

Influence of Depressive Disorder on Attention among Undergraduate Students of Southern Taraba State, Nigeria

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Abstract: We conducted the study to find out the influence of Depressive Disorder (DD) on attention among undergraduate students of Southern Taraba State. Eighty-four (84) undergraduate students drawn from Wukari and Ibbi Local Government Areas of Taraba State participated in the survey. Subjects filled the Mindful Attention Awareness Scale (MAAS) and the Beck Depression Inventory (BDI). Data collected was analyzed using Pearson's r and the finding showed that there is a significant negative relationship between DD and attention in learning, $r = -.505$, $p < 0.0001$. In the survey sample, the degree of the effects of the levels of depressive disorder (Borderline – Severe) on attention does not significantly differ, $F(3, 49) = 2.668$, $p = 0.058$. Over 63% of the sample was identified as having depressive symptoms ranging from borderline to severe. Following these findings, we concluded that DD negatively affect attention in learning among the study sample and thus, recommended that the university management through the guidance and counselling unit should provide necessary professional psychological help to students that reported the symptoms of DD.

Keywords: Attention, Depressive Disorder, Undergraduate Students.

INTRODUCTION

Human beings experience mood swings; sometimes we are happy, perhaps even euphoric, at other times we feel upset, depressed or even saddened. Such changes in mood are normal part of everyday life.

In some people however, moods are so pronounced and linger on so much that they interfere with their ability to function effectively. Some kinds of moods can cause a person to lose touch with reality and even become life threatening. Such situations of disturbance in emotional experience that is strong enough to intrude on everyday living represent mood disorders. 25-30% of college/undergraduate students experience mild depression [1]. Students who had academic success easily in secondary school and now in university find disappointing grades depressive. Depression is a mood disorder and mood disorders are psychological disorders characterized by emotional extremes, that is, major depressive disorder and bipolar disorder. Mental health workers view psychological disorders as ongoing patterns of thoughts, feelings and actions that are deviant, distressful and or dysfunctional [2]. There has been continuous recurrent community violence in Southern Taraba State since 2013, between herdsmen and farmers. Many undergraduate students in Taraba State University who come from the affected communities have had horrific experiences in the violence, which included among other experiences witnessing helplessly a parent(s) or a

sibling(s) being killed. Some escaped being killed narrowly. Such experiences might affect the psychological wellbeing of those directly affected. Carrying out a study like this that seeks to know the psychological wellbeing of such students after such experiences and its influence on their academic pursuit is appropriate.

The core symptom of a Depressive Disorder (DD) is a persistent sad or low mood that is severe enough to impair a person's interest or ability to engage in normally enjoyable activities. Individuals suffering from DD spend at least two weeks feeling sad, depressed, anxious, fatigued and agitated, experiencing a reduced ability to function and interact with others. The depression ranges from feeling of mild feelings of uneasiness, sadness and apathy to intense suicidal despair. Depressed people find little pleasure and can hardly imagine being happy again. They find it difficult to smile as much as others that are not depressed in occasions of comedies or pleasant pictures [3]. Depressed people show increased response to facial expression of fear and decreased response to happy expression. Depressed people are

sensitive to negative happenings, more often recall negative information and expect negative outcomes [2]. In adults, depressed mood is central to DD, but in children, the persistent mood disturbance may take the form of irritability or hostility.

Depressive Disorder can be very debilitating in part because of other psychological, emotional, social and physical problems that often accompany the persistent depressed mood. People with this disorder may feel worthless, extremely guilty and they may be at risk of harming themselves. Depressive Disorder can affect a person physically by disrupting sleep, sleep and sexual drive. Often, this means difficulty falling asleep or staying asleep, feeling tired all the time and having decreased appetite [4]. However, 40% of people diagnosed with MDD actually sleep and sleep more than usual (referred to as “atypical” depression) [5]. Either way, the changes in sleep and appetite can lead to major problems in attention and concentration and can increase an already overwhelming sense of inadequacy and inclination to withdraw from the world [5]. Depression affects ability to take decisions and sociability. Major depression is an episodic illness. While some people have only one episode in a lifetime, others suffer from multiple episodes separated by periods of normal moods. A single episode according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR), lasts at least two weeks, but often episodes can persist for months and the symptoms of MDD must affect a person’s ability to function in social and work settings [6]. Most depressed persons can identify a stressful event that triggered their first episode of depression. However, later episodes are less and less likely to follow any particular triggering event because it is as if the brain learns how to be depressed and gets better at it [7].

