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Pattern of Depressive Illness among School Age Children Presenting at the University of Port Harcourt Teaching Hospital

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Abstract

Background: Depression is very common amongst adolescents and is the fourth leading cause of illness and disability among adolescents aged 10 to 19 years. Majority of the studies on depression among adolescents were carried out in the western world, with very few in developing countries like Nigeria. The aim of this study therefore was to determine the prevalence and pattern of depressive illness among school age children 10 - 19 years seen at the University of Port Harcourt Teaching Hospital. **Methods:** This retrospective study was carried out in the Child and Adolescent Clinic of the Neuropsychiatry Department of the University of Port Harcourt Teaching Hospital (UPTH). The case notes of all school age children aged between 10 to 19 years who were treated for depression from 2010 to 2019 were retrieved and reviewed. Information sought included sociodemographic, year of presentation and diagnosis. Data was fed in to excel spread sheet and analyzed using SPSS version software. **Results:** The Clinic had attended to a total 1096 children with various childhood mental illnesses within the period under review. Out of 238 patients (21.7%) aged 10 to 19 years treated for depression within the period under review, 129 (54.20%) were males and 109 (45.80%) were females with male to female ratio of 1.18:1. The 15 - 19 years age group had a higher prevalence of depression 195 (81.93%) compared to 109 (45.80%) of those aged between 10 to 14 years. One hundred and thirty-six (57.14%) patients had severe depression, out of which 87 (63.97%) had non-psychotic depression, while 49 (36.03%) had psychotic depression. Increasing age (p = 0.001) and living in the urban area (p = 0.001) were significantly associated with having severe depression. **Conclusion:** Depression is common in our environment. Severe depression was the commonest form of depression among adolescents seen in UPTH. Preventive measures should be instituted in primary and secondary schools in Rivers State to reduce its prevalence.

Keywords

Pattern, Depressive Illness, School Age Children, UPTH

1. Introduction

Depression is a chronic debilitating psychological illness and affects all age groups including late childhood and adolescence referred to in this study as school age (Kessler et al., 2007). Globally, depression is the fourth leading cause of illness and disability among adolescents aged 15 - 19 years and fifteenth for those aged 10 - 14 years (Marcus et al., 2012). In the United States, the prevalence of major depressive disorder is approximately 1 percent of preschoolers, 2 percent of school-aged children and 5 to 8 percent of adolescents (Son & Kirchner, 2000). The prevalence of depression appears to be increasing in successive generations of children, with onset at earlier ages (Kessler et al., 2007).

Past-year estimates of the prevalence of major depressive disorders in early adulthood range from 10% - 17% (Moffitt et al., 2010), with women about twice as likely to be affected as men. Depression is relatively uncommon in pre-pubertal children (1% - 2%), with an almost equivalent gender ratio (Egger & Angold, 2006). Levels then begin to rise in the early teens, more sharply in girls than in boys, increasing to 2:1 female-to-male ratio by the mid-teens and adolescents. (Kessler et al., 2007; Kaufman et al., 2001) until the female preponderance characteristic of adult depression is clearly established (Thapar et al., 2012).

Depression among children and adolescents is common but frequently unrecognized. The clinical spectrum of the disease can range from simple sadness to a major depressive illness. Risk factors include a family history of depression and poor school performance. Suicide has become a growing public health concern as successive generations have shown a parallel increase of suicide and depression in the pediatric age group (Kessler et al., 2007). Childhood depression, like the depression of adults, can encompass a spectrum of symptoms ranging from normal responses of sadness and disappointment in stressful life events to severe impairment caused by clinical depression (Kessler et al., 2007; Kaufman et al., 2001).

