

SLEEP DISORDERS AS PREDICTORS OF AFFECTIVE AND SOMATIC SYMPTOMS OF MILD DEPRESSION

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ABSTRACT

The study investigated sleep disorders as predictors of affective and somatic symptoms of mild depression among Undergraduates in Imo State. The design of the study was correlation design. Four hypotheses guided this study. 443 participants were selected through random sampling technique. They were between the ages of 21 and 39 years with mean age 31.60 and standard deviation age of 3.40 with unequal gender (males =179 and females=264). Their marital status included 24 married males and 155 single males, while married females were 38 and 226 were single females. Instruments used were Beck's Depression Inventory (BDI-II) and Sleep Disorder Symptoms Checklist (SDS-CL). A Correlation Design and Multiple Regression Analysis were employed to analyze the data. Results indicated that at $p < 0.01$ Sleep Apnea and Insomnia were significant predictors of mild depression symptoms among undergraduates in Imo State, while at $p < 0.05$ Restless Legs Sleep Syndrome significantly predicted mild depression. However, at 0.05 and 0.01 levels of significance, Narcolepsy did not significantly Predict Mild Depression symptoms among Undergraduates in Imo State. The study suggested that Sleep Apnea, Insomnia and Restless Legs Sleep Syndrome were significant predictors of both affective and somatic symptoms of mild depression among undergraduates. It also recommended among others that undergraduates should not find it difficult to discuss their sleep problems with their doctors, clinical psychologists and counselors for proper attention in order to present their undiagnosed depression generate into moderate and severe depression.

1.0 INTRODUCTION

Depression is becoming so rampant in the 21st century and as such, the situation is becoming so worrisome. The rate at which young people especially the undergraduates manifest symptoms of depression is alarming. Australian Bureau of Statistics (2008) states that depression is a serious illness that leaves one feeling downcast most of the time and finding it hard to cope with day to day activities. Statistics shows that around 160, 000 young people aged 16-24 years live with depression. So, it is a common illness. Girls are more likely than boys to get depression, but boys often find it harder to talk about their feelings and get help. Depression is the most common mental health problem for young people. Around one in five young people will have experienced depression by time they reach adulthood (Australian Bureau of Statistics, 2008).

Similarly, Murray, Buttner and Prince (2012) state that depression is a state of low mood and aversion to activity that can affect a person's thoughts, behavior, feeling and sense of

wellbeing. Depressed people may feel sad, anxious, empty, hopeless, worried, helpless, worthless, guilty, irritable, hurt or restless. They may lose interest in activities that once were pleasurable, experience loss of appetite or overeating, have problem concentrating, remembering details or making decision, and may contemplate or attempt suicide. Insomnia, excessive sleeping, fatigue, loss of energy or aches, pains or digestive problems that are resistant to treatment may also be present (Murray Buttner & Prince, 2012).

Depression according to Tsuno and Ritchie (2005) refers to a whole body illness that affects a person's physical health as well as how he or she feels, thinks and behaves towards others. In addition, a person who suffers from this disorder may have problems eating, sleeping, working and getting along with his or her friends. But the severity and long duration can indicate a clinical depression. Clinical depression is a persistent, depressed mood that is often characterized by feeling of sadness or emptiness.

People who have depression or major depressive disorder experience at least five of the Diagnostic and Statistical Manual of Mental Disorders (DSM IV-TR) depression criteria. These criteria include: depressed mood most of the day, diminished interest or pleasure in all or most activities, significant unintentional weight loss or gain, insomnia or sleeping too much nearly every day, agitation or psychomotor retardation nearly every day, noticed by others and loss of energy. Others are feeling of worthlessness and guilt, diminished ability to think or concentrate, or indecisiveness and recurrent thoughts of death (not just fear of dying), recurrent specific plan, or a suicide attempt or a specific plan for committing suicide.

