

**PSYCHOACTIVE SUBSTANCE ABUSE, WORK HOURS AND  
TASK STRUCTURE AS PREDICTORS OF STRESS  
SYMPTOMS AMONG INDUSTRIAL WORKERS**

**Richards E. Ebeh<sup>1\*</sup> & Ethelbert C. Njoku<sup>1</sup>**

<sup>1</sup>Department of Psychology, Imo State University, Owerri, Nigeria.

\*richebeh@gmail.com

**ABSTRACT:** This study examined psychoactive substance abuse, weekly work hours, task structure, gender and age as predictors of stress symptoms among industrial workers. Two hundred employees from the production and marketing departments of 7Up Bottling Company PLC at Oregun in Lagos State, Nigeria were drawn through convenience sampling technique. They were made up of 135 males and 65 females. Participants' ages ranged from 18 – 43 years with a mean age of 27.69 years and a standard deviation of 5.35. The participants were measured using the Simple Screening Instrument for Substance Abuse (SSI-SA) and Psycho-Physiological Symptoms Checklist. The design used was the Cross-Sectional Survey Design while the Standard Multiple Regression on SPSS version 17 was used to analyze data collected. The results showed that psychoactive substance abuse, weekly work hours, task structure and gender significantly predicted stress symptoms among industrial workers. However, age did not significantly predict stress symptoms. The study recommends that Nigerian industries should streamline work hours to provide employees more time to relax. Also, psychoactive substance counselling sessions need to be undertaken regularly in Nigerian industries.

**Keywords:** Stress Symptoms, Psychoactive Substance Abuse, Work Hours, Task Structure, Industrial Workers.

**INTRODUCTION**

Stress has always been part of human existence. Everyone at certain phases of their lives experience some levels of stress. Stress could be good or bad depending on how it perceived and managed by affected individuals. It is highly peculiar in nature. Some individuals adapt easily to stressful situations and may achieve substantial progress in stressful environments while some others may become tensed easily at minimal stress levels and may become paralyzed when exposed to stressful situations (Oyelaran, Tudunwada, Abidoye & Sanusi, 2016).

The concept of stress has several perceptions and definitions. In the 14th century, stress was synonymous with hardships, adversity or afflictions (Lazarus & Folkman, 1984). More recently, stress is understood as a feeling which occurs when an individual's working or living conditions or circumstances make demands beyond the individual's capacity to handle such a situation physically or emotionally (Oboegbulem, 2007). Simply concept ualised,

stress is a feeling individuals experience in the course of responding to a physical or mental demand which requires application of energy. Usually stress is triggered when an external stressor (or event) exceeds a person's psychological, emotional, as well as physiological resources (Ragin, 2011).

Stress symptoms are not discriminatory. They affect all categories of people, culture, beliefs, values, and norms. Among industrial workers, stress symptoms are predominant just like in other work groups. However, industrial workers exposed to extremely stressful jobs may develop burnout syndrome which may result in increased reports of illnesses, heart diseases, poor immune system functioning, negative effects on the employee's social and private lives, reduction in self-esteem, and quality of work as well as poor workplace safety practices. (Borritz, *et al.*, 2010; Chandola, Brunner & Marmot, 2005; Schaubroeck, Jones, & Xie, 2001).

Although stress symptoms may include hypertension, respiratory ailments, gastro-intestinal disturbances, migraine and tension, headaches, pelvic pain, impotence, frigidity, dermatitis and ulcers; the use of some psychoactive substances that crosses the blood-brain barrier and acts primarily upon the Central Nervous System can increase the occurrence of these symptoms. This is because these substances, most times used recreationally, can alter an individual's consciousness and create subjective changes in consciousness and mood creating a sense of euphoria.

Psychoactive substances are substances that, when taken in or administered into one's system, affect mental processes, e.g. cognition or affect (WHO, 2017). Psychoactive substances are divided into different groups according to their pharmacological effects. Commonly used psychoactive drugs includes: anxiolytics, euphorants, stimulants, depressants and hallucinogens. Some commonly used psychoactive substances in Nigeria include alcohol, tobacco, kolanut, marijuana, codeine, cocaine and heroin. Excessive ingestion of psychoactive substances has been identified as one of the most obvious hazards accounting for a wide variety of industrial accidents (Blume, 2011). In addition, the impaired Judgement, inattention and dulled reflexes produced by the use of alcohol and other drugs also interfere with productivity at every level. Furthermore, workplace impairment due to drug and alcohol abuse often lasts beyond the period of intoxication. The alcohol related hangover may produce headaches, nausea and photophobia (light sensitivity) for 24 to 48 hours after the last drink (Blume, 2011). Workers suffering from alcohol dependence may also undergo withdrawal symptoms in the industry with shaking, sweaty and gastro-intestinal disturbances

