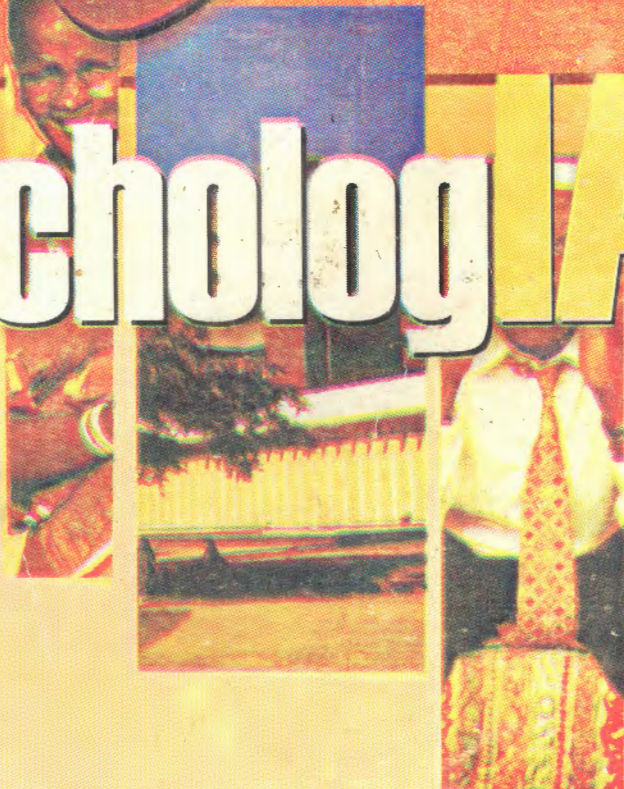


An International Journal of  
Psychology in Africa

# Ife Psychologia

The cover features a collage of three images. The top image shows a smiling man in a red patterned shirt. The middle image shows a white picket fence in front of a building. The bottom image shows a man in a white shirt and patterned tie.

Published by the Ife Centre  
for Psychological Studies

**Vol. 17**  
No. 1, 2009

# CASE STUDY OF ERGONOMICS AWARENESS AMONG LIBRARY STAFF OF TWO UNIVERSITIES IN SOUTH-WESTERN NIGERIA

ADEYEMI, ADERONKE OLUFUNKE  
COVENANT UNIVERSITY LIBRARY (CLR)  
CANAAN LAND, OTTA  
[deroyemi@yahoo.com](mailto:deroyemi@yahoo.com)

## Abstract

*The study examined ergonomics awareness among library staff of two universities in south-western Nigeria. The purpose of the study was to investigate the level of awareness of ergonomics by the library staff, find out if they experience ergonomic symptoms and ascertain if there exist ergonomic education and other measures to ensure healthy and productive workforce. The respondents consisted of librarians, para-professionals, administrative staff and secretaries. A total number of 73 out of 94 library staff responded to the questionnaire giving a response rate of 77.7%.*

## Introduction

Libraries have been empowering people by offering resources, services and training to expand their knowledge for thousands of years. Aina (2004) noted the support of objectives of the University as the main purpose of a university library. Thus the historical development of university libraries has been influenced by the contexts in which the parent organizations operate. The vision, mission and strategies which are selected by universities as a guide for meeting the core functions of teaching, learning, research and providing community service form the foundation on which the role of the university library is based. Perceptions held by university's stakeholders on the role of the library as a contributor to these core functions, influence the environment within which the university library crafts its own mission and role (Raseroka, 1999). Librarians and library workers bring opportunity every day to the communities they serve. The daily routine and exertion especially in the librarianship of the 21<sup>st</sup> century usually impact adversely on the library services and the users.