Concurring, Uwaoma (2002) states that depressed people feel sad, helpless, despair and hopeless, guilty and has low self-esteem, self-blame, retarded psychomotor activities and reduced mental ability. They are always involved in chronic fatigue, restlessness, listlessness, weight loss and reduced sex drive. There is anxiety, irritability, obsessive-compulsion, rigidity, and immobility, demands (excessive) for attention and love, impairment of concentration, suicidal ideas and thoughts, loss of interest in people and usual social activities and self-castigation. Studies show that students are exposed to many stressors, which can trigger off depression. Ayeni (2005), states that many students are daily exposed to many stressors and are therefore prone to depression without knowing it. Adewuya, Ola, Aloba and Mapayi (2006) state that the factors significantly associated with depressive disorder in students include accommodation, very large family size, female gender, heavy cigarette smoking and level of alcohol consumption. According to Rod (2002), individuals with socially dependent personality are more vulnerable to becoming seriously depressed when faced with a particular kind of life stressor, namely the failure of a close personal relationship or friendship. Individuals with achievement personality are more vulnerable to becoming seriously depressed when faced with a different kind of life stressor, namely the failure to meet or reach one of their cherished goals (Rod, 2002).

Also, sleep deprivation and certain sleep disorders have been implicated in depression. Among such sleep disorders are, insomnia, sleep apnea, restless leg syndrome and narcolepsy. According to the American Psychiatric Association (2002), sleep disorders are major disturbances of normal sleep patterns that lead to distress and disrupt functioning during the day. Not only are sleep disorders extremely common, affecting virtually everyone at some points in their lives, but they can also lead to serious stress and other health consequences.

Sleep disorders are also defined as a group of syndrome characterized by disturbances in the patient's amount of sleep, quality or timing of sleep or in behaviors or psychological conditions associated with sleep (Moe & Alan, 1997). College students are particularly susceptible to patterns of sleep disturbances and poor sleep due to physiologic changes, academic workload and psychosocial concerns (Pilcher, Ginter & Sadowsky, 1997). Bawo and Omoregba (2011) painted the picture clearer when they stated that a sizeable proportion of students experience poor quality sleep. Poor sleep quality impairs academic performance and is associated with an increased risk of depression.

The relationship between mild depression and sleep disorders is quite a complex one, as depression may lead to sleep problems and on the other hand, sleep disorders may lead to the development of symptoms of depression (National Sleep Foundation, 2013). Sateia (2014) of the University of Maryland Medical Center, define sleep disorders as problems with sleeping, including trouble falling or staying asleep, falling asleep at the wrong times, too much sleep or abnormal behavior during sleep. Avidan and Zee (2006) describe insomnia as a sleep disorder of difficulty initiating or maintaining sleep. People with insomnia have one or more of the following symptoms: difficulty falling asleep, waking up often during the night and having trouble going back to sleep; waking up too early in the morning; having unrefreshed feeling after sleep, etc. Acute insomnia can last from one night to a few weeks. Insomnia is said to be chronic when a person has insomnia at least three nights a week for a month or longer (Avidan & Zee, 2006). They explained that sleep apnea is a serious sleep disorder that occurs when a person's breathing is interrupted during sleep. People with sleep apnea stop breathing while they are asleep for between just a few seconds up to a minute. This causes a buildup of carbon dioxide in the blood. The heart then begins to pump harder to try to remove the carbon dioxide from the blood. This adds a great deal of stress on the heart when it occurs repeatedly. People with untreated sleep apnea stop breathing repeatedly during their sleep, sometimes hundreds of times during the night. There are two types of sleep apnea: Obstructive Sleep Apnea and Central Sleep Apnea. Obstructive sleep apnea (OSA) is caused by a blockage of the airway, usually when the soft tissue in the rear of the throat collapses during sleep. In Central Sleep Apnea, the airway is not blocked but the brain fails to signal the muscles to breathe due to instability in the respiratory control center. This type is called central apnea because it is related to the functioning of the central nervous system.

