

Anxiety disorders among adolescents attending secondary schools in Enugu South East Nigeria.

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Abstract

Background: Anxiety disorders in adolescents can lead to serious psychosomatic problems.

Objectives: This study was aimed at determining pattern and factors associated with anxiety disorders among adolescents who attend secondary schools in south east Nigeria.

Methods: A total of 1500 adolescents who fulfilled the inclusion criteria were enrolled by simple random sampling. The questionnaire used was adapted from The Revised Manifest Anxiety Scale (RCMAS). The RCMAS is a 37-item self-report inventory used to measure anxiety in children, for clinical purposes (diagnosis and treatment evaluation), educational settings, and for research purposes.

Results: Three hundred and eighty-four students 384 (34.1%) had anxiety. On segregation into different components of anxiety 188 (16.7%) had physiological component, 674 (59.9%) had worry and 399 (35.5%) had concentration issues. There was statistical significant association between sex and general anxiety ($\chi^2=30.121$, $p<0.001$). There were statistical significant association between sex and physiological component of anxiety ($\chi^2=10.838$, $p=0.001$), class ($\chi^2=5.546$, $p=0.009$), father's educational level ($\chi^2=8.306$, $p=0.016$) and mother's occupation ($\chi^2=12.348$, $p=0.015$). There was statistical significant association between sex and worry component of anxiety ($\chi^2=24.403$, $p<0.001$). There was statistical significant association between sex and concentration component of anxiety ($\chi^2=11.223$, $p=0.001$).

Conclusions: All the spectrum of anxiety disorders was present among adolescents in their institution with varying degrees of associated factors.

Keywords: Anxiety disorder, Adolescents, Secondary schools, Revised manifest anxiety scale.

Abbreviation: DSM: Diagnostic and Statistical Manual of Mental Disorders; ICD: International Classification of Diseases; NICE: National Institute for Health and Care Excellence; RCMAS: Revised Children's Manifest Anxiety Scale

Implications and Contribution

Anxiety disorders among adolescents are serious and most neglected mental health problem. In Nigeria, knowledge of mental disorders is extremely low, making

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it difficult for people to access prompt medical attention. This study reveals that all the spectrum of anxiety disorders were present among adolescents with associated factors.

Introduction

Anxiety disorders in adolescents occur when anxious feelings are persistently intense, go on for weeks or even longer and are so distressing that they interfere with young people's learning, socializing and ability to carry out day to day activities [1].

Anxiety disorders among adolescents are classified in

the Diagnostic and Statistical Manual of Mental Disorders (DSM, currently version V, American Psychiatric Association) or the International Classification of Diseases (ICD, currently version 10, World Health Organization) [2]. According to the DSM-5, anxiety disorders comprise the following conditions: panic disorder, agoraphobia, social anxiety disorder (social phobia), specific phobia, Generalized Anxiety Disorder (GAD), separation anxiety disorder, and selective mutism [2].

Majority of this disorder share common clinical features such as extensive anxiety, physiological anxiety symptoms, and behavioral disturbances such as extreme avoidance of feared objects, and associated distress or impairment [2-4]. There are several variations in the epidemiology of anxiety disorders, however the lifetime prevalence of anxiety disorder in studies with children or adolescents is about 15% to 20%. In fact, it has been opined that the most frequent disorders among children and adolescents are separation anxiety disorder, with estimates of 2.8% and 8%, and specific and social phobias, with rates up to around 10% and 7%, respectively [3-5].

It is pertinent to note that in the assessment of anxiety in children the core diagnostic criteria might present differently among them, requiring special assessment strategies. For instance, the differences in age of onset provide one important scenario for separating different types of anxiety disorders [4-7]. Furthermore, the earliest age of onset has been consistently found for separation anxiety disorder and some types of specific phobias with most cases emerging in childhood before the age of 12 years, this is followed by the onset of social phobia with incidences in late childhood and throughout adolescence, with very few cases emerging after the age of 25. Panic disorder, agoraphobia, and GAD, in contrast, have their core periods for first onset in later adolescence with further first incidences in early adulthood [4]. It is estimated that current prevalence of anxiety ranged between 0.9% and 28.3% and past year prevalence was between 2.4% to 29.8% [4-7]. Substantive factors such as gender, age, culture, conflict and economic status, and urbanization accounted for the greatest proportion of variability [4]. The global current prevalence of anxiety disorders ranged from 5.3% (3.5% - 8.1%) in African cultures to 10.4% (7.0 - 15.5%) in Euro/Anglo cultures [5-8].