School-aged children are cognitively able to internalize environmental stressors (e.g., family conflict, criticism, failure to achieve academically) and display low self-esteem and excessive guilt (Hussong et al., 2011). However, much of this inner turmoil is expressed through somatic complaints (headaches, stomachaches), anxiety (school phobia, excessive separation anxiety) and irritability (temper tantrums and other behavioral problems) (Thapar & Rice, 2006; Stringaris et al., 2012). It is important to note that some depressed children attempt to compensate for their low self-esteem by trying to please others and be accepted. Because in this effort, they may excel academically and behave well, and their depression may go unnoticed (Thapar & Rice, 2006).

Adolescents experience many developmental challenges as they strive to separate from their parents, become autonomous and establish their own identities (Angold et al., 1999; Bolton et al., 2007). In this process they depend increasingly on their peer groups. This period of biopsychosocial maturation creates the conditions for adolescents to experience a greater sense of hopelessness and despair at a time when their ability to complete suicide is greater than when they were younger (Twenge et al., 2018). They also exhibit more anhedonia, hypersomnia, weight change and substance abuse than younger children (Thapar et al., 2012).

Before now, depression was seen as a predominantly adult disorder, and children and adolescents were considered too developmentally immature to experience depressive disorders, and adolescent low mood was seen as part of "normal" teenage mood swings (Kaufman et al., 2001; Copeland et al., 2009). This belief was primarily because they believed that children lacked the mature psychological and cognitive structure necessary to experience these problems. However, a growing body of evidence has confirmed that children and adolescents not only experience the whole spectrum of mood disorders but also suffer from the significant morbidity and mortality associated with them (Wichstrom et al., 2012; Harrington et al., 1990; Hill et al., 2004).

Psychosocial risk factors include a family history of depression, previous depressive episodes, family conflict, family bereavement, separations and marital disharmony, child maltreatment and neglect, and peer conflict and bullying (Jaffee et al., 2002; Kendler et al., 2000). Studies have found association between increased internet use following the technological breakthrough in the last decade resulting in increased media screen time and suicide (Twenge et al., 2018). There is usually uncertainty regarding sexual orientation, poor academic performance and comorbid conditions such as dysthymia, anxiety disorders and substance abuse disorders (Hussong et al., 2011; Harrington et al., 1990; Hill et al., 2004; Moffitt et al., 2007; Wittchen et al., 2000; World Drug Report, 2018). In major depressive disorder, 40 to 70 percent of patients have comorbid psychiatric disorders (Moffitt et al., 2007; Wittchen et al., 2000; Whalen et al., 2001; Dunn & Goodyer, 2006). These comorbidities include the "double" depressions, anxiety disorders and disruptive disorders (conduct disorder, attention-deficit/hyperactivity disorder) (Moffitt et al., 2007; Wittchen et al., 2000). Major depressive disorder is also associated with substance abuse and personality disorders (World Drug Report, 2018; Whalen et al., 2001). Comorbidities are negative prognostic factors because they increase the duration and severity of episodes of major depressive disorder, and the likelihood of recurrence and suicidal tendencies (Twenge et al., 2018).

Studies across all age groups point to a family history of depression and exposure to stressful life events as the most robust risk factors for depression (Lau & Eley 2008; Rutter et al., 2009; Shanahan et al., 2011; Tully et al., 2008; Caspi et al., 2003). Chronic stressors affecting relationships appear to have a greater impact than isolated acute events, especially in females (Thapar et al., 2012). In addition, there are pointers to some aetiological differences between child-, ado-

lescent-, and adult-onset depression.

Furthermore, childhood adversities including poverty, sexual abuse and psychopathology may also present distal risks for depression later in the life course (Hill et al., 2004; Shanahan et al., 2011), through selection into more disadvantaged and stressful life circumstances. Adolescent depression is associated with a range of adverse outcomes including social and educational impairments as well as both physical and mental health problems later in life (Thapar et al., 2012).

There is also dearth of hospital and community-based empirical data on the magnitude, course, and treatment patterns of depression among school age children in Nigeria that can encourage efforts needed for establishing child and adolescent mental health policy. More reliable estimates of the prevalence of depression among children and adolescents are needed to inform public policy and to develop adapted psychiatric services (Weisz et al., 2006; Luby, 2010; Merry et al., 2011), age-specific training for professionals, and prevention and research planning. This study therefore attempts a search for hospital-based prevalence of depressive disorders in school age children, including baseline socio-demography.