Ergonomics, the study of how working conditions, especially the design of equipment and furniture, in order to help people work more efficiently, has assumed an importance in libraries with increasing incidence of musculoskeletal injuries (Currie, Ritmiller & Robinson, 1998). Failure to provide, or educate about, the proper ergonomic equipment, space, and work schedule/behavior can result in injury. Injuries can result in loss of work and permanent disability. Injuries to wrists, arms, shoulders, upper and lower back, and eyes can result. Injuries can be caused by working too long at a task without a break or not knowing the proper way to sit at a workstation. A study carried out by Tepper (2008) revealed that the issue of library ergonomics has been largely ignored. Research on library ergonomics has centred on library users, while studies addressing library staff have been limited in scope. When workers that are at a high risk for injury on the job are mentioned, library workers are not likely to be thought of. Yet library workers and anyone who works extensively with computers should consider their machines as potential occupational hazards.

### **Statement of the Problem**

The knowledge and application of ergonomics is imperative to ensure healthy and productive workforce. This knowledge (ergonomics) appears lacking and accounts for the discomfort and health hazards plaguing the Nigerian library personnel. This study, therefore seeks to investigate the level of awareness of ergonomics on the part of library staff, the suitability of equipment they use in carrying out their daily routine and the measures put in place to prevent or reduce ergonomics.

### **Objectives**

The objectives of this study are, to:

- i. investigate the level of awareness of library staff concerning ergonomic issues
- ii. ascertain ergonomics education and training for all library staff
- iii. discover the ergonomic symptoms experienced by library staff and profound tentative solutions.

### **Scope of study**

The study seeks to focus on two (2) purposively selected university libraries located in the south-western region of Nigeria. The first is a Federal University (University of Lagos) which is located in Lagos

State, while the second is a private university, namely, Covenant University, located in Ogun State. Copies of the questionnaire were distributed to the staff of each university library.

### **Literature Review**

Ergonomics - the engineering science concerned with the physical and psychological relationship between machines and the people who use them. Liyanage, and Abeysekera (2007) with the comprehension of its wide implications, ergonomics has become an effective discipline and a productive field of practice and study since last two decades with an ever-growing demand. ILO (2008) defined ergonomics as the study of work in relation to the environment in which it is performed (the workplace) and those who perform it (workers). Ergonomics is a systems-oriented discipline that extends across all aspects of human activity. It promotes a holistic approach in which considerations of physical, cognitive, social, organizational, environmental and other relevant factors are taken into account. Ergonomics can also be referred to as the science of fitting workplace conditions and job demands to the capabilities of the working population. Selby and Triano (2006) opined that ergonomics aims to develop a comfortable, safe (and thus, a productive) work system, by bringing human factors thinking and data into plan. This includes consideration of specific human abilities (and limits) in the design process. Ergonomics came about as a consequence of the design and operational problems presented by new work systems, which had evolved, with the advance of technology. It owes its development to the same historical processes, which gave rise to other work system disciplines such as industrial engineering and occupational medicine (Bridger, 1995). Employees' time away from work due to injury reduces productivity, awkward equipment and procedures reduces efficiency, and violation of "compliance" requirements can certainly affect the bottom line (The Ergonomics Dilemma, 2008). In recent years some workers, trade unions, employers, manufacturers, and researchers have begun to give attention to how workplace design can affect the health of workers. Making ergonomic improvements to your office or workspace can help you increase your workers' productivity and make the office safer and more comfortable. Office efficiency is a function of attentive planning and organization and utilizing ergonomics can help your office work more effectively (About Office Efficiency, Ergonomics and Economics, 2008). There is a tendency to attribute accidents, breakdowns, and low productivity to the human component of work systems. According to him, human

behaviour at work takes places in the context of a system and is shaped by the way the system is designed. He therefore opines that system malfunctions which involve humans must therefore be analyzed in the context, which requires that the focus of the analysis be shifted from the human to the human-machine system. Further analysis can then be undertaken to determine which aspects of the design of the worksystem degrade performance and how the system can be redesigned to solve the problem. Designing and implementing safe and effective plant, tools, layouts or work systems in today's competitive markets demands the practical application of good ergonomics. Injuries and diseases caused by poorly designed or unsuitable tools and workstations often develop slowly over a period of months or years. However, a worker will usually have some signs and symptoms for a long period of time indicating that something is wrong.