Apart from the use of psychoactive substances among industrial workers, the growing trend of increasing work hours and days do also affect employee's health and has been debated for decades (Harrington, 1994). Studies have shown that in industries where long hours are common, a growing number of workers have been dying of cardio-vascular diseases during their productive years (Uehata, 1991). It has been identified that long hours bring about unhealthy life styles such as smoking, alcohol abuse, lack of physical activity, sleeplessness, and poor eating habits (Hu, Luk, Leong & Van, 2013).

Stress symptoms could also be a resultant effect of the structure of the task the employee is exposed to. Task structure explains the extent to which jobs have specific methods and guidelines for its performance. It involves the step by step procedure designed for the completion of a specific job. Some jobs have high task structure which implies that they have highly regimented and have clear-cut procedure for tackling the tasks involved. On the other hand, some jobs have low structures, their procedures or steps for their execution are very loose. In industries, task structure varies. There are various task structures which employees can adequately fit in. The type of task employees engage in, can lead to various psycho-physiological symptoms. Some jobs are more stressful than others. The work of an office clerk and that of a salesman or sales assistants is different in term of task structure.

Some tasks require heavy and sophisticated machines and toxic or harmful substances which can lead to serious health or psycho-physiological symptoms or problems. For instance employees in production department are exposed to harmful substances which can be detrimental to their health and on the other hand traffic congestion is a major stressor for sales person or those in the marketing department.

### **Statement of the Problem**

In most Nigerian industries, specifically, the soft drink industries, employees work for long hours in order to get a better pay. For instance, some of these soft drinks industry workers work for a maximum of 84-hours per week (12 hours per day, 7 days a week) against the Nigeria's Labour Act provision of not more than 45-hour work per week. This is because of the huge demand for their products which have to be met by the company.

More so, most industrial jobs demand energy and endurance. The worker as a result is fatigued and begins to develop symptoms of stress. This may then lead to engaging in the use and abuse of psychoactive substances in other to relieve pains and provide some levels of comfort. Along the line, such employees may take variety of substances like hemp, cocaine, local gin, caffeine, and tramadol. Occasionally, the use of these psychoactive substance lead to mental and physical breakdown with the likelihood of that the affected employees never becoming their normal selves again or in some severe cases may eventually lead to death.

Furthermore, the task structure undertaken by an industrial worker can also pose negative effect on their health. Tasks undertaken by different departments differ in mental and physical demands. Some departments are more stressful than others which may require the employees spending longer hours at work in order to meet up with the demands of their work. This could result of these categories of employees using certain psychoactive substances For example, sales assistants in the soft drinks industries have been observed to constantly consume lots of alcoholic drinks before they resume their daily duties very early in the mornings. These employees believe that such practice will enable them cope with the job demands.

Engaging in such daily consumption of alcohol before resumption of duties could be the cause of a high volume of damages to products and production equipments especially among truck boys before leaving the warehouse every morning. Also, interviews among employees in the Nigerian soft drinks industry show the number of deaths is highest among production personnel.

In the light of the forgoing and observations by the researchers of a paucity of research specifically on the effect of the use of psychoactive substances, work hours and task structure on stress symptoms among Nigerian soft drinks industrial workers, there is a need to undertake this study. It is on this background that this study is grounded. The study therefore attempts to ascertain how psychoactive substance abuse, weekly work hours and task structure results to increased stress symptom among Nigerian soft drinks industrial employees which consequently affects their health. Also, as a control measure, the study will try to ascertain the gender and age differences in perceived impacts of stress among Nigerian soft drinks industrial employees.

### **Psychoactive Substances and Stress Symptoms**

The relationship between psychoactive substance abuse and development of stress symptoms have been confirmed in several previous studies. For example, de Fatima Fernandes and da Silva Gherardi-Donato (2017) confirmed a relationship between work stress and psychoactive substance abuse. Similarly, Hassanbeigi, Askari, Hassanbeigi, and Pourmovahed (2013) identified the contributory role of stressful life events as a precursor of psychoactive substance abuse. Thus, they opined that to prevent the occurrence of severe stress and self treatment trough drug abuse, it's advisable to teach some skills such as stress prevention, alteration and toleration strategies to at-risk groups.