Anxiety disorders in adolescents can be serious mental health problems since these young people are still developing. If left untreated, it can have long-term consequences for mental health and development. Generally, all anxiety disorders more frequently occur in females than males. Although sex differences may occur as early as childhood, they increase with age reaching ratios of 2:1 to 3:1 in adolescents [1,6].

Risk factors for anxiety disorders include genetic, personality, environmental or other factors like ongoing physical illness, most anxiety disorders respond well to treatment especially if the disorders are treated early [8].

In Nigeria, awareness and knowledge of mental disorders is extremely low, making it difficult for people to access adequate and prompt medical attention [9]. Furthermore, factors such as lack of health facilities, inadequately skilled mental health practitioners and low socioeconomic status increase the number of patients getting proper mental health care.

In order to diagnose and manage anxiety disorders in adolescents promptly and adequately, it is pertinent to know the dynamics of such an important problem in an environment. This paper therefore is a screening tool aimed at determining the pattern and spectrum and prevalence of anxiety disorders among adolescents attending secondary schools in two states in south east Nigeria.

At present, there is a dearth of knowledge on adolescent anxiety disorders in the study locality, thus justifying the need for this study.

Methods

Study design

This is an observational cross-sectional study that examines various types of anxiety disorders among adolescents aged 11-20 years that attend secondary school in Enugu and Ebonyi states, south East, Nigeria. It is important to note that the study was conducted in an exam free period. This is because exam in itself is anxiety provoking.

Study area

The study was carried out among adolescents in four secondary schools in Enugu and Ebonyi states of Nigeria.

Study population

One thousand five hundred adolescents who gave consent and who met the inclusion criteria were consecutively recruited between April and June, 2017 from four schools located in urban and semi urban areas of the states. The schools were selected by convenient sampling. One thousand five hundred questionnaires were administered but 1450 were eventually studied. This gave a response rate of 94%. About 500 questionnaires were filled by respondents from Ebonyi state while 1000 were filled by respondents from Enugu state.

Study procedure

The study was carried out among adolescents in senior secondary 4 to 6. Informed consent was sought from the students after they were told that their participation was optional and that they could withdraw from the study at any time, if they so desire. Adolescents who gave consent and who are within the age range of 11-20 years were included in this study while those without consent and those with suspected psychiatric disorders who were on antipsychotic drugs were excluded. (This was elicited by asking or interviewing the subjects to find out if they had been at any time diagnosed of any psychiatric illness or

received antipsychotic drugs). Socioeconomic class was assigned to the students using a recommended method [8].

Questionnaire

The questionnaire was adapted from The Revised Children's Manifest Anxiety Scale (RCMAS).

The RCMAS is a 37-item self-report inventory used to measure anxiety in children, for clinical purposes (diagnosis and treatment evaluation), educational settings, and for research purposes. The RCMAS consists of 28 Anxiety items and 9 Lie (social desirability) items. Each item is purported to embody a feeling or action that reflects an aspect of anxiety, hence the subtitle, "What I think and Feel". It is a relatively brief instrument, which has been subjected to extensive study to ensure that it is psychometrically sound.

The Revised Children's Manifest Anxiety Scale was developed by Reynolds et al. [9]. It is based on the Children's Manifest Anxiety Scale (CMAS). The Revised version of the CMAS deletes, adds and reorders items from the CMAS to meet psychometric standards. Reynolds et al. [9] also renamed the instrument, "What I Think and Feel", although subsequent papers primarily refer to it as the Revised Children's Manifest Anxiety Scale (RCMAS) [9].

Reliability

Several types of reliability can be demonstrated with the RCMAS, in terms of the internal consistency of the instrument, stability, and possibly equivalence, but not in terms of the inter-rater reliability. Reynolds and other researchers have focused on developing an instrument that was psychometrically sound and that could be used by a variety of practitioners (clinicians, teachers and researchers), without attention to potential variations with application or interpretation in its use.

Validity

There is substantive research confirming the validity of the RCMAS as a measure of chronic manifest anxiety in children, dating back to the original article reporting the development of the RCMAS. In addition, the RCMAS is frequently used in research to validate other instruments and to measure treatment effects.