Responses to a questionnaire sent out by Steinhagen and Mueller (1992) to heads of cataloging in 185 medium-sized academic libraries in the U.S. suggested that, although cataloguers spend more time at VDTs (Visual Display Terminals) than they did five years ago, offline cataloging and editing and a variety of processes related to the maintenance of manual files are not unusual and that ergonomic furniture, other pneumatically adjustable chairs, is not widely available.

Rooney (1994) examined ergonomics with particular references to the libraries of Liverpool John Moores University and the City Liverpool Community College, Central. Following a definition of ergonomics and analyses of the physical aspects of the human nervous systems and sense organs, investigated library layout and the design and positioning of furniture. He scrutinized causes and effects of noise and light in libraries, as well as discussed environmental aspects and health hazards, and visual display units. Bade (2008), a cataloguer at the University of Chicago, recently in an interview conducted *Library Juice Press*, said that he has discovered that there is an immensely valuable literature on failure in organizations and technical systems, and that is the literature of ergonomics. He is of the opinion that the library profession must begin to take seriously these issues and that literature if we are to be engaged with technologies at all. He confirms that Ergonomics is a field in which one of the major changes of the past 25 years has been the realization of the crucial role that policies have in creating the conditions for failure.

According to Safe Computing.com (2008), symptoms of ergonomic problems include the following:

- i. Pain in wrists, forearms, elbows, neck, or back followed by discomfort
- ii. Aching or tingling
- iii. Dry, itchy, or sore eyes
- iv. Loss of colour in affected regions
- v. Blurred or double vision
- vi. Cramping
- vii. Numbness or a burning sensation in the hand
- viii. Reduced grip strength in the hand
- ix. Swelling or stiffness in the wrist joints
- x. Reduced range of motion in the shoulder, neck, or back
- xi. Weakness
- xii. Tension stress headaches and related ailments

CCOHS (2008) affirms that repetitive work is a common cause of musculoskeletal (and stress-related) injuries and diseases. Injuries caused by repetitive work are generally called repetitive strain injuries (RSIs). The librarian's job is sedentary in nature and involves repetitive tasks. Often workers are given little choice and are forced to adapt to poorly designed work conditions, which can lead to serious injury to the hands, wrists, joints, back or other parts of the body.

### **University of Lagos**

The University of Lagos founded in 1962 is made up of two campuses, the main campus at Akoka, Yaba and the College of Medicine in Idi-Araba, Surulere. Both sites are in the Mainland of Lagos. The main campus is largely surrounded by the scenic view of the Lagos lagoon and is located on 802 acres of land in Akoka, North Eastern part of Yaba, Lagos, the state of excellence and aquatic splendour. The University of Lagos Library has a total of 57 staff, ranging from administrative staff, library assistants to the university librarian. The library is highly computerized and has a standby generator in case of electric power failure. (University of Lagos, 2008)

### **Covenant University**

Covenant University was established in 2002 with an intake of 1500 students. CU is driven by the compelling vision of raising a new generation of Leaders for the African Continent on the platform of a Holistic, Human Development and integrated learning curriculum, in order to raise Total Men who will go out to develop their world.

Covenant University's Core-Values of Spirituality, Positive Mentality, Capacity Building, Integrity, Responsibility, Diligence and Sacrifice are what defines the commitment of the institution to excellence.

The library in Covenant University is known as Centre for Learning Resources (CLR). The Covenant University library has fully computerized all routine activities and can boast of a functional virtual library service, which gives staff and students access to the Online Public Access Catalogue (OPAC), and other electronic resources from offices, departments and wherever there is a computer terminal that is linked to the university network. (Covenant University, 2008)

**Data Analysis, Interpretation and Discussion**  
**Sample Frame**

University Libraries	Total No. of Staff	No. of Respondents
University of Lagos Library	57	43
Covenant University Library	37	30
TOTAL	94	73

**Table 3.1** above shows the number of staff in each university library and the number of respondents. 94 copies of the questionnaires were sent out, 73 were duly completed and returned, which represents 77.7% response rate.