Results of in-depth interviews conducted in the U.S., Italy, Puerto Rico, Taiwan, Lebanon, Germany and France show that the incidence of depression has increased significantly and the likelihood that individuals will experience MDD at some point in their life is three times higher than it was for earlier generations. In addition, people are developing MDD at an increasingly younger age [1]. With each new generation depression is striking earlier (now often in teens) and affects many people [2]. Depression has been called the “common cold” of psychological order – an expression that effectively describes its pervasiveness but not its seriousness. Depressed mood is often a response to past and current loss. Some kind of sadness that we experience after the death of a loved one, loss of one’s job or break in relationship or doing badly in an exam is normal. The disappointment that comes from the kinds of experiences mentioned above is not depression. To feel bad in reaction to profoundly sad events is to be in touch with reality. Depression is a kind of psychic hibernation: it slows us down [3].

The primary age-band of risk for depression is between 18 and 43 with the median age onset around 30 years [8, 9]. However, depression exists across all ages and emerging data suggests that the risk of depression in children, adolescents, people with chronic illnesses and the elderly (especially older people with health problems) is increasing [10]. Studies regarding the rate of depression in adolescents from the underdeveloped world are scarce. The available estimates vary widely between 2.6% and 3.51% based on rating scales and arbitrary cut-off scores [11]. Although the diagnostic criteria are the same, the observable signs of depression may differ, and young people may lack the necessary vocabulary and insight to describe depressed mood. Warning signs could include non-specific physical complaints such as headaches, muscle aches, stomach aches, tiredness, boredom, crying spells, school absence or poor performance, anger or hostility, unexplained irritability, recklessness, social withdrawal, substance or alcohol abuse and relationship difficulties [10]. Throughout childhood, both boys and girls are equally likely to have depression. However, around age 13, rates begin to climb for girls but remain constant or even decreases for boys. By late adolescence, the 2:1 ratio (girls to boys) is established and thereafter remains constant. There is no clear explanation for this developmental sex difference, but biological, psychological and environmental factors may be involved. These factors may include hormones, self-conscious about bodily changes during puberty, poor sense of competence, socio-economic disadvantage, victimization, chronic life stressors, low self-esteem and higher reactivity to stress. Any of these factors may converge to both increase risk and perpetuate mood disturbance in women.

In addition to female sex, high neuroticism (i.e the tendency to be sad, anxious and emotionally reactive) is also associated with depression. Children high on the neuroticism trait may be more vulnerable to major depression (and anxiety disorder) [5, 12]. Hormonal influence on the female brain may be particularly powerful in those with higher neuroticism, thereby increasing their vulnerability to social stress and likelihood to experience depression during and after puberty. Depression often goes unrecognized and untreated in children and adolescents, which is unfortunate because early onset depression often persists, recurs and continues in adulthood [10].

People who are depressed make more negative comments, make less eye contact, are less responsive, speak more softly, and speak in shorter sentences than people who are not depressed [5]. Behaviorally, depressed people show psychomotor agitation or psychomotor retardation. Psychomotor agitation is an inability to sit still, evidenced by pacing, hand wriggling, rubbing, or pulling the skin, clothes or

objects. In contrast, psychomotor retardation is a slowing of motor functions indicated by slowed bodily movements and speech (in particular longer pauses in answering and lower volume, variety or amount of speech [5, 12]. The symptoms mentioned above along with changes in appetite, weight and sleep, are classified as vegetative signs of depression. Sleep changes can involve insomnia or less commonly hypersomnia, which is sleeping more hours a day than normal. Depressed people without doing any much physical work, feel tired, they are less energetic than usual. Sleep irregularities occur mostly a month before a depressive episode and it is particularly notable during the phase when dreams primarily take place, known as rapid eye movement sleep, which is involved in processing emotional memories [5, 10].