Furthermore, substantial studies have shown significant associations between stress and abuse of psychoactive substances (e.g. Sinha, 2001). Frone (2008) explored the relations of two work stressors (work overload and job insecurity) to employee alcohol use and illicit drug use. The results failed to support a relation between work stressors and overall measures of alcohol and illicit drug use. However, the results of the study lend support to the relationship among of work stressors and alcohol and illicit drug use before work, during the workday, and after work.

However, some other previous studies had showed no significant relationship between abuse of psychoactive substance and stress especially among social drinkers and college students (e.g Allan & Cooke 1985; Conway, Vickers, Ward & Rahe, 1981; Rohsenow 1982).

### **Work Hours, Task Structure and Stress Symptoms**

The Job Demand-Control (JDC) model (Karasek, 1979) succinctly explains the effect of work schedules and task structure on stress. JDC identified the role of work content as the major source of workplace stress. Work content could be based on the employee's perceptions regarding the tasks to be completed (job demand) or the degree of

control in performing the tasks (job control). When these two factors interact with one another it is likely influence the amount of strain experienced by employees thus leading to stress symptoms. In a study aimed at identifying and comparing individual behavioural and psychological responses to workload demands and stressors, Griffiths, Mackey and Adamson (2011) reported that individual work styles in response to workload demands and stressors including working with heightened muscle tension and mental fatigue were significantly associated with musculoskeletal symptoms. There are also a number of research confirming that increased number of working hours increases the risk of gastrointestinal problems (Caruso, Lusk & Gillespe, 2004; Wirtz, Nachreiner, Beermann, Brenscheidt & Siefer, 2009) with others reporting an association between the number of working hours per week and the risk of musculoskeletal impairment (Writz, 2010).

Furthermore, Lipscombe, Trinkoff, Geiger-Brown and Brady (2002) reported that working 12 or more hours was associated with increased risk of back disorder in nurses when compared with those working 8 hours. They further indicated that the number per week has an effect on the risk of physical health problems when combined with other health problems and when combined with other potentially harmful working time. Dembe, Erickson, Delbos and Banks (2005) observed that overtime schedules was associated with a 61% higher injury hazard rate compared to jobs without overtime working at least 60 hours per week was associated with 230% increased hazard rate. Results suggested that job schedules with long working hours are more risky merely because they are concentrated in inherently hazardous injuries or occupations.

In another study, Dembe, Erickson, Delbos, and Banks (2008) reported that greatest risk of job related injuries were among construction workers in evening shifts, professionals, technical and managerial professional working overtime schedules and employees working overtime shifts in the business and repair service sector. Dong (2005) provided evidence that overtime and irregular work scheduling have an adverse effect on workers safety. Also, Grosch, Caruso, Rosa, Sutter (2006) demonstrated that the risk of reporting overall physical health due to working hours above 70 hours per week was 5 times higher than for persons working 35 to 40 hours per week. The risk of reporting arm and back pain was elevated by 60% for workers per week compared to full time workers with 35 to 40 hours per week. Nachreiner, Radiker, Janssen and Schomann (2005) reported an increasing amount of sleep problems due to an increase in hours worked per week which may add to the negative consequences of reduced sleep duration. Overall, the empirical evidence reviewed showed that the effect of longer work schedules and physically challenging task structures tend to be related to increased stress symptoms.

### **Gender, Age and Stress Symptoms**

Workplace stress affects both men and women with previous studies showing conflicting reports on the gender differences in relation to certain aspects of stress. A recent survey by the American Psychology Association (APA, 2017) showed that 58% of Americans report work as very or somewhat significant sources of stress in their lives. This survey had also shown that in general, women are more likely than men to experience physical symptoms of

stress. These symptoms may include fatigue, irritability, headaches and depression. In terms of coping, women are also more likely than men to cope with work related stressors.