2. Aim

The aim of this study therefore was to determine the prevalence and pattern of depressive illness among school age children 10 - 19 years seen at the University of Port Harcourt Teaching Hospital.

3. Methodology

3.1. Study Design

This was a retrospective study.

3.2. Study Area

The study was carried out at the Child and Adolescent Clinic of the Psychiatry Department of UPTH. The University of Port Harcourt Teaching Hospital originally commenced its operations in 1980 and was officially commissioned by the federal government in 1985. UPTH is currently a 900-bedded tertiary healthcare institution proving healthcare services for people within the Niger Delta region. Department of Neuropsychiatry is one of the 19 clinical departments of the hospital and it gets referrals mainly from the Accident and Emergency, general outpatients, Internal Medicine and Paediatrics Departments. Consent for the study was obtained from the research ethical committee of the hospital.

3.3. Study Population

This study was done among school aged children 10 to 19 years attending the Child and Adolescent Clinic of the Psychiatry Department of UPTH.

3.4. Study Procedure

Medical case notes of all patients who fell within the ages under consideration

seen in the clinic from 2010 to 2019 were retrieved. Medical records of only patients diagnosed and managed for depression by a Consultant Child and Adolescent Mental Health Physicians within the age group of 10 - 19 years were thoroughly reviewed using a short data extraction form. Information sought included socio-demographic, year of presentation, duration and severity of illness. Depressive cases with further diagnosed comorbidities were excluded from the study. A note was taken of the total cases of child and adolescent mental disorders seen in the clinic within the period under review.

3.5. Data Management and Analysis

Data was analyzed using the SPSS version 20 statistical package and results presented using descriptive and analytical methods. Confidence interval was set at 95% while value of less than 0.05 was considered statistically significant.

3.6. Ethical Consideration

Ethical approval for the study was obtained from the ethical committee of the University of Port Harcourt Teaching Hospital. Access to retrieve and review the patients medical records was granted by the ethical committee.

3.7. Limitations of the Study

This was a review study as such this would have reduced the strength of evidence. Secondly, some of the vital and salient information like family history of mental illness, exact level of education as well as academic were not documented in most of the patients' medical records; hence, such analysis could be done due to very scanty data.

4. Results

The Child and Adolescent Clinic had attended to a total 1096 children with various childhood mental illnesses within the period under review. There were 238 patients aged 10 - 19 years with depression, with an overall prevalence of 21.7%. Gender distribution showed 129 (54.20%) were males and 109 (45.80%) females, with male to female ratio of 1.18:1. Table 1 shows the socio-demographic characteristics of the patients with depression.

The prevalence of depression was significantly higher among patients aged 15 - 19 years with 195 (81.93%) compared to those aged between 10 - 14 years with 43 (18.07%) ($p = 0.001$). There were more males with depression with 129 (54.20%) compared to the females with 109 (45.80%), though this was not statistically significant ($p = 0.067$). More patients with depression 155 (65.13%) lived in urban areas compared to rural areas 83 (34.13) and this is statistically significant ($p = 0.001$). Majority of the patients were from Rivers State 129 (54.20%), Imo State 44 (18.49%) and Abia State 15 (6.30%). Majority of the patients presented in 2019 (20.17%), followed by 2013 (15.13%) and 2014 (12.61%).

Table 2 shows the levels of depression found among the patients. Majority of the patients 136 (57.14%) had severe depression, out of which 87 (63.97%) had

non-psychotic depression, while 49 (36.03%) had psychotic depression.

Table 3 shows the levels of depression across age groups. Within age groups, more younger adolescents aged 10 - 14 years had mild depression compared to older adolescents aged 15 - 19 years (30.23% vs 28.72%). More younger adolescents had severe depression compared to the older adolescents (60.47% vs 56.41%). On the other hand, more older adolescents had moderate depression compared to the younger adolescents (14.87% vs 9.30%).