Sleep disorder has been found to be a predictor and a risk factor for depression (Okorome, 2010). Unfortunately, most Nigerian undergraduates may suffer from sleep disorders, especially insomnia as a result of harsh conditions they are exposed to while schooling. Some of those harsh conditions are scarce hostel facilities, financial problems, intimidating attitudes of lecturers and fellow students, poor teaching on campus and most especially, frequent industrial actions (strikes) among lecturers. These may expose students to sleep disorders. Gradually, leading into depression and affecting their performances at school and relationship with others. Worse still, if the situation is not properly managed; it could devastate students and render them maladjusted in life.

Furthermore, depression is common among Nigerian university students (Adewuya et al, 2006). They may have feelings of worthlessness, guilt, difficulty thinking or concentrating on their works and difficulty sleeping when they want to sleep. Studies have proven that depression interferes with the victim's daily responsibilities and relationship. No wonder, most

students are irresponsible and uncooperative at school, thus, Adeniyi, Okafor and Adeniyi (2011) stated that a sizeable burden of depression and low physical activity existed among the studied adolescents and these were linked to both individual and school factors. It is against this backdrop that the researcher sought to ascertain sleep disorders as predictors of affective and somatic symptoms of mild depression among undergraduates in Imo State with a view to finding solutions to the problems.

Restless Legs Syndrome (RLS) is a disorder that causes a strong urge to move the legs. This urge to move often occurs with strange and unpleasant feelings in the legs. Moving the legs relieves the urge and the unpleasant feelings. People who have RLS describe the unpleasant feelings as creeping, crawling, pulling, itching, tingling, burning, aching or electric shocks. Sometimes, these feelings occur in the arms. The urge to move and unpleasant feelings happen when resting and inactive. Thus, they tend to be worse in the evening and at night (Avidan & Zee, 2006).

Narcolepsy is a disorder that causes a person to have difficulty staying awake in extreme cases: Narcolepsy can cause a person to suddenly fall asleep during the day. These "sleep attacks" occur even after getting enough sleep at night. The unusual sleep pattern that people with narcolepsy have can affect school, work and social life, noted by MetroHealth Center for Sleep Medicine (2012). There are 2 main types of sleep, namely: Non-Rapid Eye Movement Sleep and Rapid Eye Movement Sleep. When people fall asleep they go into Non Rapid Eye Movement (NREM) sleep for the first 60-90 minutes before going through a period of Rapid Eye Movement (REM) sleep when dreaming actually occur.

People with narcolepsy have a different sleep pattern. They often fall directly into REM sleep before the usual block of NREM sleep. Narcoleptics often find that certain aspects of REM sleep can happen while they are awake or during transition between sleep wakefulness. Studies have shown that RLS is caused by dopamine deficiency (Allen & Earley, 2001). Medications that increase levels of the neurotransmitter dopamine may relieve RLS symptoms. Besides, people with an iron deficiency or anemia are more likely to develop restless legs syndrome. Iron supplements can sometimes eliminate the symptoms of RLS. Decreased iron levels may lead to abnormalities in the dopamine neurotransmitter system (Allen & Earley, 2001). According to Abetz, Allen and Follet (2004), RLS runs in families in at least half the people with RLS, especially if the condition started at an early age. Researchers have identified sites on the chromosomes where genes for RLS may be present. Secondly, that iron deficiency can cause or worsen RLS. If you have a history of bleeding from your stomach or bowels, experience heavy menstrual periods, or repeatedly donate blood, you may have iron deficiency.

Epinephrine, also known as adrenaline high levels can cause sleep difficulties, anxiousness and attention issues. Norepinephrine, also known as noradrenaline, low levels can lead to lack of energy, lack of focus, lack of motivation and low mood (depression) Serotonin, primarily responsible for regulation of moods, sleep, appetite and pain perception. Low levels cause low mood (depression), sleep difficulties (Riemann, 2001). GABA (Gamma-Amino Butyric Acid) is the primary inhibitory neurotransmitter in the brain and is necessary to experience feelings of calmness and relaxation. High levels can cause sleep difficulties (insomnia) while low levels can cause severe sleep difficulties (insomnia), (Riemann, 2001).