Also the coping mechanisms used in dealing with stress among men and women differ. Women tend to use more social-emotional strategies to cope with stress, whereas men are more likely to use behavioural/mental or drug/alcohol disengagement. Men tend to cope by way of problem focused strategies while women characteristically use more emotion-focused strategies to manage stress (Bickford, 2005). Studies have shown evidence to suggest that women may have been socialized in a way that predisposes them to ineffective coping, for example, women get sick as a way of coping with stress more often than men do (Korabik, McDonald, & Rosin, 1993). In terms of reacting to long term stress, it has been found that men tend to show physical deterioration as a response to stressful situations, whereas women generally exhibit psychological symptoms (Wichert, 2002).

Age can influence the type of workplace stress experienced, but it tends to be specific to certain aspects of the job (Bickford, 2005). APA (2017) reports that younger people are much more likely to report higher average stress levels. However according to Wichert (2002), in relation to job security, older employees tend to experience less stress than their younger counterparts but experience more stress than younger workers in relation to the intensity of the job.

### **Hypotheses**

1. Psychoactive substance abuse will significantly predict increased stress symptoms among industrial employees.
2. Weekly work hours will significantly predict increased stress symptoms among industrial employees.
3. Task Structure will significantly predict increased stress symptoms among industrial employees.
4. Gender differences will significantly predict increased stress symptoms among industrial employees.
5. Age will significantly predict increased stress symptoms among industrial employees.

### **METHOD**

#### **Participants**

Participants for this study comprised of 200 employees drawn from the production (n = 107) and marketing (n = 93) departments of 7up Bottling Company, Oregun in Lagos State. They were selected through purposive sampling technique and were made up of 135 males and 65 females with ages ranged within 18 – 43 years (M = 27.69, SD = 5.35).



### **Instruments**

Two instruments were used to gather data for this study. These are the Simple Screening Instrument for Substance Abuse (SSI-SA) and Psycho-physiological Symptoms Checklist (PSC).

The Simple Screening Instrument for Substance Abuse (SSI-SA) is a self-report measure of substance abuse developed by the Consensus Panel of TIP 11 (Centre for Substance Abuse Treatment, 1994). It is a 16-item instrument with evidence of adequate internal consistency (.85) and strong validity (Boothroyd, Peters, Armstrong, Rynearson-Moody & Caudy, 2013). Also, Peters *et al.* (2000) found the SSI-SA to be effective in identifying substance-dependent inmates, and the SSI-SA demonstrated high sensitivity (92.6 percent for alcohol or drug dependence disorder, 87.0 percent for alcohol or drug abuse or dependence disorder) and excellent test-retest reliability (.97). Knight, Goodman, Pulerwitz, and DuRant (2000) also found the SSI-SA a reliable substance abuse screening instrument among adolescent medical patients. Similarly, the SSI-SA has been found to have high internal consistence among Nigerian samples. Agbo (2015) obtained a Cronbach's alpha of .86 and a split-half reliability of .90. For this study, the researchers also obtained split-half reliability of .70 and Cronbarch's alpha of .77 with corrected item totals ranging from .32 to .51.

Stress was measured with the Psycho-physiological Symptoms Checklist (PSC) developed by Omoluabi (1988). The PSC is a 50-item scale with a 5-point Likert-type response format. Using Nigerian samples, Omoluabi (1996) obtained an alpha coefficient of .78 while Ebiai (1986) obtained concurrent validity coefficient of .47 and .41 for both males and females by correlating PSC with the Social Re-adjustment Rating Scale (SRRS) by Holmes and Rahe (1967). Higher scores imply high stress level. Demographic variables such as age, gender, hours spent at work and task structure were also included in the instrument.

### **Procedure**

Participants from the production and marketing departments were approached at their various departments or duty posts. After properly explaining the purpose of the research and obtaining their consent, they were presented with the study's questionnaire which contained the two measures alongside some demographic questions. The participants were allowed adequate time to complete the questionnaire because of their hectic work schedules. Those who asked questions related to the instruments were provided with useful answers to guide them in the completion of the questionnaires. In all, 250 questionnaires were distributed with only 200 of these returned fully completed and found usable for the study after adequate data screening.

### **Design and Statistic**

The design for this study is a Cross-Sectional Survey Design. This is because a large number of samples were surveyed at within a particular time frame. Data analyses were done using Standard Multiple Regression Analyses on SPSS Version 17.