When depressed, people often feel worthless and guilt-ridden, they tend to ruminate over past feelings (which they may exaggerate) and negatively evaluate themselves for no objective reason. They may interpret ambiguous statements made by others as evidence of their worthlessness, they blame themselves for their depression and for that fact, cannot function well. Depressed people feel unwarranted responsibility for negative events, to the point of having delusions that revolve around a strong sense of guilt, deserved punishment, worthlessness and personal responsibility for the problems of the world. During depressed episodes, people may report difficulty thinking, remembering, concentrating and making decisions. Note however, that depression is heterogeneous, which means that people with depression experience these symptoms in different combinations. All people with depression [5, 4] share no single set of symptoms.

People can become depressed through different routes, including genetics, traumatic experiences, hormonal problems, substance abuse, head injuries, brain tumors and other illnesses.

- Genetic factors: Some mood disorders have biological and chemical roots. Most evidence show that some forms of DD run in some families. Studies with twins and adopted children indicate moderate degree of heritability for depression. Several genes like one gene that controls serotonin transporter genes have been found to increase the risk of depression. However, the effects of these genes have varied from one study to another [13, 7] and the genes are not specific to depression. The close relatives of someone with depression are more likely than other people to suffer not only depression but also anxiety disorder and other conditions.
- Brain scans: brain scans of those with depressed moods and those with normal mood revealed that a brain area called anterior cingulate cortex was overactive in very depressed patients. When the anterior cingulate cortex is overactive, it allows

negative emotions to overwhelm thinking and mood. Faulty brain structure or function contributes to the onset or maintenance of mood disorders [14]. Depressed brains in one study of people with severe depression, Magnetic Resonance Imaging (MRI) scan found their frontal lobes 7% smaller than normal [2]. Other studies show that the hippocampus, the memory-processing center linked to the brain's emotional circuitry is vulnerable to stress-related damage. Researchers have generally indicated that lack of motivated behaviour in depressed people is because of reduced activity in the frontal lobe and this part of the brain has connection with at least two neurotransmitter systems. The first is norepinephrine, which increases arousal and boost mood, is scarce during depression (but over abundant during mania). The second neurotransmitter is serotonin; it is also scarce during depression [2]. Researchers reported that depression does not simply mean that the brain as a whole has become sluggish. Rather, they found that severe depression is associated with greater activity in the emotion-related limbic system, which fits the idea that emotions are not effectively regulated during depression [5].

- Cognitive habits: Depression involves specific, negative ways of thinking about one's situation. Depressed people believe that their situation is permanent (nothing good will ever happen to me) and uncontrollable. They do nothing to improve their condition and therefore remain unhappy. Depressed people tend to brood and ruminate about everything that is wrong with their lives, persuading themselves that one cares about them. Other theorists go further to suggest that depression results from hopelessness, a combination of learned helplessness and an expectation that negative outcomes in one's life are inevitable. Consequently, they give up fighting aversive events and submit to them thereby producing depression [15]. Clinical psychologist Aaron Beck has proposed that faulty cognitions underlie people's depressed feelings. This theory suggests that depressed individuals view themselves as life's losers, blaming themselves whenever something goes wrong. By focusing on the negative side of the situation, they feel inept and unable to act constructively to change their environment. Their negative cognition leads to feelings of depression [1, 4].
- Personality factors: psychoanalysts hold that early traumatic losses or rejection create vulnerability for later depression by triggering a grieving and rage process that becomes part of the individuals' personality. Subsequent losses and rejection reactivate the original loss and cause a reaction not only to current event but also to the unresolved loss from the past [14, 16, 4]. Individuals who tend

to be sensitive and overreact to negative events are at risk of developing depression. Individuals who base their self-worth on what others say and think of them, that is, those who have a socially dependent personality are prone to being depressed when faced with an end of a close relationship. In the same vein, people who have the need for control put themselves at risk of depression when faced with uncontrollable stressors [17]. Personality traits such as self-esteem, amount of social support and the ability to deal with stressful events are some factors underlying depression [6].

