WORKPLACE CONDITION AS PREDICTOR FOR OCCUPATIONAL HEALTH AMONG INFORMATION TECHNOLOGY PROFESSIONALS IN LAGOS STATE, NIGERIA

Ashon Daniel Oluwatobi; Oladipupo Basirat Olushola; Ogunbamowo Waliu Babatunde; Igwe Sandra Chidiebere and Jatto Opeyemi Basirat
Department of Human Kinetics, Sports and Health Education, Lagos State University

Abstract

This study examined work place condition and health implication among information technology professionals in Lagos State. Two research questions and hypotheses were postulated while the descriptive research design was used. The study comprised of all information technology professionals from six key areas of specialization in Lagos State while 300 information technology professionals were selected. The research instrument adopted the "Workplace Condition and Health Implication Questionnaire (WCAHIQ)" which was distributed, collected and analysed using descriptive statistics of frequency counts and percentages for demographics and inferential statistics of Regression analysis at 0.05 level of significance to test the hypothesis while Cronbach's alpha coefficient of 0.86 was obtained for the reliability of the instrument. The findings of the study revealed that there was significant relationship between work place condition and occurrence of work stress among information technology professionals in Lagos State ($R^2=0.287$, $F=119.812$; $P<0.05$). Further findings revealed that, there was significant relationship between work place conditions and occurrence of sleep disorder among information technology professionals in Lagos State ($R^2=0.101$, $F=33.505$; $P<0.05$). It was recommended that IT professionals take regular breaks during work hours to relax and get refreshed.

Introduction

Human is faced with the reality of life ridden upon with the quest for survival and as such pursuing success guarantees survival of individuals. However, work is perceived a necessary bridge that transmits dreams, desires and goals from imagination to reality (Afolayan et al., 2019). Since work is an unavoidable task in the human race, it is of great necessity that the ambience and environment people are subjected to are safe enough to keep their health whole and free from danger.Global and local attention has drifted slightly towards emergence and occurrence of various workplace accidents leading to loss of lives and causing injuries to employees. Reports from the Bureau of Labour Statistics (2021) revealed that the United States recorded cases of nonfatal workplace accident or illness and has resulted in treatment for an estimated 285,240 private industry employees in an emergency room (ER) in the year 2019 alone which represents 32.1 percent of all private sector occurrences that caused days off of work. Consecutively, Ergonomics was a major topic for Occupational Safety and Health Administration in the 1990s which in the same vein was embraced by International Labour Organization which estimated that some 2.3 million women and men around the world succumb to work-related accidents or diseases every year; corresponding to over 6000 deaths every single day (ILO, n.d.). In this regard, the sheer benefit of Ergonomic Workplace Analysis (EWA) is quite enormous as its benefit

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encompasses all types of workplaces and employees, from the classy and corporate office workers to the rugged factory workers that the bulk of the common men do for a living. Considerably identifying the broad implementation of EWA is an unachievable feat at the moment, as many employees and organizations are stalked in the euphoria of wading off challenges necessary for life sustenance and achievements of goals and as such, made them myopic to this approach (Ogunbamowo et al., 2022).

Consecutively, ergonomic workplace analysis is a critical component of workplace safety and health that increasingly gains attraction in Africa. One of the key drivers of ergonomic workplace analysis in Africa is the high prevalence of work-stress and sleep disorders caused by poor ergonomics (Ajidahun and Phillips, 2013). Hence, pushing a number of African countries to developing workplace safety and health regulations and guidelines. For example, the Government established the National Industrial Safety Council of Nigeria (NISCN) and the Nigerian Institute of Safety Professionals (NISP) (Bakare, 2017). Ergonomics is directly linked to workplace health implications since workers develop musculoskeletal disorders (MSDs), repetitive strain injuries (RSIs), eye strain, headaches, work stress, sleep disorders and fatigue as a result of a poorly designed or organized work environment (Igwe, and Olaniyi, 2022; Iyanda and Odetayo, 2023). These health issues can have a significant impact on a worker's quality of life and productivity, as well as on employers' healthcare costs. Oladipupo-Okorie and Viatonu, (2014) gave insight that diseases or health challenges may be multicausal as such it is believed that threat to workers' health are multifactorial. Therefore, Employers who prioritize ergonomics in the workplace can create a healthier, safer, and more productive work environment for their employees (Bayram et al., 2022).