Individual students experiencing any sleep disturbance may develop depressive symptoms. For instance, according to an article by National Sleep Foundation (2013), people with insomnia may have a tenfold risk of developing depression compared with those who sleep well. Sleep disorders may give rise to symptoms of depression among people, even undergraduates.

Sleep disorders can cause significant health problems and may remain undiagnosed among the victims. Insomnia, restless leg syndromes (RLS), sleep apnea and narcolepsy have been a few of the conditions which contribute to sleep deprivation or disturbance and it makes the individual not to feel refreshed and restored when he or she wakes up. Honestly, the researcher quite believes that sleep is very essential for good health while inadequate sleep may lead to fatigue, difficulty in concentration, illness, sadness, guilt, etc. It is based on the above fact therefore that this study seeks to investigate sleep disorders as predictors of affective and somatic symptoms of mild depression among undergraduates in Owerri.

The following hypotheses guided the study:

1. Insomnia will significantly predict mild depression (affective and somatic) symptoms among undergraduate students in Imo State.
2. Legs sleep syndrome will significantly predict mild depression (affective and somatic) symptoms among undergraduate students in Imo State.
3. Sleep Apnea will significantly predict mild depression (affective and somatic) symptoms among undergraduate students in Imo State.
4. Narcolepsy will significantly predict mild depression (affective and somatic) symptoms among undergraduates in Imo State.

2.0 METHOD

The design of this study was a correlation survey design with one Independent Variable (IV), Sleep Disorders while the Dependent Variable (DV) is mild depression. This design was found suitable for the study since it indicated a predictive relationship between the independent variable (sleep disorders) and the dependent variable (mild depression).

The population of the study consist of the all the 200 level students of the Faculty of Education, Imo State University students and the School of Education, Alvan Ikoku Federal College of Education, Imo State. The sample consisted of 443 participants that were selected through random sampling technique. They were between the ages of 21 and 39 years with mean age 31.60 and standard deviation age of 3.40 with unequal gender (males =179 and females=264). Their marital status included 24 married males and 155 single males, while married females were 38 and 226 were single females.

The instruments that were employed in the study are Beck's Depression Inventory –II (BDI-II) and Sleep Disorder Symptoms Checklist (SDS-CL). The Beck's Depression Inventory – II (BDI-II) was developed by Aaron .T. Beck and was published in 1996. BDI-II consists of twenty - one (21) items which is used to assess the intensity of depression in clinical and normal patients. Each item has a list of four statements arranged in increasing severity about a particular symptom of depression which ranges from "0" (symptom not present) to"3" (symptom very intense). The total score of 0-13 is considered minimal range, 14-19 is mild, 20-28 is moderate and 29-63 is severe. The BDI-II has two subscales: Affective subscale

(symptoms) and Somatic subscale (symptoms). The Affective subscale has only eight (8) items (items 2-9). They are; pessimism, past failure, guilt feelings, punishment feelings, self-dislike, self-criticalness, suicidal thoughts or wishes and worthlessness. The Somatic Subscales consists of the other thirteen (13) items: sadness, loss of pleasure, crying, agitation, and loss of interest, indecisiveness, loss of energy, change in sleep patterns, irritability, and change in appetite, concentration difficulties, tiredness and/or fatigue and loss of interest in Sex (Beck, Steer, Ball & Ranieri, 1996).

The Beck's Depression Inventory-II (BDI-II) and Sleep Disorders Symptom Checklist questionnaires were administered to them. The researchers instructed them on how to respond to the BDI – II and SDS-CL questionnaires. The instruments measured mild depression and sleep disorders respectively. The participants on completion of the instruments returned them to the researchers.