- Violence, childhood physical abuse and parental neglect: repeated exposure to violence in the family and community is associated with depression. Adolescents of both sexes who are exposed to high rate of violence at home or in the community report higher levels of depression and more attempts to commit suicide than those that are not subjected to constant violence [12]. Maltreatment of children and prolonged stress puts the body's response to stress in overdrive, so that it over produces the stress hormone cortisol. Depressed people tend to have high level of cortisol, which can affect the hippocampus and amygdala, causing mood and memory abnormalities.

The causes discussed above so far, combine in different ways with other factors not mentioned here to produce any given case of depression.

Attention

Roediger [18] as cited in Mangal [19] conceptualizes attention as the focusing of perception that leads to a greater awareness of a limited number of stimuli. Attention involves a number of processes; it is more than just noticing incoming stimuli. It involves processes such as filtering out perception, balancing multiple perceptions and attaching emotional significance to these perceptions [20]. Attention is being keenly alive to some specific factor in our environment. Attention involves selecting a particular stimulus of interest out of many stimuli present in the environment [19]. Attention is essentially a process and not a product, it helps in gaining consciousness in the environment and the consciousness or awareness is selective. The concentration or focus provided by the process of attention helps in understanding of the perceived object or phenomenon. Concentration at any one time can be only on one particular object while others are ignored. Attention is determined by emotional and cognitive factors of interest, attitude and striving.

Attention can be active or passive, voluntary or involuntary. The passive or involuntary attention is aroused without the will coming in to play and attention is given to an object without any conscious

effort such as a bright flash, a strong odour, or a sudden loud noise. Attention is active or voluntary when it calls forth the exercise of will. It is neither automatic nor spontaneous and it involves conscious effort. Active attention is a multi-dimensional cognitive process that includes ability to select and focus on what is important at any given moment, the ability to maintain mental effort while performing tasks that require mental energy. Attention is the first step in the learning process. Attention comes before learning and understanding [21]. Some of the key components of attention are:

- Alertness and arousal: alertness is the initial step in the attention process. The human brain needs mental energy to think and that involves being alert and aroused. The part of the brain that controls the ability to become aroused and alert is the Reticular Activating System or RAS. The RAS is located on the brain stem at the back of the neck. The RAS helps in feeling alert and aroused upon waking up in the morning and it allows the feeling tiredness at night so that one can get to sleep [21].
- Selectivity and saliency determination: this is the next step in the attention process. Many stimuli compete for attention at any given moment, because it is impossible to attend to them all at once, decision has to be made to select the ones that are the most important. Attention is the brain selector [19, 21]. The ability to select the important part of a task is called saliency determination and is controlled by the frontal lobes of the brain. The frontal lobes indicate where and how to direct the energy needed to pay attention.
- Distractability: In order to pay attention to salient stimuli, things that distract must be ignored or filtered. Distractions may be visual, auditory, from the human body, or thoughts. Other distractions can come from thinking about past or future events instead of concentrating on the present [21, 22].
- Duration of attention: Once distractions are filtered out, the next thing is to attend to what is, decision is made to pay attention for the right length of time i.e not too long and not too short. This is called duration attention. This involves staying focused. For this to be possible consistent mental energy is needed and for the right amount of time. Some tasks take more energy than others do. Students have tasks they like and that are easy and they have tasks that they do not like and are hard to do. Harder tasks take more energy to do. The part of the brain that controls ability to maintain mental energy for sufficient amount of time is the frontal lobes [21]. Attention can be affected by internal factors such as interest, mindset and motives and it can be affected by external factors like nature of stimulus, repetition of stimulus and intensity and size of the stimulus.

Attention is the process of prioritizing and applying information and concepts. The end dynamic of these two processes involves distribution of energy, priorities and decision-making. Once information is absorbed if there is an attention deficit, the brain fails to prioritize information and the student will be unable to apply concepts learned in school. The student might lack the ability to absorb information or the student might absorb the information but lack the ability to apply it [22].