Ergonomics in relation to Information technology (IT) is the scientific study of the interaction between information technology and their workspace environment in order to promote safety, performance and well-being (Bailey et al., 2021). IT professionals frequently experience loads of avoidable health challenges like eye strain, neck pain, back pain, wrist pain, headaches and many other conditions which have a significant impact on workers' ability to perform their job as well as their quality of life which may result in increased healthcare costs for employers and employees when not duly attended to (Larrea-Araujo et al., 2021).

The 21st century has taken an unimaginable dimension in the technology world, hence the need to scale up researches on computer health related problems considering the uncurtailable upsurge in the numbers of individuals tilting towards Information technology (IT) as professionals. Information technology job roles and responsibilities include software developers, network administrators, database administrators, system analysts, IT project managers, cybersecurity professionals, and technical support staff (Schwalbe, 2015; Welch et al., 2014).Workstation, posture, and work style are all important factors in ergonomic assessment i.e. work conditions of IT professionals and these factors have significant impact on employee health, productivity, and overall job satisfaction. Workstyle is hypothesized as a process by which ergonomic and psychosocial risk factors interact to influence the onset, aggravation, and/or maintenance of discomfort and functional limitations among employees (Sharan and Ajeesh, 2012). In the same vein, the approach

and habits that a worker employs while performing their job are referred to as their work style and it is linked to an increase in work demand which increases the labour or demand among workers who use computers (Zayed et al., 2021).

There is a long history of civilization and development in Lagos State, with the State being the hub of civilization with an estimated population of over 15 million people (Adama, 2018). The key to this could be traced to its proximity to the sea and the presence of vibrant seaports this state commands as well (Olanipekun, 2013). Nonetheless, Lagos is expected to remain one of the world's fastest growing cities as it is not only positioned as the economic hub of Nigeria, it has transcended full-blown into a prominent technology centre in Africa (Faisal Koko et al., 2021). The city is home to a thriving technology sector that include tech startups, incubators, accelerators, and co-working spaces with organizations such as Paystack, Flutterwave, Andela, and Jumia are just a few of the successful software firms in Lagos that have received considerable investment from both local and international investors (Tafese, 2022).

IT professionals in Lagos State, like those in many other regions of the world, experience a number of health issues as a result of their work with sleep difficulties and work stress being regarded as prevalent health issues plaguing IT employees in Lagos State (Chibuzor and Alete, 2021). Concurrently, issues of stress among IT professionals are experiencing an untameable increase. This is hugely linked to the demanding nature of IT work coupled with high expectations and deadlines given by employers and clients. IT professionals are predisposed to conditions such as high workload, long working hours and high-pressured environments which unanimously influence health of employees negatively (Raudenska et al., 2020). Another major health issue predisposed to by IT professionals is sleep disorder as many IT workers do have serious health concerns about sleep disorders. The tech industry's long workdays, high screen exposure, and frequently erratic shift patterns all contribute to circadian rhythm disruptions resulting in problems like insomnia, poor sleep, and in certain situations, more serious chronic conditions like sleep apnoea (Enone et al., 2021). Essentially, this study examined work place conditions and health implications among information technology professionals in Lagos State.

Methodology

The descriptive research design was adopted because of its uniqueness, relevance and ability to examine the relationship between variables under study, hypotheses testing and development of generalization. The population of this study consists of all information technology professionals in Lagos State from six key specializations which include; software developers, data analysts, cybersecurity experts, network administrators, IT project managers and cloud computing experts. The sample for this study were three hundred (300) selected information technology professionals in Lagos State using multistage sampling technique of stratified and convenience sampling techniques. The first stage of sampling technique adopted the stratified random sampling technique for selection of respondents into six key specializations while the convenience sampling technique was adopted for the second stage of organisation selection. The third stage of sampling technique adopted the convenience sampling for selection of fifty (50) IT professionals from each of the specialized

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units identified.The research instrument for this study was a self-developed questionnaire, titled "Workplace Condition and Health Implication Questionnaire (WCAHIQ)".   The questionnaire was divided into two sections: A and B. Section A contained demographic data of respondents, while Section B was structured to test the stated hypotheses. Further, the questionnaire adopted a four (4) point Likert modified scale ranging from Strongly agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The face, construct and content validity of the instrument were ascertained by a panel of experts in Department of Human Kinetics, Sports and Health Education from Lagos State University, Ojo, Lagos. The reliability of the instrument was tested using the Cronbach alpha technique after administering twenty (20) copies twenty respondents that were not included in the main study. An r-value of 0.78 was obtained and adopted for data collection. Three hundred (300) copies of the questionnaires were distributed and collected by the researcher with the help of three trained research assistants to the respondents. Copies of the administered questionnaires were checked to ensure that they were well completed. Daily review meetings were held at the beginning and end of each day with the research assistants, data collection lasted for two weeks. Data collected were analyzed using descriptive statistics of frequency counts and percentages for demographic data while the inferential statistics of regression analysis was used to test all stated hypothesis at 0.05 level of significance. The Statistical Package for Social Science (SPSS) version 23 was used for analysis.