The BDI has been tested for content, concurrent and construct validity. High concurrent validity ratings were given between the BDI and the other depression instruments as the Minnesota Multiphase Personality Inventory and Hamilton Depression Scale; 0.77 correlation rating was calculated when compared with inventory and psychiatric ratings. The BDI has also shown high construct validity with the medical symptoms it measures. Beck's study reported a coefficient alpha rating of .92 for outpatients and .93 for college student samples. The BDI-II positively correlated with the Hamilton Depression Rating Scale, $r=0.71$, had a one-week test and retest reliability of $r=0.93$ and an internal consistency of .91 (Beck & Steer, 1984). The BDI has good psychometric properties in screening for depression in adolescents. At a cut off score of 18 and above, the BDI has a sensitivity of 0.91, specificity of 0.97, positive predictive value (PPV) of 0.88 and a negative predictive value (NPV) of 0.98 (Adewuya, Ola & Aloba, 2007). The prevalence of major depressive disorder (MDD) in Nigerian adolescents is comparable to those in Western culture and the BDI is a valid instrument for screening depression among Nigerian adolescents (Adewuya, et al, 2007).

The Sleep Disorders Symptoms Checklist (SDS-CL) was developed by Perlis, Jungquist, Smith and Rosner (2005) to assess sleep disorders including Restless Legs Syndrome (RLS), Narcolepsy, Sleep Apnea and Insomnia. SDS-CL consists of twenty-three (23) items. To ascertain the reliability and inter-item correlation of the Sleep Disorders Symptoms Checklist (SDS-CL) for Nigerian use, a pilot study was carried out using 50 undergraduate students in Imo State that were not among the participants. Following the item analysis carried out, three items (items 4, 5 and 22) were removed as they did not achieve the minimum Corrected item-total correlation of .31. A Cronbach alpha reliability coefficient of 0.91 was obtained for the 20-items which were subsequently used for the study. To confirm the validity of the SDS-CL among Nigerian participants, a convergent validity of 0.44 ($p = .001$) was obtained by correlating the SDS-CL by Perlis, Jungquist, Smith and Rosner (2005) with Pittsburgh Sleep Quality Index (PSQI) by Buysse, Reynolds, Monk, Berman and Kupfer (1989). That confirms that the Sleep Disorders Symptoms Checklist (SDS-CL) is a reliable and valid instrument for use among Nigerians.

The statistic the researcher used in analyzing the data was Multiple Regression Analysis. This is because it helped to identify a predictive relationship between one of the levels of the independent variables and the dependent variable which was mild depression.

For ethical considerations, the researcher briefed the participants on what the research was about and then, asked for their consent. They agreed to participate in the study by ticking "YES" in the space provided in the questionnaire used for the study. Participants were told at the beginning of the study that they had the right to withdraw from the study if they do not want to continue. Information gained from them were kept anonymous. Besides, there was no provision for participants' names in the questionnaire used for the study. At the end of the study, participants were given a general idea on the purpose of the study. Participants asked questions which were answered by the researcher.

3.0 RESULTS

Table 1: Standard Multiple Regression Analyses on the Contributions of Sleep Disorders (Insomnia, Restless Legs Syndrome, Sleep Apnea and Narcolepsy) to the Prediction of Depression (Affective and Somatic Symptoms)

| Predictors | R | R ² | Adj. ² | ΔF | Df | B | T | P |
|--------------------|-----|----------------|-------------------|------------|--------|------|-------|--------------------|
| | .28 | .08 | .07 | 8.93 | 4, 438 | | | |
| Insomnia | | | | | | .135 | 2.883 | .004** |
| RLS | | | | | | .106 | 2.140 | .033* |
| Sleep Apnea | | | | | | .160 | 3.210 | .001** |
| Narcolepsy | | | | | | .021 | .434 | .664 ^{NS} |

Note: Dependent Variable: Depression, ** = Significant at $p < .005$, * = Significant at $p < .05$, NS = Not Significant.

The data in table 1 above showed the predictive strength of the variables studied. The overall model explained a significant proportion of variance in undergraduates depression scores [$R^2 = .08$ $F(4, 438) = 8.96$, $p < .001$].

The first hypothesis was accepted as shown in Table 1 above indicating that undergraduate's scores on insomnia significantly and positively predicted their mild depression symptoms scores [$B = .135$, $t(4, 438) = 2.883$, $p < .005$]. This implies that insomnia is a significant predictor of mild depression (affective and somatic symptoms) among undergraduates in Owerri.