**RESULTS**

**Table 1: Summary of Results of a Standard Multiple Regression Analyses of Psycho-Physiological Manifestation on Psychoactive Substance Abuse, Hours of Work and Task Structure**

Variables	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Δ F	B	df	t	P
	.61	.38	.36	23.44		7,194		
Substance Abuse					.37		6.24	.000***
Weekly Work Hours					.24		3.23	.001**
Task Structure					-.20		-2.70	.008*
Gender					-.36		-5.48	.000***
Age					.06		.86	.389 <sup>NS</sup>

*Note: \*P<.05; \*\*P<.005, \*\*\*P<.0005, <sup>NS</sup>=Not Significant*

From the table above, the model's overall fit as indicated by R<sup>2</sup> show that 38% of the variation in stress symptoms has been explained by the model. Generally, this implies that psychoactive substance abuse, weekly work hours, daily work hours, weekly work days, task structure, gender and age explained a significant proportion of variance in industrial employees perceived stress symptoms scores [ $R^2 = .38 F(5,194) = 23.44, p < .0005$ ]. The Durbin-Watson of 1.74 falls within the accepted range ( $1.5 < D < 2.5$ ), indicating that there is no autocorrelation problem in the data and that the error term is independent.

The first hypothesis as shown Table 1 above indicate that psychoactive substance abuse significantly predict stress symptoms scores among industrial employees, [ $B = -.37, t(5,194) = 6.24, p = .000$ ]. The hypothesis was therefore accepted implying that psychoactive substance use is positively related to perceived stress symptoms among industrial employees. Similarly, the second hypothesis indicate that higher weekly work hours [ $B = .24, t(5,194) = 3.23, p = .001$ ] significantly predict increased perceived stress symptoms among industrial employees. Also, the result for the third and fourth hypotheses show that task structure [ $B = -.20, t(5,194) = -2.70, p = .008$ ] and gender [ $B = -.36, t(5,194) = -5.48, p = .000$ ] both inversely predict perceived stress symptoms among industrial employees. These imply that working in the marketing department and being female are strong predictors of stress symptoms among industrial employees.

Finally, result for the fifth hypothesis show that age [ $B = .06, t(5,194) = .86, p = .389$ ] does not significantly predict perceived stress symptoms among industrial employees. This hypothesis was therefore rejected.

**DISCUSSION**

The first hypothesis which stated that psychoactive substance abuse will significantly predict increased stress symptoms among industrial employees was accepted The finding showed that industrial employees who engage more in psychoactive substance abuse reported higher



stress symptoms. It further infers that employees that abuse psychoactive substances manifest higher psycho-physiological symptoms than non-users. This is in line with previous studies which confirmed a relationship between work stress and psychoactive substance abuse (de Fatima Fernandes, & da Silva Gherardi-Donato (2017) and identified the contributory role of stressful life events as a precursor of psychoactive substance abuse (Hassanbeigi, Askari, Hassanbeigi, & Pourmovahed, 2013). It is worth noting that the stress experienced by this category of industrial workers could both lead to involvement in the abuse of psychoactive substances and or be a resultant effect of the abuse of psychoactive substances. This assertion has been confirmed by Frone (2008) who identified the relationship among of work stressors and alcohol and illicit drug use before work, during the workday, and after work.

On the second hypothesis, it was confirmed that weekly work hours had a significant positive relationship with increases in perceived stress symptoms among industrial employees. This result corroborates with the work of Kirkaldy, Trimpop and Cooper (1997) which found significant positively relationship between job stress and working hours. The debilitating effect of working longer hours has been examined by Lipscombe, *et al.* (2002) who reported that working 12 or more hours were associated with increased risk of back disorders in nurses. Working longer hours may not only increase perceived stress symptoms but could lead to stress and even result in increased incidence of industrial accidents.

The third hypothesis also confirmed that the structure of the task the worker is exposed to correlates with perceived stress levels. It was identified that based on the inverse relationship between task structure and stress, employees in the marketing department (dummy coded as 0) reported higher perceived stress than their counterparts in the production department (dummy coded as 1). By implication, this finding posits that employees' in the marketing department were higher in their experience of stress than those in the production department. This agrees with previous studies by Nachreiner *et al.* (2005) which reported that the effect of physically challenging task structures tend to be related to increased stress symptoms. This outcome is not unconnected with the huge demand of products that employees in the marketing departments must meet and the unusually increasing marketing targets set by the management.

The study also found gender differences among industrial employees in the perception stress. Females (dummy coded as 0) reported higher perceived stress symptoms than their male counterparts. This corroborates with extant studies (e.g. Bickford, 2005; Korabik, *et al.*, 1993). Though men do experience stress at work but women are much likely to perceive stressful psychological symptoms better (Wichert, 2002).