Results

Hypothesis One: There will be no significant contribution of work place conditions to occurrence of work stress among Information Technology professionals in Lagos State

Table 2: Contribution of work place conditions to occurrence of stress among Information Technology professionals in Lagos State

Model	$R = 0.077$	$R^2 = 0.287$	$AR^2 = 0.284$	$F = 119.812^*$		Sig. $= 0.000$
	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
Constant	2.914	1.048			2.781	0.006
Work Condition	0.348	0.032	0.536		10.946	0.000*

a. Dependent Variable: Occurrence of work stress

From table 2, it could be observed that the relationship between the independent variable (work condition) and the dependent variable (work stress) could be predicted at 28.7% ($R^2 = 0.287$). It could further be observed that a significant F-value (F=119.812; P<0.05) was obtained at 0.05 level of significance. Therefore, hypothesis one as stated above is hereby rejected, thus implying that a significant relationship was recorded between work place conditions and occurrence of work stress among information technology professionals in Lagos State. The t-value was significant and a positive t-value (t=10.946; P<0.05) recorded

for work condition indicates that the more stringent the work condition, the higher the work stress experienced by the information technology professionals.

Hypothesis Two: There will be no significant contribution of work place conditions to occurrence of sleep disorder among Information Technology professionals in Lagos State.

Table 3: Contribution of work place conditions to occurrence of sleep disorder among information technology professionals in Lagos State

Model	$R = 0.318$ $R^2 = 0.101$ $AR^2 = 0.098$		$F = 33.505*$	Sig. = 0.000	
	Unstandardized Coefficients		Standardized		
			Coefficients	t	Sig.
Constant	5.767	1.570		3.674	0.000
Work Condition	0.276	0.048	0.318	5.788	0.000*

a. Dependent Variable: Sleep disorder

From table 3, it could be observed that the relationship between the independent variable (work condition) and the dependent variable (sleep disorder) could be predicted at 10.1% ($R^2 = 0.101$). It could further be observed that a significant F-value (F=33.505; P<0.05) was obtained at 0.05 level of significance. Therefore, hypothesis two as stated above is hereby rejected, thus implying that a significant relationship was recorded between work place conditions and occurrence of sleep disorder among information technology professionals in Lagos State. The t-value was significant and a positive t-value (t=5.788; P<0.05) recorded for work condition indicates that the more stringent the work condition, the higher the sleep disorder experienced by the information technology professionals.

Discussion of findings

Hypothesis one which stated that there will be no significant contribution of work place conditions to occurrence of work stress among information technology professionals in Lagos State was rejected, indicating that there was significant relationship between work place conditions and occurrence of work stress among information technology professionals in Lagos State.This finding is in agreement with Fong and Mahfar, (2013) in a study about relationship between Occupational Stress and Turnover Intention among Employees in a Furniture Manufacturing Company in Selangor. A total of 95 respondents were sampled while Pearson correlation was used in analysing for relationship between turnover intention (work condition) and occupational stress among employees in the company. This study revealed positive relationship between turnover intention and occupational stress among Employees in a Furniture Manufacturing Company in Selangor. Further, other relatable determinants for stress includes the organization structure as well as the support system provided.

This finding is in agreement with Deguchi et al., (2022) in a study about relationships between Occupational Stress, Change in Work Environment during the COVID-19 Pandemic, and Depressive and Anxiety Symptoms among Non-Healthcare

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Workers in Japan. The Generic Job Stress Questionnaire (GJSQ) was administered on 807 non-healthcare workers who participated in a cross-sectional survey that took place from December 16 to 17, 2020. Logistic regression analysis was used in analysis. This study revealed that there is a relationship between anxiety and depressive symptoms and variations in workload, job future ambiguity, social support from coworkers.