Similarly, the second hypothesis was accepted as shown in Table 1 above. Undergraduates' scores on Restless Legs Sleep Syndrome significantly and positively predicted their mild depression symptoms scores [$B = .106$, $t(4,438) = 2.140$, $P < .05$]. The result indicates that increases in Restless Legs Sleep Syndrome results to incidences of mild depression syndrome (affective and somatic symptoms) among undergraduates in Owerri.

In the third hypothesis, Table 1 shows that Sleep Apnea is the strongest predictor of mild depression among undergraduates in Owerri [$B = .160$, $t(4, 438) = 3.210$, $p < .005$] controlling 16% (Beta Weight = .160) of the variance explained by all variables in the model. This implies that sleep apnea is the strongest predictor of mild depression symptoms among undergraduates in Owerri.

However, the fourth hypothesis is rejected as Narcolepsy did not significantly predict mild depression symptoms among undergraduates [$B = .021$, $t(4, 438) = .434$, $p > .05$]. It however showed a positive relationship, though not significant, with mild depression.

4.0 DISCUSSION

From the analyses of results, four hypotheses were tested. The first which states that “Insomnia will significantly predict mild depression (affective and somatic) symptoms among undergraduate students in Imo State was accepted. Based on the finding of this work, insomnia is a significant predictor of mild depression symptoms (affective and somatic) among undergraduates. The finding is in support with Baglioni (2013) which found that individuals with insomnia have an increased probability of manifesting depression after one year or more as compared to healthy individuals.

The findings also supports Simon (2011) that non-depressed individuals with insomnia have double the chance of developing depression in the future, compared with those that reported no sleep difficulties. Besides, Weissman (1997) stated that, insomnia is a reliable predictor of depression and many other psychiatric disorders including all types of anxiety disorders. However, the finding did not support an earlier study by Marlene (2007) which found that insomnia is a risk factor for developing anxiety, but not for developing depression. No relationship was seen for insomnia and depression, although having insomnia was associated with coexisting depression. Both short and long sleep duration, but not insomnia has been found to be important predictors of depression (Josine, Witte, Eus, Vogelzangs & Brenda, 2014). Also, Tomasulo (2012) stated that you may have insomnia and no significant depression. About 15% of people have insomnia without being diagnosed with depression. This result could be based on the fact that insomnia (difficulty initiating or maintaining sleep) among undergraduates could signal both the affective and somatic symptoms of mild depression. The individual undergraduate may have feeling of being punished at school or at home, feeling of guilt, self-dislike, pessimistic towards him or herself.

The second hypothesis which states that “Restless legs sleep syndrome will significantly predict mild depression (affective and somatic) symptoms among undergraduate students was accepted. The findings suggested that restless legs sleep syndrome is a significant predictor of the affective and somatic symptoms of mild depression among undergraduates in Imo State.

The third hypothesis which states “Sleep Apnea will significantly predict mild depression (affective and somatic) symptoms among undergraduate students” was accepted. The result indicates that Sleep Apnea is a strong predictor of the symptoms of mild depression among undergraduates. The finding supported Schimelpfening (2010) study that Sleep Apnea patients have the greatest risk for depression and should be screened for this condition. Rubin (2012) recorded that snorting, gasping, or short interruptions in breathing during sleep may be linked to depression symptoms. The more frequently people snort, gasp or stop breathing for short

periods of time while asleep, the more likely they are to have symptoms of depression, according to a government study of nearly 10,000 adults released. Besides, Yamamoto et al (2000), found that among 41 patients with severe OSA, 63 % reported depression utilizing Zung Depression Rating Scale (ZDRS).