Figure 1 shows that the prevalence of severe depression was significantly higher (81%) among the age group 15 - 19 years, compared to the 10 - 14 years age group (19%) ($p = 0.001$). Figure 2 shows the association between severe depression and the patients' place of residence. A higher proportion (64%) of the patients with severe depression resided in the urban areas compared to the rural areas (36%) and this is statistically significant ($p = 0.001$).

Table 4 shows that there was no statistically significant relationships between types of severe depression and age group ($p = 0.952$), gender ($p = 0.763$) and place of residence ($p = 0.290$).

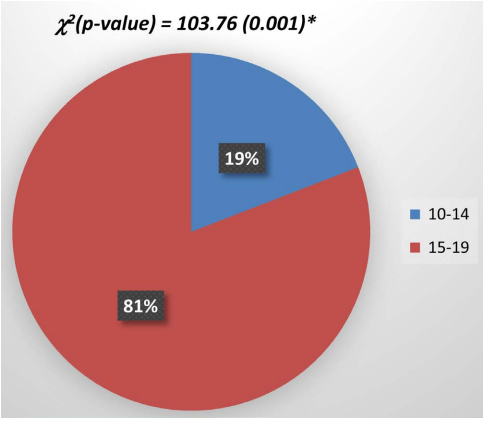

Figure 1. Association between severe depression and age group.

Table 1. Sociodemographic characteristics of the patients.

Sociodemographic Characteristics	Total n = 238 (%)	Chi-Square	p = value
Age group in years			
10 - 14	43 (18.07)	194.15	0.001*
15 - 19	195 (81.93)		
Gender			
Male	129 (54.20)	3.36	0.067
Female	109 (45.80)		
Place of residence			
Urban	155 (65.13)	43.56	0.001*
Rural	83 (34.87)		

*Statistically significant ($p < 0.05$).

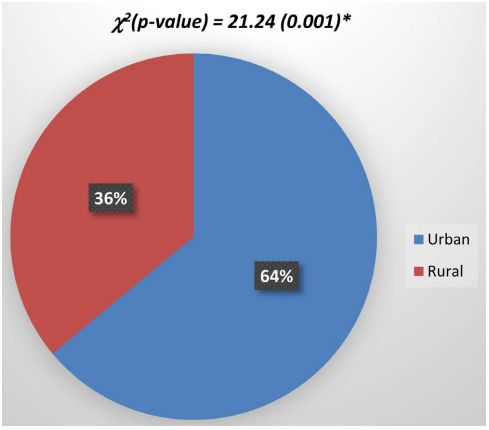

Figure 2. Association between severe depression and place of residence of the patients.

Table 2. Levels of depression found among the patients.

Levels of Depression	Frequency (n = 238)	Percentage (%)
Mild	69	28.99
Moderate	33	13.87
Severe	136	57.14
Forms of Severe Depression		
Non-Psychotic	87	63.97
Psychotic	49	36.03

Table 3. Levels of depression across age groups.

Levels of Depression	Total Sample (n = 238) (%)	Younger Adolescents 10 - 14 yrs (n = 43) (%)	Older Adolescents 15 - 19 yrs (n = 195) (%)
Mild	69 (29.00)	13 (30.23)	56 (28.72)
Moderate	33 (13.86)	4 (9.30)	29 (14.87)
Severe	136 (57.14)	26 (60.47)	110 (56.41)

Table 4. Association between socio-demographic characteristics and types of severe depression.