A total of 28 anxiety items (25 from the CMAS and three new items), and nine Lie items were retained to form the current 37 items of the RCMAS. The results would suggest that the 28 anxiety items that were finally selected adequately represent all aspects of the anxiety construct, thereby indicating content validity.

The five factors confirmed are as follows [9].

Anxiety Scale Factors:

Item Numbers

The Physiological Factor- 1, 5, 9, 13, 17, 19, 21, 25, 29, 33

The Worry/Oversensitivity Factor- 2, 6, 7, 10, 14, 18, 22, 26, 30, 34, 37

The Concentration Anxiety Factor- 3, 11, 15, 23, 27, 31, 35

Scoring method and interpretations of results

Each item is given a score of one for a "yes" response, yielding a Total Anxiety score (Ag). Three empirically derived Anxiety Subscales scores (Physiological Anxiety, Worry/Oversensitivity, and Social Concerns/Concentration) and Lie Scale scores can be calculated. The Lie scale is best thought of as a social desirability scale as it does not directly and conclusively detect "lying".

Stallard, Velleman, Langsford and Baldwin recommend that an overall cut-off point of 19 out of 28 be used to identify children experiencing clinically significant levels of anxiety.

High scores on the sub-scales can represent different aspects of anxiety, which can be used to develop hypotheses about the origin and nature of a child's anxiety.

1. High scores on the Physiological Factor (items 1, 5, 9, 13, 17, 19, 21, 25, 29, 33) can indicate physiological signs of anxiety (eg sweaty hands, stomach aches).
2. High scores on the Worry/Oversensitivity Factor (items 2, 6, 7, 10, 14, 18, 22, 26, 30, 34, 37) would suggest that the child internalises their experiences of anxiety and that he or she may feel overwhelmed and withdraw.
3. High scores on the Concentration Anxiety Factor (items 3, 11, 15, 23, 27, 31, 35) would suggest that the child is likely to feel that he or she is unable to meet the expectations of other important people, inadequate and unable to concentrate on tasks.

Data Analysis

All data were analyzed using the Statistical Package for Social Sciences program (SPSS version 20 Chicago.) Chi-square was used to test significant association between gender and general, physiological and worry components of anxiety and between social class and general, physiological and worry components of anxiety. Odd ratio was used to compare social class of parents of adolescents with anxiety and those parents of adolescents with no anxiety. A p-value less than 0.05 was accepted as significant for each statistical test.

Ethical Consideration

Ethical clearance was procured from the Ethics Committee of the University Of Nigeria Teaching Hospital Enugu.

Results

Table 1 shows that majority of participants were <18 years 1068 (94.9%), female 644 (57.2%), in senior

Table 1. Socio-demographic characteristics of participants

Socio-demographic characteristics	N=1125	
	Frequency	Percent
Age in categories (years)		
<18	1068	94.9
18 and above	57	5.1
Sex		
Male	481	42.8
Female	644	57.2
Class cat		
JSS	406	36.1
SSS	719	63.9
Father's Educational level		
Primary and below	69	6.1
Secondary	264	23.5
Tertiary	792	70.4
Mother's Educational level		
Primary and below	73	6.5
Secondary	232	20.6
Tertiary	820	72.9
Father's occupation		
Civil/public servant	448	39.8
Business/trading	320	28.4
HT professional	238	21.2
LT professional	48	4.3
Others	71	6.3
Mother's occupation		
Civil/public servant	654	58.1
Business/trading	367	32.6
HT professional	44	3.9
LT professional	18	1.6
Others	42	3.7

secondary school 719 (63.9%), their fathers had tertiary education 792 (70.4%), their mothers had tertiary education 820 (72.9%), their father were civil/public servants 448 (39.8%) and their mother were civil/public servants 654 (58.1%).

Table 2 shows that 384 (34.1%) had anxiety. On segregation into different components of anxiety 188 (16.7%) had physiological component, 674 (59.9%) had worry and 399 (35.5%) had concentration issues.

Table 3 shows that there were statistical significant association between sex and general anxiety ($\chi^2=30.12$, $p<0.001$). There were no statistical significant association between general anxiety and other variables; age ($\chi^2=2.53$, $p=0.112$), class ($\chi^2=2.64$, $p=0.104$), father's educational level ($\chi^2=3.92$, $p=0.141$), mother's educational level ($\chi^2=1.10$, $p=0.577$), father's occupation ($\chi^2=3.43$, $p=0.489$) and mother's occupation ($\chi^2=8.59$, $p=0.072$).