Therefore, it could be inferred that there was significant relationship between work place conditions and occurrence of work stress among information technology professionals in Lagos State. Hypothesis two which stated that there will be no significant contribution of work place conditions to occurrence of sleep disorder among information technology professionals in Lagos State was rejected, indicating that there was significant relationship between work place conditions and occurrence of sleep disorder among information technology professionals in Lagos State.

This finding is in agreement with Heo et al., (2013) in a study on association between workplace risk factor exposure and sleep disturbance in Korean workers. Specifically, 7,112 employees were sampled while multivariate logistic. This study revealed that employees in Korean work stations and office spaces showed significant relationship with occurrence of sleep disorder. These findings implied that sleep disturbance is substantially correlated with occupational exposure to physical and psychosocial workplace risk factors.

This finding is in agreement with Ghods et al.,(2017) in a study that investigated the association between shift work and various sleep disorders and quality of life. A cross-sectional study was conducted on 207 shift workers while data were collected using the Persian version of Epworth sleepiness scale. The result of the study revealed that there was significant negative correlation between quality of life and Epworth sleep score, meaning an increase in Epworth Sleep Score result in reduction of quality of life ($r = -0.5$, $P = 0.001$). Higher prevalence of insomnia and poor sleep quality among shift workers were attributed to poor quality of life.

Therefore, it could be inferred that there was significant relationship between work place conditions and occurrence of sleep disorder among information technology professionals in Lagos State.

Conclusion
Based on the findings of this study, it was concluded that there was significant relationship between work place conditions and occurrence of work stress among information technology professionals in Lagos Stateas well as between work place conditions and occurrence of sleep disorder among information technology professionals in Lagos State.Based on the conclusions of this study, it was recommended that:

1. The government should initiate and develop workplace health and safety policies that addresses the relationship between work conditions and occurrence of certain health challenges like work stress, musculoskeletal disorders, computer vison syndrome and sleep disorders.

2. Government should embark on widespread awareness, education and training of employers on the need to have to a healthy work environment in order to boost efficiency, productivity and overall wellbeing of employees.

3. Government should provide research grants to research institutes and interested researchers concerned with embarking on current researches in a quest to promote the health of employees in different occupations and their predisposed health challenges.

References

Adama, O. (2018). Urban imaginaries: funding mega infrastructure projects in Lagos, Nigeria. *GeoJournal*, *83*(2), 257-274.

Afolayan, M. A., Fadeyi, O., and Nwachukwu, C. (2019). Relationship between workplace design, ergonomics and organizational performance: A case study of West African Examination Council (WAEC). *Strategii Manageriale*, 27 (1). 103-107

Ajidahun, A. T., and Phillips, J. (2013). Prevalence of musculoskeletal disorders among instrumental musicians at a center for performing arts in South Africa. *Medical Problems of Performing Artists*, *28*(2), 96-99.

Bakare, T. V. (2017). Safety education and training in industrial environments within Lagos State.

Bayram, M., Arpat, B., and Ozkan, Y. (2022). Safety priority, safety rules, safety participation and safety behaviour: The mediating role of safety training. *International Journal of Occupational Safety and Ergonomics*, *28*(4), 2138-2148.

Bureau of Labor Statistics. (2021, January26). 32 perecent of nonfatal injuries resulting in days away from work treated in emergency room in 2019. USBureau of Labor Statistics.https://www.bls.gov/opub/ted/2021/32-percent-of-nonfatal-injuries-resulting-in-days-away-from-work-treated-in-emergency-room-in-2019.htm

Chibuzor, C., and Alete, F. N. (2021). Hazards Associated with Computer Operations. *International Journal of Computer Science and Mathematical Theory*, *7*(1), 65-81.

Enone, L. L., Oyapero, A., Ijarogbe, O., Adeyemi, T. E., and Ojikutu, R. O. (2021). Ergonomic risks and prevalence of musculoskeletal disorders among dental surgeons in Nigeria: A descriptive survey. *Journal of International Oral Health*, *13*(5), 441.

Faisal Koko, A., Yue, W., Abdullahi Abubakar, G., Hamed, R., and Noman Alabsi, A. A. (2021). Analyzing urban growth and land cover change scenario in Lagos, Nigeria using multi-temporal remote sensing data and GIS to mitigate flooding. *Geomatics, Natural Hazards and Risk*, *12*(1), 631-652.