Socio-demographic characteristics	Types of severe depression		Total (%)	Chi-square	*p* value
	Non-psychotic N = 87 (%)	Psychotic N = 49 (%)			
Age Group (years)					
10 - 14	16 (61.54)	10 (38.45)	26 (100)	0.03	0.952
15 - 19	71 (64.55)	39 (35.45)	110 (100)		
Gender					
Male	46 (62.16)	28 (37.84)	74 (100)	0.09	0.763
Female	41 (66.13)	21 (33.87)	62 (100)		
Place of residence					
Rural	28 (57.14)	21 (42.86)	49 (100)	1.12	0.290
Urban	59 (67.82)	28 (32.18)	87 (100)		

5. Discussion

Previous reports have stated that depression is very common among school age children (Son & Kirchner, 2000) and is one of the leading causes of illness and disability among adolescents globally (Belfer, 2008; Wahid et al., 2020), The finding from this study corroborates these reports as 238 adolescents were treated for depression during the period under consideration. This figure however excludes children with depression who were excluded from this study because they also had either medical or psychiatric comorbidities, showing how common the depression is among the school age children in our environment. Another important finding from our study was that the prevalence of depression among adolescents increased with age, as majority (81.93%) of the patients with depression belonged to the 15 - 19 years age group. This is consistent with the report of other researchers (Jha et al., 2017; Meitei & Singh, 2019; Demoze et al., 2018).

The possible reason for the higher prevalence of depression among older adolescents could be due to the fact that the adolescence age is a critical stage of life where important life choices are made, life styles adopted and different levels of independence sort for. The higher prevalence among the older adolescents could also be linked to the higher societal and family expectations from such as better academic performance and better conduct than the younger ones, hence they are more likely to experience more challenges and stressors than the younger adolescents (Oderinde et al., 2018).

Female adolescents and adults are said to be more prone to depression compared to their male counterparts because of hormonal fluctuations related to their reproductive functioning, socioeconomic factors including poverty, gender-based violence and sexual exploitation (Hyde et al., 2008; Oderinde et al., 2018). However, we found no statistically significant difference in the prevalence of depression between males and females in this present study, contrasting with the reports of the researchers who found female preponderance in the prevalence of depression (Meitei & Singh 2019; Hussien et al., 2017; Girma et al., 2021) and those who found male preponderance (Naushad et al., 2014; Subhashini et al., 2018). However, our finding agrees with the report of Chen et al. in China and Oderinde et al. in Western Nigeria who also found no association between gender and being depressed (Oderinde et al., 2018; Chen et al., 2013). These disparities in the prevalence of depression across gender could be associated with differences in society and culture as well as the study instruments.

This study also revealed that a significantly higher proportion of patients with depression resided in the urban areas compared to the rural areas. This finding contrasts with the finding of Oderinde et al. in South West Nigeria who found more adolescents with depression in secondary schools in the rural areas compared to the urban areas (Oderinde et al., 2018). Our finding also contrasts with the report of Ramli et al. in Malaysia who found no significant difference in the prevalence of depression among secondary school students in urban and rural areas (Ramli et al., 2008). The difference between these two studies and ours is

that both previous studies were school-based, while ours is hospital-based.

The explanation for the above observation in our study is that in Nigeria most health facilities are located in the urban areas, making it possible for those in the urban areas to have better access to health care and better health seeking behaviours compared to those in the rural areas. Also, indirectly link to the rural area and perhaps inherent in that is socio-economic status of the families (lower income, lower education level, and unemployment). It may be possible that those living in the rural area may be associated with poorer socio-economic status compared to life in urban areas. However, this was not directly extracted due to incomplete data.

In this present study, severe depression was the most common (57.14%) type of depression found among the patients. This is not surprising because the severe cases of depression will be readily recognized and brought to the hospital for treatment compared to the mild and moderate cases, as this was a hospital-based review study. Contrary to our observation, Khalil et al. reported that majority (54%) of students with depression in secondary schools in Egypt had the sub-threshold depressive state (Khalil et al., 2010). Our finding also differs from the reports of Nabunya et al. in Uganda (Nabunya et al., 2020) and Latiff et al. in Malaysia (Latiff et al., 2016) who found mild depression as the most common type of depression among secondary school students. These previous studies are community-based studies that are aimed at screening for depression among relatively healthy population. It is not surprising that majority of the cases were mild cases.