In contrast to the finding, Pillar and Ravie's (1998) study found no relationship between OSA and depression. Besides, a five year longitudinal study of elderly patients with mild Obstructive Sleep Apnea (OSA), reported no difference in prevalence of depression when compared to be without OSA (Phillips et al, 1996). The finding implies that undergraduates who experience loud snoring, gasping or snorting, frequent pauses in breathing during sleep are at a higher risk of developing mild depression symptoms. A plausible reason for this finding could be reduced supply of oxygen to the brain and interrupted sleep especially at night, among undergraduates. These factors could expose them to symptoms of depression.

However, the study failed to accept the fourth hypothesis which states that "Narcolepsy will significantly predict mild depression (affective and somatic) symptoms among undergraduates". This implies that Narcolepsy is not a significant predictor of mild depression symptoms among undergraduates. Consequently, the finding did not support Peter, Dodel and Spottke's (2007) study that reported rates of depression in people with narcolepsy ranging from 30-57% in the general population; the prevalence of depression is 8%. Furthermore, narcolepsy can disrupt life to the extent that it may lead to depression and anxiety (Lawrence & Jeanne, 2013). Reynolds et al (1983) also noted that depression has been reported to be frequent in narcolepsy and has been considered to be variously a reaction to sleepiness or an endogenous expression of the pathophysiology of narcolepsy. The findings of this work could be based on the fact that narcolepsy as a sleep disorder does not predict affective and somatic symptoms of mild depression among undergraduates. Students who suddenly fall asleep during the day may not have significant mild depression symptoms (affective and somatic).

Further implication indicates that a successful management of sleep disturbance among undergraduates will help to improve better quality of life in them. This is because those who receive treatment or good management of insomnia, RLS and sleep apnea will show improvement in their depression. Undergraduate students should realize that disturbances in their sleep can deprive those good and quality of life during the day. Sleep problems such as trouble falling or staying asleep and chronic snoring make the undergraduates feel depressed. Also, insomnia and sleep apnea among undergraduates are usually accompanied by undesirable daytime consequences. Such consequences may include difficulty thinking or concentrating on their daily activities, decrease daily relationship with others and their academic performances and low level of academic performance. When they are depressed, it affects the undergraduates' daily relationship with others and their academic performances.

The findings of the study also reveal to our undergraduates not to find it difficult to discuss their sleep problems with their doctors, clinical psychologists and counselors for proper attention, lest their undiagnosed depression (mild) generate into moderate and severe depression. The present study is also of great benefits to the government and educators. They should understand that undesirable and harsh learning conditions of the undergraduates which contribute to their sleep disorders such as insomnia and make students to experience worry and

anxiety which cause sleeping problems in them. These gradually make them become depressed which if it is not properly managed could ruin their lives and future.

5.0 CONCLUSION

The results of this study suggest that Sleep Apnea, Insomnia and Restless Legs Syndrome are significant predictors of affective and somatic symptoms of mild depression among undergraduates. The result indicates that sleep apnea is a strong predictor of the symptoms of mild depression among undergraduates in Imo State. However, narcolepsy is not a significant predictor of mild depression symptoms (affective and somatic) among undergraduates in Imo State.

5.1 Recommendations

The study recommends as follows:

- Undergraduates should not find it difficult to discuss their sleep problems with their doctors, clinical psychologists and counselors for proper attention in order to prevent their undiagnosed depression from escalating into moderate and severe depression.
- The study recommends that Nigerian Government and managers of higher education in Nigeria should promptly address issues that may lead to industrial actions by the staff and riots by students. It is common knowledge that strikes and riots distort the academic calendar of higher institutions and leave students in deplorable conditions that may trigger off depression.
- Government and other stakeholders of education should ensure that the infrastructures in tertiary institutions are modern and technologically sound. Anything short of this, may affect students' adjustment and normal sleep pattern, thereby exposing them to depression.
- School environment should be rid of things that can constitute stressors to students. Their accommodations should be very conducive for learning and also free from every form of intimidation. This will help students to feel relaxed and sleep well when they want to sleep.
- The study also recommends that undergraduate students with sleep disorders such as restless sleep disorder and narcolepsy should be advised to avoid the behaviours that can trigger and predispose them to sleep disorders.

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