Finally, age differences among industrial employees in the perception stress did not yield a significant relationship. This may be because of the relatively young samples used in the study and the maximum aged participant was 43 years and because age tends to be specific to certain aspects of the job (Bickford, 2005). This result fails to agree with the APA (2017) report that younger people are much more likely to report higher average stress levels.

### **Recommendations**

The resultant effect of stress on employees does not portend significant progress towards the attainment of industrial growth. It is therefore important for industries to increase its effort to ensure that employees do not suffer from work stress. When work stress does occur, efforts should be made to manage the affected employee.

As an offshoot of this study, it is strongly recommended that Nigerian industries engage in proactive psychoactive substance counselling of their employees. Such counselling sessions should not be a one-off event but should be a continuous exercise aimed at educating the employees on the dangers of psychoactive substance abuse and proffering ways of self management for employees who are already involved in drug abuse. Where feasible, treatment of addicts should be sponsored fully or partly by the employers.

Stress management workshop should be carried out from time to time as this will benefit the employees immensely. During these workshops, employees should be educated on what they could do to reduce or cope with existing stress in the industry.

Also, there is need to streamline work hours which should provide employees more time to relax. As observed in this study, employees in the marketing departments reported sever stress symptoms more. There is need to ensure that improved work schedules are instituted. Flexible work schedules could provide better results. The unusually hefty targets given to these employees could be modified. Failing to meet targets should not lead to severe threats but rewards systems could be instituted for meeting company targets.

### **Conclusion**

Managing stress in Nigerian industries is inevitable. This is because of the devastating effect of stress particularly in Nigeria. As a result of the nation's healthcare defectiveness, stress has been wrecking havocs on industrial employees. This study is therefore an attempt to examine the relationship among psychoactive drug abuse, work hours, task structure gender and age on perceived stress symptoms among industrial employees. The study was able to identify that stress is a result of and could result in psychoactive substance abuse. It was also identified that long working hours, being involved in the marketing of industrial products and being a female strongly correlates with perceived stress symptoms. The study suggests that counselling sessions, workshops on stress reduction techniques and streamline work schedules are likely ways of reducing stress among industrial workers.

### **REFERENCES**

- Agbo, C. O. (2015). *Drug Use, Spirituality, Intimacy and Age as Determinants of Antisocial Behaviour among Youths*. Unpublished M.Sc. Thesis, Department of Psychology, University of Nigeria, Nsukka. Retrieved from [http://www.unn.edu.ng/publications/files/18103\\_DRUG\\_USE,\\_SPIRITUALITY,\\_I](http://www.unn.edu.ng/publications/files/18103_DRUG_USE,_SPIRITUALITY,_I)

NTIMACY\_AND\_AGE\_AS\_DETERMINANTS\_OF\_ANTISOCIAL\_BEHAVIOUR\_AMONG\_YOUTHS.pdf

- Allan, C.A. & Cooke, D.J. (1985). Stressful life events and alcohol misuse in women. A critical review. *Journal of Studies on Alcohol and Drugs*, 46, 147– 152.
- American Psychological Association (2017). *Stress in America: Coping with Change*. Retrieved from <https://www.apa.org/news/press/releases/stress/2016/coping-with-change.pdf>
- Bickford, M. (2005). Stress in the Workplace: A General Overview of the Causes, the Effects, and the Solutions, Canadian Mental Health Association. Retrieved from <http://heathergood.ca/wp-content/uploads/2014/09/workplace-stress.pdf>
- Blume, S. (2011). Alcohol and Drug Abuse. *Encyclopaedia of Occupational Health and Safety*. Retrieved from <http://www.iloencyclopaedia.org/part-ii-44366/health-protection-a-promotion/15/alcohol-and-drug-abuse>
- Boothroyd R. A., Peters R. H., Armstrong M. I., Ryneerson-Moody S. & Caudy M. (2013). The Psychometric Properties of the Simple Screening Instrument for Substance Abuse. *Evaluation in the Health Professions*. *Evaluation & the Health Professions*, 38 (4), 538 – 562. DOI: 10.1177/0163278713490165
- Borritz, M. , Christensen, K. B., Bultmann, U., Rugulies, R. Lund, T., Andersen, I., Villadsen, E., Didreichsen, F., & Krisensen, T. S. (2010). Impact on burnout and psychological work characteristics on future long-term sickness absence. Prospective results of the Danish PUMA Study among human service workers. *Journal of occupational and environmental medicine*, 52(10), 964-970.
- Caruso, C.C., Lusk, S.L. & Gillespie, B.W. (2004). Relationship of Work Schedules to Gastro-intestinal diagnoses, Symptoms and Medication use in Auto factory Workers. *American Journal Industrial Medicines*, 46(6), 586-98.
- Chandola, T., Brunner, E., & Marmot, M. (2005). Chronic Stress at work and the metabolic syndrome: Prospective study. *British Medical Journal*, 332(7540), 521–525. DOI:10.1136/bmj.38693.435301.80
- Conway, T.L., Vickers, R.R., Ward, H.W. & Rahe, R.H. (1981). Occupational stress and variation in cigarette, coffee and alcohol consumption. *Journal of Health and Social Behavior*, 2, 155–165.
- de Fatima Fernandes, M.N. & da Silva Gherardi-Donato, E.C. (2017) Is It Workplace Stress a Trigger for Alcohol and Drug Abuse? *Open Journal of Nursing*, 7, 435-448. <https://doi.org/10.4236/ojn.2017.73034>