Another disturbing fact is that when the prevalence of depression in this study was compared within age groups, it was revealed that a higher proportion of the younger adolescents (10 - 14 years) had severe depression compared to the mild and moderate forms. This shows that screening programmes for depression in our environment should begin before the adolescent period to enable early detection of the disease among the children and the institution of early intervention to prevent further progression of the disease.

The results of this study showed that more than half (63.97%) of the patients with severe depression had non-psychotic depression, while 36.03% had psychotic depression. Psychotic major depression differs from non-psychotic major depression in terms of the severity of the symptoms, prolonged course, poor drug compliance due to poor or lack of insight and ultimately poor prognosis compared to the non-psychotic depression. Additionally, psychotic major depression often has suicide ideation and is said to have a higher mortality compared to non-psychotic major depression (Gaudiano et al., 2018; Vythilingam et al., 2003).

Though the prevalence of psychotic depression found in this study is lower than that of non-psychotic depression, it is however much higher than the 5.3% reported by Guadiano et al. in a hospital based study in United States of America (Gaudiano et al., 2018) and 12.5% reported in a population based study carried out in the United Kingdom, Germany, Italy, Portugal and Spain by Ohayon and

Schatzberg (Ohayon & Schatzberg, 2002). The prevalence of psychotic depression found in our study is also lower than the 52.4% reported by Adeosun and Jeje among patients with major depression in a Neuropsychiatry hospital in Lagos, Nigeria (Adeosun & Jeje 2013). The difference between Adeosun's study and ours is that their study was conducted among adults, while ours involved adolescents. Secondly, the neuropsychiatry hospital is a major referral centre for mental illnesses in Nigeria. It therefore follows that majority of their patients will have the most severe forms of mental illnesses.

A previous study reported that being an older adolescent was associated with higher levels of depressive symptoms (Forbes & Dahl, 2005; Ford et al., 2003; Garner et al., 2009) and our finding is in agreement with this report because we found a significantly higher prevalence (81%) of severe depression among the older adolescents. This is not surprising because symptoms of depression tend to progress with age. We equally observed a significantly high ($p = 0.001$) prevalence of severe depression among patients who resided in the urban areas compared to those in the rural areas. The explanation for this is that in addition to having most of the health facilities in Nigeria, the urban areas in most developing countries like Nigeria are associated with higher stress levels which is are known risk factors for depression and other mental illnesses (Srivastava, 2009).

Furthermore, the age of internet and the social media evolution has equally had considerable impact on adolescence and this may contribute to the rising prevalence of mental problems including depression and the adolescents. Many adolescents experience cyberbullying (i.e., bullying via digital media). As digital media use has become the norm, more adolescents are vulnerable to cyberbullying for more hours. Cyberbullying is a significant risk factor for suicidal ideation and attempts and has been identified as a key mediator for the link between social media use and mental health (Sampasa-Kanyinga et al., 2014; Viner et al., 2019). Even if online behavior does not reach the level of cyberbullying, online environments can become uncivil and hence unhealthy more quickly than in-person environments (Krasnova et al., 2015; Anderson et al., 2014; Antoci et al., 2016). Digital media gives the impression of anonymity, which can result in an increase in incivility and aggressive behavior known as the online disinhibition effect (Lapidot-Lefler & Barak, 2012). Social media may also foster unhealthy amounts of social comparison, with users feeling that their lives do not measure up to the lives of others (Chou & Edge, 2012; Garcia-Toro et al., 2013). In particular, social media comparison may increase body image concerns, especially among girls (Lewis et al., 2011; Garcia-Toro et al., 2013).

6. Conclusion

Depression is common among adolescents in our environments; especially severe depression and factors such as increasing age and living in the urban areas are positively associated with having severe depression. We therefore recommend that screening programmes for depression be carried out in our secondary schools to enable early intervention. We also recommend that programmes that

are geared towards the prevention of depression be included in our school health package for young school age children and adolescents.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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