It also shows that those aged ≥ 18 years were about 2 times (AOR=1.94, 95% CI 1.11–3.41) likely not to have anxiety than those <18 years. Females were about 2 times (AOR=2.14, 95% CI 1.64–2.78) likely not to

have anxiety than males. Those in senior class were about 80% (AOR=0.78, 95% CI 0.59–1.01) likely not to have anxiety than those in junior class. Those whose father had secondary education were about 80% (AOR=0.78, 95% CI 0.44–1.38) likely not to have anxiety than those whose father had primary education and below. Those whose mother were low technical professionals were about 4 times (AOR=3.73, 95% CI 1.40–9.98) likely not to have anxiety than those whose mother were civil/public servants.

Table 4 shows that there were statistical significant association between sex and physiological component of anxiety ($\chi^2=10.84$, $p=0.001$), class ($\chi^2=5.55$, $p=0.009$), father's educational level ($\chi^2=8.31$, $p=0.016$) and mother's occupation ($\chi^2=12.35$, $p=0.015$). There were no statistical significant association between physiological component of anxiety and other variables; age ($\chi^2=0.04$, $p=0.848$), mother's educational level ($\chi^2=3.47$, $p=0.177$), and father's occupation ($\chi^2=0.74$, $p=0.946$).

It also shows that females were about 2 times (AOR=1.77, 95% CI 1.26–2.48) likely not to have anxiety than males. Those in senior class were about

Table 2. Associations of characteristics with general anxiety

Variable	n=1125		Bivariate analysis χ^2 (p value)	Multivariate analysis AOR(95%CI)
	Disease	No disease		
Age in categories (yrs)				
<18	369 (33.6))	709 (66.4)	2.53 (0.112)	1
18 and above	25 (43.9)	32 (56.1)	-	1.94 (1.11-3.41)
Sex				
Male	121 (25.2)	360 (74.8)	30.12(0.000)	1
Female	263 (40.8)	381 (59.2)	-	2.14 (1.64-2.78)
Class cat				
JSS	151 (37.2)	255 (62.8)	2.64(0.104)	1
SSS	233 (32.4)	486 (67.6)	-	0.78 (0.59-1.01)
Father's Education				
Primary and below	26 (37.7)	43 (62.3)	-	-
Secondary	77 (29.2)	187 (70.8)	3.92(0.141)	0.78 (0.44-1.38)
Tertiary	281 (35.5)	511 (64.5)	-	1.07 (0.62-1.84)
Mother's Education				
Primary and below	29 (39.7)	44 (60.3)	-	-
Secondary	79 (34.1)	153 (65.9)	1.10 (0.577)	NA
Tertiary	276 (33.7)	544 (66.3)	-	-
Father's occupation				
Civil/public servant	159 (35.5)	289 (64.5)	-	-
Business/trading	97 (30.3)	223 (69.7)	-	-
HT professional	83 (34.9)	155 (65.1)	3.43 (0.489)	NA
LT professional	17 (35.4)	31 (64.6)	-	-
Others	28 (39.4)	43 (60.6)	-	-
Mother's occupation				
Civil/public servant	221(33.8)	433(66.2)	-	1
Business/trading	117(31.9)	250 (68.1)	-	0.99 (0.73-1.34)
HT professional	19(043.2)	25 (56.8)	8.59 (0.072)	1.66 (0.88-3.13)
LT professional	11(61.1)	7 (38.9)	-	3.73 (1.40-9.98)
Others	16(38.1)	26 (61.9)	-	1.31 (0.67-2.55)

Table 3. Associations of characteristics with physiological anxiety

Variable	n=1125		Bivariate analysis χ^2 (p value)	Multivariate analysis AOR(95%CI)
	Disease	No disease		
Age in categories (yrs)				
<18	179 (16.8)	889 (83.2)	0.04(0.848)	NA
18 and above	9 (15.8)	48 (84.2)	-	-
Sex				
Male	60 (12.5)	421 (87.5)	10.84(0.001)	1
Female	128 (19.9)	516(80.1)	-	1.77 (1.26-2.48)
Class cat				
JSS	82 (20.2)	324 (79.8)	5.55 (0.019)	1
SSS	106 (14.7)	613 (85.3)	-	0.66 (0.48-0.92)
Father's Education				
Primary and below	14(20.3)	55(79.7)	-	1
Secondary	29(11.0)	235(89.0)	8.31 (0.016)	0.63 (0.29-1.35)
Tertiary	145(18.3)	647(81.7)	-	1.21 (0.56-2.62)
Mother's Education				
Primary and below	15 (20.5)	58 (79.5)	-	1
Secondary	30 (12.9)	202 (87.1)	3.47 (0.177)	0.54 (0.26-1.14)
Tertiary	143 (17.4)	677 (82.6)	-	0.57 (0.26-1.24)

