self-worth, and suicidal thoughts [2,3,26,27]. Adewuya et al. reported poor or lack of accommodation, very large family size, heavy cigarette smoking and high level of alcohol consumption as factors that were associated with depression [15]. Adewuya et al. also reported association between depression and female gender [15]. However, Melese et al. did not observe any significant difference [14]. Crowded living environment and feeling of insecurity had been associated with depression [14]. A recent investigation by Hersi et al. showed that such factors as female gender, financial problems, poor prospect of finding a job, conflicts with family and friends [11]. The association between somatic (or physical) disorders and depression has been reported among University students in Nigeria.

Despite the high prevalence of depression and its negative consequences among university students in Nigeria, little has been done to investigate the factors associated with depression. It is also necessary to step-up intervention programs aimed at reducing the prevalence or associated consequences of this mental disorder. Bjelland et al. showed that the strongest influence on mental health was exerted by somatic disorders, followed by socio-demographic factors [20]. The association between depression and somatic defects has been observed a couple of studies conducted in different part of the world [28-30]. Whitney et al. recently showed that pain was a major risk factor associated with depression [31]. Pain and vague aches are often the presenting symptoms of depression [32]. Research data have shown that a high percentage of individuals suffering from depression, who seek treatment in health care facilities, often report only physical symptoms, suggesting that somatic disorders are important factors associated with mental disorders [32]. Arslan et al. noted that acne on face, any physical defect on body, drug abuse (e.g. smoking, alcohol consumption), and future-related occupational anxieties were all important risk factors for depression [33].

Interestingly, acne is one of the most prevalent skin conditions, affecting more than 85% of adolescents. Though the condition usually start at puberty and resolves as the individual attains 20 years of age, some adolescents may continue to experience acne into their 50s [34].

Not with standing accumulating data on the association between somatic or physical disorders and depression, no study has investigated this association amongst university students in Nigeria [11]. The aim of this study was to investigate the effects of sex, physical defect on body, acne on face and education on depression in Nigerian university students.

## MATERIALS AND METHODS

### Participants

Students (three hundred and sixty students) who had classes at the time of the study were randomly approached and requested to participate in the study. Of these, two hundred and ninety-eight university students agreed to participate in this study (193 women, average age=19.78 years, standard deviation, SD=1.52; 105 men, average age=20.12, SD=2.01). Therefore, the response rate is 82.78%. They were students of the different faculties (arts and humanities, science and engineering, law, college of health sciences) in Nile University of Nigeria, private tertiary institution in Abuja, Nigeria. Age of the participants was not different statistically by sex.

### Inclusion criteria

1. Willingness to participate.
2. Only students were allowed to participate.
3. Only undergraduate students studying were included in the study.

### Exclusion criteria

1. The study excluded participants that were not willing to be involved.
2. Those who had respiratory, metabolic, cardiac, psychiatric or central and autonomic nervous system disease that might change the depression scores were not involved.

### Procedure

The experimental protocol was in accordance with international ethical standards. The study was carried out in accordance with the Helsinki Declaration (1975, revised in 1996-2013) and approved by the local ethics committee. The study was descriptive cross-sectional. The participants were selected using a stratified random sampling. The aims and objectives of the study were explicitly explained to the participants before commencement of the study. All participants voluntarily gave a written informed consent to participate in the study. The study was anonymous. A paper-and-pencil based method of filling questionnaires was utilized. Participants were administered the Self Reporting

Questionnaire (SRQ-20) to assess depression, and other questions related to the aims and objectives of the study such as presence and location of acne and physical defects on the body. All questionnaires were distributed evenly among first year students through final (4<sup>th</sup>) year in the university campus. The study was conducted between March 2018 and January 2019.

**Assessment of depression**

The English version of a structured self-administered World Health Organization’s questionnaire (Self Reporting Questionnaire, SRQ-20) was used to collect the data on depression [15,35]. The English version was used as all participants were fluent in spoken and written English. The questionnaire was imputed into open data kit and links to the site was distributed to students’ social media groups to fill in the questionnaire.

The SRQ-20 is developed and validated for international use. Compared to other scales for analysis of depression, the SRQ-20 has a better validity and is widely used to assess depression among University students [11,27]. There is no established cut-off for the Nigerian population. Different investigations on depression or mental illnesses conducted in low- and middle income countries including Nigeria, using the SRQ-20, have used varying cut-offs ranging from 5 to 11, and found sensitivity of 73%-100% and specificity of 62%-94% [6,36]. SRQ results were compared to those obtained with the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) [27].

The SRQ-20 scale includes 20 dichotomous (yes/no) questions asking whether participants experienced symptoms of anxiety, depression, or somatic symptoms during the last 30 days prior to the study [11,27].

**Statistical analyses**

Measured values are given as a mean +/- standard deviation (SD). Statistical analysis was performed using SPSS for Windows version 18. The Student’s t and one way ANOVA tests were used to compare the depression scores in the participants. A p-value less than 0.05 was considered statistically significant.

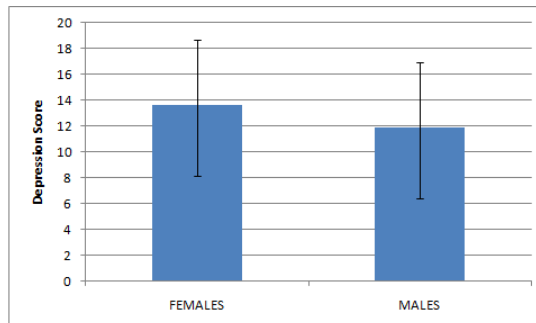
**RESULTS**

There was sex related statistically significant difference in depression scores (t=2.75, p=0.01). The average depression scores were 13.68 ± 4.98 in females and 11.95 ± 5.53 in males (Figure 1).