- Dembe, A.E., Erickson, B. & Delbos, R. (2008). The Effects of Occupation and Industry on Injury Risks from Demanding Work Schedules. *Journal of Occupational and Environmental Medicine*, 50(10), 1185-1194.
- Dembe, A.E., Erickson, J.B., Delbos, R.G. & Banks, S.M. (2005). The Impact of Overtime and Long Work Hours on Occupational Injuries and Illnesses; New Evidence from the United States. *Journal of Occupational and Environmental Medicine*, 62, 588-97.
- Dong, X. (2005). Long Work Hours, Work Scheduling and Work Related Injuries among Construction Workers in the United States. *Scandinavian Journal of Environmental Health*, 31, 329-335.
- Ebiai, A. (1986). *Environmental, sex and ethnic factors in the perceived stressfulness of life events and their relationship to manifest psychophysiological disorders*. Unpublished B.Sc. Thesis, Department of Psychology, University of Lagos.
- Frone, M. (2008). Are Work Stressors Related to Employee Substance Use? The Importance of Temporal Context in Assessment of Alcohol and Illicit Drug Use. *Journal of Applied Psychology*, 93(1), 199-206. <http://dx.doi.org/10.1037/0021-9010.93.1.199>
- Griffiths, K., Mackey, M., Adamson, B., Pepper, K. (2012). Prevalence and risk factors for musculoskeletal symptoms with computer based work across occupations. *Work*, 42(4), 533- 541.
- Grosch, J.W., Caruso, C.C., Rosa, R.R. & Sauter, S.L. (2006). Long Hours of Work in the United States: Association with Demographic and Organizational Characteristics, Psychosocial Working Conditions and Health. *American Journal of Industrial Medicine*, 49(11), 943-52.
- Harrington, J.M. (1994). *Working long hours and health*. (British Medical Journal Supplement) Birmingham, England: Institute of Occupational Health, 1581-2.
- Hassanbeigi, A., Askari, J., Hassanbeigi, D. & Pourmovahed, Z. (2013). The Relationship between Stress and Addiction. *Procedia-Social and Behavioral Sciences*, 84, 1333-1340.
- Holmes, T.H. & Rahe, R.H. (1967). The Social Readjustment Rating Scale. *Journal of Psychosomatic Research*, 11, 213-218.
- Hu, S.X., Luk, A., Leong, U. & Van, F. (2013). The Correlation of Work Conditions with Unhealthy Lifestyles and Occupational Health Problems of Casino Croupiers in Macau. *Journal of Gambling Studies*, 29(2), 255-68.
- Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24, 285- 308.