Father's occupation				
Civil/public servant	74 (16.5)	374 (83.5)	-	-
Business/trading	50 (15.6)	270 (84.4)	-	-
HT professional	43 (18.1)	195 (81.9)	0.74 (0.946)	NA
LT professional	9 (18.8)	39 (81.3)	-	-
Others	12 (16.9)	59 (83.1)	-	-
Mother's occupation				
Civil/public servant	114 (17.4)	540 (82.6)	-	1
Business/trading	51 (13.9)	316 (86.1)	-	0.88 (0.58-1.34)
HT professional	8 (18.2)	36 (81.8)	12.35 (0.015)	1.09 (0.49-2.44)
LT professional	8 (44.4)	10 (55.6)	-	4.76 (1.78-12.73)
Others	7 (16.7)	35 (83.3)	-	1.04 (0.44-2.46)

Table 4. Associations of characteristics with worry (Anxiety)

Variable	n=1125		Bivariate analysis χ^2 (p value) ²	Multivariate analysis AOR(95%CI)
	Disease	No disease		
Age in categories(yrs)				
<18	644 (60.3)	424 (39.7)	1.325 (0.250)	NA
18 and above	30 (52.6)	27 (47.4)	-	-
Sex				
Male	248 (51.6)	233 (48.4)	24.403 (0.000)	1
Female	426 (66.1)	218 (33.9)	-	1.84(1.44-2.33)
Class cat				
JSS	250 (61.6)	156 (38.4)	0.733 (0.392)	NA
SSS	424 (59.0)	295 (41.0)	-	-
Father's Education				
Primary and below	38 (55.1)	31 (44.9)	-	-
Secondary	164 (62.1)	100 (37.9)	1.242 (0.537)	NA
Tertiary	472 (59.6)	320 (40.4)	-	-
Mother's Education				
Primary and below	45 (61.6)	28 (38.4)	-	-
Secondary	144 (62.1)	88 (37.9)	0.741 (0.690)	NA
Tertiary	485 (59.1)	335 (40.9)	-	-
Father's occupation				
Civil/public servant	271 (60.5)	177 (39.5)	-	-
Business/trading	196 (61.3)	124 (38.8)	-	-
HT professional	135 (56.7)	103 (43.3)	1.484 (0.829)	NA
LT professional	28 (58.3)	20 (41.7)	-	-
Others	44 (62.0)	27 (38.0)	-	-
Mother's occupation				
Civil/public servant	393(60.1)	261(39.9)	-	-
Business/trading	214(58.3)	153(41.7)	-	-
HT professional	29(65.9)	15(34.1)	1.471 (0.832)	NA
LT professional	12(66.7)	6(33.3)	-	-
Others	26(61.9)	16(38.1)	-	-

60% (AOR=0.66, 95% CI 0.48–0.92) likely not to have anxiety than those in junior class. Those whose father had secondary education were about 60% (AOR=0.63, 95% CI 0.29–1.35) likely not to have anxiety than those whose father had primary education and below. Those whose mother had secondary education were about 50% (AOR=0.54, 95% CI 0.26–1.14) likely not to have anxiety than those whose mother had primary education and below. Those whose mother were low technical professionals

were about 5 times (AOR=34.76, 95% CI 1.78–12.73) likely not to have anxiety than those whose mother were civil/public servants.

Table 5 shows that there were statistical significant association between sex and worry component of anxiety ($\chi^2=24.403$, $p<0.001$). There were no statistical significant association between worry component of anxiety and other variables; age ($\chi^2=1.325$, $p=0.250$), class ($\chi^2=0.733$, $p=0.392$), father's educational level ($\chi^2=1.242$, $p=0.537$),

Table 5. Associations of characteristics with concentration (Anxiety)