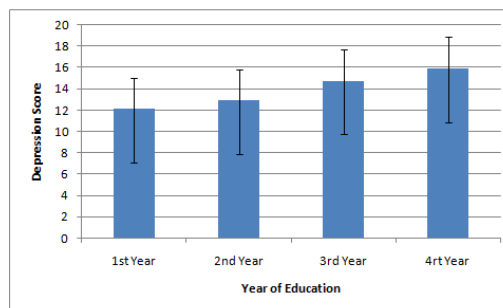
Figure 2 shows the effects of the year of education on depression scores. ANOVA results revealed that depression scores increased significantly as the year of education increases in total sample (F=4.53, p=0.00) and in women (F=6.23, p=0.00), but not in men (F=1.64, p=0.18).

There was statistically significant difference between depression scores and physical defect on body (t=2.76, p=0.01) or acne on face (t=2.12, p=0.04). Furthermore, compared to participants without physical defect on

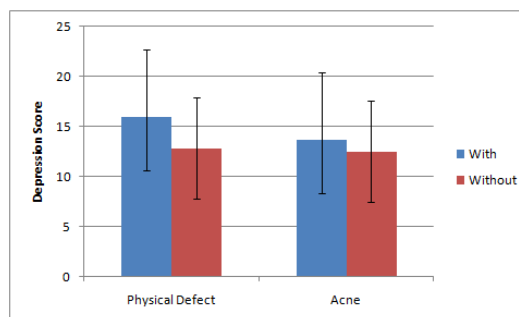
body (12.84 ± 5.05, N=276), participants with physical defects on body (16.01 ± 6.65, N=22) statistically significant higher depression scores. Similarly, participants with acne on face (12.52 ± 5.01, N=164) had higher depression scores compared to those without acne on face (13.74 ± 5.44, N=134) (Figure 3).



**Figure 1: Depression scores in male and female university students**



**Figure 2: Effect of education on depression scores**



**Figure 3: Depression scores in students with and without physical defect on body and acne on face**

**DISCUSSION**

This study showed that depression scores are associated with sex, level of education, physical defects on body and acne on face. The findings obtained in this study among Nigerian university students are consistent with those performed in other countries [37-39].

Higher level of depression in female university students is well known [1]. Evidences indicate that females usually report twice a higher level of depression, compared to males [40,41]. Results of our study showed that depression scores were higher in females than in males. Similar findings were reported in a study conducted in Ethiopia, in which female students had 4-fold higher level of depression than their male counterparts [42]. It has

been suggested that lack of social power, their greater likelihood to experience certain stressors, such as living in poverty, or being a victim of sexual abuse, as well as the social roles that women perform, may increase their risk of depression [43].

A couple of authors [10,11,14,15] from different parts of the world have reported progressive increase in depression scores as the level of education increases in university students. Consistent with the works of these authors [23,44-46], our findings revealed that depression scores increased with year of education in the university. Surprisingly, however, this association was confirmed for the total sample and for the female population, but not for the males. These results suggest that the impact of increasing years of education in the female population may be responsible for increasing the level of depression in Nigerian students.

In general, education has a greater protective effect for women than for men, for whites than for blacks, and for people growing up in families with limited socioeconomic resources. Over the period of life of an individual, the protective effect of education against depression appears to follow a curvilinear pattern with greater effects among young adults and the elderly. However, this remains a promising area of further research due to the conflicting results across studies. Studies have examined whether the association between depression and education depends on race/ethnicity [24,47], and family socioeconomic resources [48]. Evidences suggest that people with lower level of education have fewer economic and social resources to successfully cope with mental health issues. They are therefore more likely to suffer from depression [49]. For example, a study of randomly selected U.S. adults revealed that lower educational level increases the risk of depression and co-morbidities [50]. The reason for this phenomenon is not exactly known, further research on the relationship of different degrees of depression and level of educational attainment as well as confounding factors that affect this relationship will be beneficial.

It is possible that the economic and social condition of the students in our study may be better than non-private university students. Previous studies on depression in Nigeria have been conducted in government or non-private universities. As a possible explanation, worries of students related to finding jobs compatible with their specialty after graduation may be substantial on higher depression scores in fourth year of education. Indeed research data have shown that future-related occupational anxieties are the most important factors effecting the association between depression scores and university education. However, future investigations are required to test the inconsistencies of data across studies performed in different parts of the world.

Consistent with the findings of Arslan *et al.* [33], this study showed that physical defect on body and acne on face is associated with depression. Thus, poor quality of life or somatic illnesses can predispose university students to a higher depression score.

It should be noted; however that depression in university students can lead to decrease in academic performance. For example, Hysenbegasi *et al.*, and Ruz *et al.* showed that students with depression had a lower grade point average, compared to those without depression [51,52].

## CONCLUSION

This study indicates the necessity of carrying out a structured intervention program aimed at addressing the problems of depression among university students. Academic programs and workloads as well as extra-curricular activities may be constantly evaluated for their effectiveness in all departments and faculties of the university. Higher institution may periodically introduce measures or programs aimed at managing mental problems including stress in students.

## CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this article.

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