Unfortunately, depression is associated with several types of cognitive deficits and one area of deficits is in attention. An inability to focus in depression is common. In fact, “diminished ability to concentrate or pay attention” is an official, diagnostic symptom of depression in the most recent version of the Diagnostic and Statistical manual of mental Disorders (DSM-S). Combined with other common depression-related cognitive deficits, like impairment in memory and thought processing speed, depression and attention problems can make learning and retaining information very difficult. The causes of attention problems during depression are not specifically known but it may be because of the gray brain matter shrinkage, which is typically present in major depressive disorder. What is known is that people with major depressive disorder experience concentration problems, both in youths and adults (America’s Mental Health Channel). Fatigue, which is another symptom of depression, may also play a role in negatively affecting attention span. Anything that require sustained attention- like reading a book, studying school notes, engaging in an in-depth conversation, paying attention to a set of instructions, directions, is affected by depression. Moreover, because depression causes attention problems, projects are left half-done and unfinished. Unfortunately, the person with the depression may view this as a weakness on his part rather seeing it as a symptom of depression (America’s Mental Health Channel).

There has been a persistent violent conflict in southern Taraba State with occasional peaceful interludes between herdsmen and farmers. This vicious conflict between herdsmen and farmers started since 2013. The violence has left more than a thousand

people dead, hundreds badly injured, thousands displaced and a colossal destruction of properties [23]. Herdsmen have repeatedly attacked and killed farmers in their villages. There are students in Taraba State University who come from the affected communities. Some have had their loved ones killed before their very eyes, many are displaced, some have become the main breadwinners of their families after losing significant others in the violence. Some are struggling with their studies and even contemplating quitting school. Having encountered some of these students, some questions bog the mind of the researcher- could some of these students be suffering from depression without knowing it? How are the students able to attend to what they learn in school? Finding answers to these questions form the crux of this study.

METHODS

This study used the survey design. We collected data using the Beck [24] Depression Inventory (BDI), and the Mindful Attention Awareness Scale (MAAS) by Brown and Ryan [25]. The MAAS has fourteen items, which seek assessed how frequently or infrequently one is able to be aware of daily life experiences. The BDI has twenty-one items, which measures characteristic attitudes and symptoms of depression. We gave the two instruments to senior lecturers in the Faculty of Education to face validate the questionnaire items for suitability in the study area. We pilot tested the questionnaires to establish their reliability using students from a different area. The reliability index found for the BDI was 0.81 and that of the MAAS was 0.80. We administered the instrument to a random sample of 84 students drawn from a population of 500 undergraduate students from Wukari and Ibbi Local Government Area of Taraba State. We selected these two local governments for the study because they are worst hit areas by the violence between herdsmen and farmers in Southern Taraba. Out of the 84 students who filled the questionnaires given to them, 53 reported symptoms of depression ranging from borderline to severe. Final analysis of the data collected from depressed students was done using Pearson’s *r* and one-way analysis of variance. We analysed the data using the 0.05 level of significance.

RESULTS

Table-1: Classification of Respondents Based on Severity of Depression

Parameters	Frequency	Percent
Borderline	2	3.8
Moderate	8	15.1
Severe	30	56.6
Extreme	13	24.5
Total	53	100.0

Table-1 showed the frequency and percentage of respondents based on severity of depression. It

showed that only 2(3.8%) respondents had borderline depression symptoms. There were 8 (15.1%) who

reported moderate level of depressive disorder. In addition, 30(56.6%) reported severe level of depressive disorder, while 13(24.5) reported extreme level of

depression. Generally, over 80% of the respondents reported severe to extreme level of depression.

Table-2: Mean response and standard error of depressive disorder and attention of undergraduate students

Source of variation	Mean	Std. Error	Lower limit	Upper limit
DD	35.8679	0.906371	34.0492	37.6867
MASS	34.0943	0.981788	32.1242	36.0644

Table-1 showed the mean response and standard error of depressive disorder and attention of undergraduate students. The mean for DD was 35.867 ± 0.906 (95%CI = 34.049 - 37.686 while mean for MASS was 34.094 ± 0.981 (95%CI = 32.124 - 36.064). The mean for DD falls within the level categorized as showing symptoms of the disorder just

as attention level (score) falls within the problem region as well.