Variable	n=1125		Bivariate analysis χ^2 (p value) ²	Multivariate analysis AOR(95%CI)
	Disease	No disease		
Age in categories (yrs)				
<18	376 (35.2)	692 (64.8)	0.63 (0.429)	NA
18 and above	23 (40.4)	34 (59.6)	-	-
Sex				
Male	144 (29.9)	337 (70.1)	11.22 (0.001)	1
Female	255 (39.6)	389 (60.4)	-	1.50(1.16-1.93)
Class cat				
JSS	145 (35.7)	261 (64.3)	0.02 (0.896)	NA
SSS	254 (35.3)	465 (64.7)	-	-
Father's Education				
Primary and below	33 (47.8)	36 (52.2)	-	1
Secondary	86 (32.6)	178 (67.4)	5.57 (0.062)	0.53(0.30-0.95)
Tertiary	280 (35.4)	512 (64.6)	-	0.73(0.40-1.31)
Mother's Education				
Primary and below	29 (39.7)	44 (60.3)	-	1
Secondary	92 (39.7)	140 (60.3)	3.23 (0.199)	1.21(0.68-2.16)
Tertiary	278 (33.9)	542 (66.1)	-	0.87(0.47-1.55)
Father's occupation				
Civil/public servant	158 (35.3)	290 (64.7)	-	-
Business/trading	103 (32.2)	217 (67.8)	-	-
HT professional	90 (37.8)	148 (62.2)	5.04 (0.283)	NA
LT professional	16 (33.3)	32 (66.7)	-	-
Others	32 (45.1)	39 (54.9)	-	-
Mother's occupation				
Civil/public servant	221 (33.8)	433 (66.2)	-	-
Business/trading	132 (36.0)	235 (64.0)	0.22 (0.639)	NA
HT professional	19 (43.2)	25 (56.8)	-	-
LT professional	10 (55.6)	8 (44.4)	-	-
Others	17 (40.5)	25 (59.5)	-	-

mother's educational level ($\chi^2=0.741$, $p=0.690$), father's occupation ($\chi^2=1.484$, $p=0.829$) and mother's occupation ($\chi^2=1.471$, $p=0.832$).

It also shows that females were about 2 times (AOR=1.84, 95% CI 1.44–2.33) likely not to have anxiety than males.

Table 6 shows that there were statistical significant association between sex and concentration component of anxiety ($\chi^2=11.22$, $p=0.001$). There were no statistical significant association between concentration component of anxiety and other variables; age ($\chi^2=0.63$, $p=0.429$), class ($\chi^2=0.02$, $p=0.896$), father's educational level ($\chi^2=5.57$, $p=0.062$), mother's educational level ($\chi^2=3.23$, $p=0.199$), father's occupation ($\chi^2=5.04$, $p=0.283$) and mother's occupation ($\chi^2=0.22$, $p=0.639$).

It also shows that females were about 2 times (AOR=1.5, 95% CI 1.16–1.93) likely not to have anxiety than males. Those whose father had secondary education were about 50% (AOR=0.53, 95% CI 0.30–0.95) likely not to have anxiety than those whose father had primary education and below. Those whose mother had secondary

education were about 1.2 (AOR=1.21, 95% CI 0.68–2.16) likely not to have anxiety than those whose mother had primary education and below.

Discussion

We noted in this study that the prevalence of anxiety among adolescents is 34.1 percent. Jalali et al. [10] in their study noted the prevalence to be 10.8%. They obtained this prevalence mainly among those who are between 10-18 years. Several studies have reported the prevalence of anxiety in adolescents in different part of the world; in fact it ranges between 2.6% to 41.2% among pre-adolescent children to 6.8% and 85% among adolescents [11-14]. Current reviews revealed the prevalence rates of 0.54% to 12.8% for generalized anxiety disorder, this also confirms vividly the prevalence rates of 0.16% to 11.1% obtained in other areas [15-17]. Differences in race, geographical construct and methodology could explain these variations in prevalence.

We noted in this present study varying prevalence in types of anxiety spectrum. For instance, the prevalence of physiological, worries and loss of concentration in

Table 6. Associations of characteristics with concentration (Anxiety)