- Kirkaldy, B., Trimpop, R., Cooper, C. (1997). Working Hours, Job Stress, Work Satisfaction and Accident Rates among Medical Practitioners and Allied Personnel. *International Journal of Stress Management*, 4(2), 79-87.
- Knight, J. R., Goodman, E., Pulerwitz, T., & DuRant, R. H. (2000). Reliabilities of short substance abuse screening tests among adolescent medical patients. *Pediatrics*, 105, 948-953.
- Korabik, K., McDonald, L. M., & Rosin, H. M. (1993). Stress, coping, and social support among women managers. In B. C. Long & S. E. Kahn (Eds.), *Women, work, and coping: A multidisciplinary approach to workplace stress*. (pp. 133-153). McGill Queens University Press.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal and Coping (8th Ed.)*. New York: Springer Publishing Company Inc.
- Lipscombe, J.A., Trinkoff, A.M., Geiger-Brown, J. & Brady, B. (2002). Work Schedule Characteristics and Reported Musculoskeletal Disorders of Registered Nurses. *Scandinavian Journal of Work Environmental Health* 28, 394-401.
- Nachreiner NM, Gerberich SG, McGovern PM, Church TR, Hansen HE, Geisser MS, et al. Impact of training on work-related assault. *Research in Nursing & Health* 2005; Vol. 28, issue 1:67-78.
- Nachreiner, F., Radiker, B., Janssen, D., Schomann, C. (2005). Untersuchungen zum Zusammenhang zwischen der Dauer der Arbeitszeit und gesundheitlichen Beeinträchtigungen. Ergebnisse einer Machbarkeitsstudie. Oldenburg: Gesellschaft für Arbeits-, Wirtschafts- und Organisationspsychologische Forschung. V.
- Oboegbulem, A.I. (2001). Strategies for managing stress among secondary school teachers in two Nigerian States. *International Journal of Educational Research (INJER)*, 5, 76-81.
- Omoluabi, P.F. (1987/88). Standardization of the Psycho-Physiological Symptoms Checklist. *Nigerian Journal of Psychology*, 6&7 (1&2) 118-128.
- Omoluabi, P.F. (1996). *Standardization of Psycho-physiological Symptoms Inventory*. Unpublished Manuscript, Department of Psychology, University of Lagos.
- Oyelaran, O.A., Tudunwada, Y.Y., Abidoye, J.K. & Sanusi, O.M. (2016). A Study on Impact of Work Stress among Mat Factory Workers in Kano – Nigeria in 2015. *Iranian Journal of Health, Safety & Environment*, 4(2), 746-751.

- Peters, R. H., Greenbaum, P. E., Steinberg, M. L., Carter, C. R., Ortiz, M. M., ... Valle, S. K. (2000). Effectiveness of screening instruments in detecting substance use disorders among prisoners. *Journal of Substance Abuse Treatment*, 18, 349–358.
- Ragin, D. S. (2011). *Health Psychology: An Interdisciplinary Approach to Health*. Boston: Pearson Education Inc.
- Rohsenow, D.J. (1982). Social anxiety, daily moods, and alcohol use over time among heavy social drinking men. *Addictive Behaviors*, 7, 311–315.
- Schaubroeck, J., Jones, J. R., & Xie, J. L. (2001). Individual differences in utilizing control to cope with job demands: effects of susceptibility to infectious disease. *Journal of applied psychology*, 86(2), 265-278. DOI: 10.1037//0021-9010.86.2.265
- Sinha R. (2001). How does stress increase risk of drug abuse and relapse? *Psychopharmacology*, 158, 343–359. DOI 10.1007/s002130100917
- Uehata, T. (1991). Long Working Hours and Occupational Stress Related Cardio-vascular Attacks among Middle-aged Workers in Japan. *Journal of Human Ergology* 20, 147-53.
- WHO (2017). *Psychoactive substances*. Retrieved from [http://www.who.int/substance\\_abuse/terminology/psychoactive\\_substances/en/](http://www.who.int/substance_abuse/terminology/psychoactive_substances/en/)
- Wichert, I. (2002). Job insecurity and work intensification: The effects on health and well-being. In B. Burchell, D. Ladipo, & F. Wilkenson (Eds.) *Job insecurity and work intensification* (pp. 92-111). New York, NY: Routledge.
- Wirtz, A. & Nachreiner, F. (2010). The Effects of Extended Working Hours on Health and Social Well-being-A Comparative Analysis of four Independent Samples. *The Journal of Biological and Medical Rhythm Research*, 27(5), 1124-1134.
- Wirtz A, Nachreiner F, Beermann B, Brenscheidt F, Siefer A. (2009). Lange Arbeitszeiten und Gesundheit. Dortmund: Bundesanstalt fuer Arbeitsschutz und Arbeitsmedizin, 6 pp. Retrieved from <http://www.baua.de/cae/servlet/contentblob/668716/publicationFile/56999/artikel20.pdf>