To assess whether there is a significant relationship between DD and MASS, we carried out a correlational analysis using Pearson Product Moment of Correlation. The result is presented in the subsequent table.

Table-3: correlation between DD and MASS among undergraduate students

Source of variation		DD	MASS
DD	Pearson Correlation	1	-.505**
	Sig. (2-tailed)		.000
	N	53	53
MASS	Pearson Correlation	-.505**	1
	Sig. (2-tailed)	.000	
	N	53	53

** . Correlation is significant at the 0.01 level (2-tailed).

Table-2 showed the correlational analysis between DD and MASS. The result revealed that there is a significant negative relationship between DD and MASS among undergraduate students of Southern

Taraba State University, $r = -.505$, $p < .0001$. The interaction is strong suggesting that an increase in DD would result to strong decrease in attention level.

Table-4: Mean attention of respondents based on severity levels of depressive disorder

Parameter	n	Mean	Variance	95% Credible Interval	
				Lower Bound	Upper Bound
Borderline	2	40.500	24.293	30.800	50.200
Moderate	8	37.125	6.073	32.275	41.975
Severe	30	34.600	1.620	32.095	37.105
Extreme	13	30.077	3.737	26.272	33.882

Table-4 showed mean variation of depressive respondents on attention. The 2 respondents who reported borderline level of depression had a mean attention of 40.500 ± 24.293 (95%CI = 30.800 - 50.200), those on moderate depression reported a mean

attention of 37.125 ± 6.073 (95%CI = 32.275 - 41.975) and respondents with severe depression reported a mean of 34.600 ± 1.620 (95%CI = 32.095 - 37.105). Students with extreme depression reported a mean of 30.077 ± 3.737 (95%CI = 26.272 - 33.882).

Table-5: One-way analysis of variance on attention of respondents based on severity levels of depressive disorder

MASS	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	373.030	3	124.343	2.668	.058
Within Groups	2283.498	49	46.602		
Total	2656.528	52			

A one-way ANOVA was used to assess differential effects of levels of depressive disorder on attention. The result showed there is no significant

differential effects of levels of depressive disorder on attention, $F(3, 39) = 2.668$, $p = .058$ implying that

borderline to extreme level of depression affects undergraduate students attention at the same rate.

DISCUSSION

The result of the analysis of data collected showed that statistically, there is a significant negative relationship between Depressive Disorder (DD) and attention in learning among undergraduate students of Southern Taraba State. The relationship was strong suggesting lower attention level with higher levels of depressive disorder. Previous outcome reported by Sommerfeldt, Cullen, Han, Fryza and Klimes-Doughan [26] on executive attention impairment in adolescents with major depressive disorder corroborate the finding of this study. Sommerfeldt *et al.*, [26] found out that among African-Americans, Asian-Americans, Native Americans and the Hispanic Americans of the University of Minnesota, major depressive disorder influenced attention as those who were depressed showed impaired executive attention by a slower processing of conflict, that is, a slower reaction time on the executive attention scale of the attention network task. In the same vein, Beevers, Clasen, Enock & Schnyer [27] in their study on attention bias modification for major depressive disorder among young adults and the found that attention bias sustains depression, however, major depressive disorder affects the ability to pay attention.

The finding also showed no differential effects of severity of depressive disorder on attention in learning. All respondents reported higher attention problem. The finding of Sommerfeldt *et al.*, [26] supports this finding as they reported a significant breakdown in the attention of depressed subjects in their study. The information processing capacity of the depressed sample was found to be slow. DeRoma [28] in a study on the relationship between depression and college academic performance of undergraduate and graduate students of psychology found that a significant negative relationship exist between depression and academic performance. Those depressed demonstrated lower performance within academic environment compared to those with normal and minimal depression. If academic performance is affected by depression, it means that the attention needed to excel in learning was deficient.

CONCLUSION

Based on the findings of this study, we concluded that depression negatively influences undergraduate student's ability to pay attention in learning and therefore call for increased attention and efforts by the university management to help depressive students take back their lives.

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