Fong, Y. L., and Mahfar, M. (2013). Relationship between occupational stress and turnover intention among employees in a furniture manufacturing company in Selangor. *Sains Humanika*, *64*(1).

Ghods, K., Abdoallahpour, A., Ahmadi, M., Mirmohammadkhani, M., Gohari, A., Emadi, A., and Pahlevan, D. (2017). The relationship between sleep disorders and quality of

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life in rotating shift workers at a textile factory. *Middle East Journal of Rehabilitation and Health Studies, 4*(3).

Heo, Y. S., Chang, S. J., Park, S. G., Leem, J. H., Jeon, S. H., Lee, B. J., ... and Kim, H. C. (2013). Association between workplace risk factor exposure and sleep disturbance: analysis of the 2nd Korean Working Conditions Survey. *Annals of Occupational and Environmental Medicine, 25,* 1-11.

Heo, Y. S., Chang, S. J., Park, S. G., Leem, J. H., Jeon, S. H., Lee, B. J., ... and Kim, H. C. (2013). Association between workplace risk factor exposure and sleep disturbance: analysis of the 2nd Korean Working Conditions Survey. *Annals of Occupational and Environmental Medicine, 25,* 1-11.

Igwe, K. O., and Olannye, V. E. (2022). office work related musculo-skeletal disorder (owrmsd) among secretarial professionals in ebonyi state government establishment. *Nigerian Journal of Business Education, 9*(2), 87-96.

International Labour Organization. (n.d.). Occupational safety and health. Retrieved May 11, 2023, from https://www.ilo.org/moscow/areas-of-work/occupational-safety-and-health/WCMS_249278/lang--en/index.htm

Iyanda, A.B and Odetayo YG. Relationship between knowledge and practice of occupational safety measures among workers in brewery companies in Ibadan and Ijebu-ode metropolis. *Nigerian School Health Journal* 35(1) 258-276

Larrea-Araujo, C., Ayala-Granja, J., Vinueza-Cabezas, A., and Acosta-Vargas, P. (2021). Ergonomic risk factors of teleworking in Ecuador during the COVID-19 pandemic: A cross-sectional study. *International Journal of Environmental research and public health, 18*(10), 5063.

Ogunbamowo, W. B., Oladipupo, B. O., Ashon, D. O., and Ligali, L. A. (2022). work environment of health professionals: an assessment of biological and psychosocial occupational health hazard in primary health centres in lagos state. *UNIZIK Journal of Educational Research and Policy Studies, 14*(1), 110-119.

Oladipupo-Okorie, B. O., and Viatonu, O. (2014). Influence of Family Characteristics and Cultural norms on Pre-marital sex among secondary school students in Ojo Local Government Area of Lagos State, Nigeria. *European Scientific Journal, 10*(5).

Olanipekun, A. S. (2013). The Effectiveness of the New Town Policy in Managing Growth and Congestion in Mega Cities: A Case Study of Lagos, Nigeria New Town Policy.

Raudenska, J., Steinerova, V., Javurkova, A., Urits, I., Kaye, A.D., Viswanath, O., and Varassi, G. (2020). Occupational burnout syndrome and post-traumatic stress among healthcare professionals during the novel coronavirus disease 2019 (COVID-19) pandemic. *Best Practice and Research Clinical Anaesthesiology, 34*(3), 553-560.

Schwalbe, K. (2015). *Information technology project management.* Cengage Learning.

Sharan, D., and Ajeesh, P. S. (2012). Effect of ergonomic and workstyle risk factors on work related musculoskeletal disorders among IT professionals in India. *Work, 41*(Supplement 1), 2872-2875.

Sharan, D., and Ajeesh, P. S. (2012). Effect of ergonomic and workstyle risk factors on work related musculoskeletal disorders among IT professionals in India. *Work, 41*(Supplement 1), 2872-2875.

Tafese, T. (2022). Digital Africa: How big tech and African startups are reshaping the continent.

Welch, L., Lewitter, F., Schwartz, R., Brooksbank, C., Radivojac, P., Gaeta, B., and Schneider, M. V. (2014). Bioinformatics curriculum guidelines: toward a definition of core competencies. *PLOS computational biology*, *10*(3), e1003496.

Zayed, H. A. M., Saied, S. M., Younis, E. A., and Atlam, S. A. (2021). Digital eye strain: prevalence and associated factors among information technology professionals, Egypt. *Environmental Science and Pollution Research*, *28*, 25187-25195.