Variable	n = 1125		Bivariate analysis χ^2 (p value) ²	Multivariate analysis AOR(95%CI)
	Disease	No disease		
Age in categories (yrs)				
<18	376 (35.2)	692 (64.8)	0.63 (0.429)	NA
18 and above	23 (40.4)	34 (59.6)	-	-
Sex				
Male	144 (29.9)	337 (70.1)	11.22 (0.001)	1
Female	255 (39.6)	389 (60.4)	-	1.50 (1.16-1.93)
Class cat				
JSS	145 (35.7)	261 (64.3)	0.02 (0.896)	NA
SSS	254 (35.3)	465 (64.7)	-	-
Father's Education				
Primary and below	33 (47.8)	36 (52.2)	-	1
Secondary	86 (32.6)	178 (67.4)	5.57 (0.062)	0.53 (0.30-0.95)
Tertiary	280 (35.4)	512 (64.6)	-	0.73 (0.40-1.31)
Mother's Education				
Primary and below	29 (39.7)	44 (60.3)	-	1
Secondary	92 (39.7)	140 (60.3)	3.23 (0.199)	1.21 (0.68-2.16)
Tertiary	278 (33.9)	542 (66.1)	-	0.87 (0.47-1.55)
Father's occupation				
Civil/public servant	158 (35.3)	290 (64.7)	-	-
Business/trading	103 (32.2)	217 (67.8)	-	-
HT professional	90 (37.8)	148 (62.2)	5.04 (0.283)	NA
LT professional	16 (33.3)	32 (66.7)	-	-
Others	32 (45.1)	39 (54.9)	-	-
Mother's occupation				
Civil/public servant	221 (33.8)	433 (66.2)	-	-
Business/trading	132 (36.0)	235 (64.0)	0.22 (0.639)	NA
HT professional	19 (43.2)	25 (56.8)	-	-
LT professional	10 (55.6)	8 (44.4)	-	-
Others	17 (40.5)	25 (59.5)	-	-

adolescents were noted to be 16.7, 59.9 and 35.5% respectively.

Physiologic anxiety which is seen clinically in adolescents as sweaty hands, stomach aches, fear, jitteriness showed a wide prevalence of between 6 and 44 % in adolescents [15].

Moreover, the prevalence of worries or Anxiety Hypersensitivity (AS) was noted to be 59.9% in this study which is the highest type of anxiety seen in adolescents. It is noted that as a risk factor for psychopathology [16]. These findings provide strong evidence suggesting that AS is a risk factor for development of anxiety symptoms and depression among youth in early adolescence.

Schmidt et al. [17] and Zvolensky et al. [18] have opined that there is a clarion call for the use of behavioral skill to significantly reduce AS and this will offer a possibility for the implementation of a primary prevention intervention that can avert anxiety and panic reactions among high-risk youth.

These worries and over sensitivity in adolescents throws much light that an adolescent with this disorder

internalizes their experiences of anxiety and that he or she may feel overwhelmed and withdrawn [19].

It is seen in this study that there exists a female predominance in all types of anxiety. In all studies seen, anxiety disorders were almost twice as common among females as compared to males [20,21]. Although sex differences may occur as early as childhood, they increase with age reaching ratios of 2:1 to 3:1 in adolescence [22].

Reasons ranging from biological, genetic, psychosocial, hormonal to family factors have been pointed out as possible cause for this gender difference.

There is a linear increase in prevalence of anxiety from the junior class to the senior class of facing new learning environment and harder and more complex curriculum as their progress to higher class may account for this increase.

We examined three strata of anxiety among adolescents; this is indeed the most commonly used measures of anxiety in children elicited by the Revised Children's Manifest Anxiety Scale. The subtypes are worry and oversensitivity, physiological anxiety, and social concerns and concentration problems.

We noted a strong link of physiological anxiety among adolescents with high levels of paternal level of education and maternal occupation. There exists no link between other types of anxiety with socioeconomic class. Katie and colleagues, in the USA, noted that parental education is associated with mental disorders only among non-Hispanic White adolescents but pointed that none of the socioeconomic indices is associated with mental disorders in Black adolescents. Many studies have also noted a stronger association between poverty and mental disorders among adolescents [23-29].

Adverse life events, poorer coping styles and weaker social support are examples of factors that are associated with disadvantaged socio economic class and account for some of the socioeconomic variation in depression [25-29].

Limitation

A cohort where the students are followed up for a long time would have been worth-while.

Conclusion

All the spectrum of anxiety disorders was present among adolescents in their institution with varying degrees of associated factors.

Declarations

Ethical approval and consent to participate

Ethical clearance was specifically approved and granted by the Ethics Committee of University of Nigeria Teaching Hospital.

Availability of data and materials

The data will not be shared in order to protect the participants' anonymity

Authors' contribution

All authors contributed to the conception and writing of the manuscript. AEC analyzed the manuscript.

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