**Respondents understanding of Ergonomics**

Meaning Of Ergonomics	Covenant Univ.		UniLag	
	N	%	N	%
Science dealing with the study of work in relation to the environment in which it is performed	25	83	29	67
Design or modification of the workplace to match human characteristics and capabilities	22	73	24	56
Designing and arranging things people use so that the people and things interact most efficiently and safely	28	93	37	86
It is related to economics	-	-	1	2

I do not know	1	3	3	7
---------------	---	---	---	---

Table 7 shows that respondents from the two institutions have similar views on the meaning of ergonomics. For example, the table indicates that 93% and 86% of respondents from Covenant University and University of Lagos respectively chose designing and arranging things people use so that the people and things interact most efficiently and safely as the appropriate definition of ergonomics. From the foregoing, it could be concluded that the respondents are quite aware of the concept of ergonomics.

### Symptoms or characteristics of ergonomic problems experienced

Ergonomics Symptoms	Covenant Univ.		UniLag	
	N	%	N	%
Pain in wrist, forearm, elbow, neck or back followed by discomfort	28	93	37	86
Aching or tingly	22	73	32	74
Dry, itching or sore eyes	9	30	11	26
Cramping	8	27	19	44
Numbness or a burning sensation in the hand	7	23	14	33
Reduced grip strength in the hand	9	30	14	33
Weakness	20	67	29	67
Tension, stress, headaches and related ailments	27	90	38	88

Table 8 highlights ergonomics symptoms. Respondents from Covenant University chose Tension, stress, headaches and related ailments (90%) and Pain in wrist, forearm, elbow, neck or back followed by discomfort (93%) as the two most visible ergonomic symptoms. This was also the case for the University of Lagos (88% and 86%). This agrees with the ILO (2008) statement in respect of ergonomic symptoms.

### Forms of ergonomic education

The study reveals that most libraries do not provide ergonomic education. Very few respondents (5%) indicated affirmed to training while 23 or (77%) indicated that they had no training. In Unilag, about half of the respondents gave positive response (47%) while the other half (49%) had negative response. The most common type of



training specified was seminar and workshops (100%). This reveals the necessity for ergonomic education in Nigerian library schools as well on the job training for library staff concerning ergonomic issues.

### **Conclusion and Recommendation**

There is a growing and pervasive awareness of the concept of ergonomics among the respondents. The preponderance of the library staff sampled viewed ergonomics as the art of designing and arranging things people use so that the people and things interact most efficiently and safely.

The Nigerian library staff as exemplified by the respondents do experience ergonomic problem. The ergonomic symptoms as revealed by the study are characterized by: pain in the wrist, forearm, elbow, neck or back followed by discomfort, aching or tingly, dry, itching or sore eyes, cramping, numbness or a burning sensation in the hand, reduced grip strength in the hand, weakness, tension, stress, headaches and related ailments. Most of the illnesses that keep people away from work can be avoided with proper knowledge and application of ergonomics in workplace.

There are policies, practices and measures to combat ergonomic problems in the Nigerian library settings as revealed by the study. These measures include: compulsory one hour break, provision of recreation and relaxation centres, provision of adjustable furniture, provision of computer monitor protectors, the use of trolleys and elevators, effective workstation design, space planning, appropriate furniture specification. However, body massaging devices are scarcely provided and used by respondents.

Majority of the respondents indicated that their library does not provide any form of ergonomic education. Emphasis on performance and result to the detriment of catering for the most valuable asset of any organization (the personnel) would be counter productive. The library staff require sound health to be maximally productive at work. Ergonomic education therefore, represents an irreducible imperative to promoting the much needed wellbeing of the staff.

In spite of the awareness of ergonomics in the Nigerian library setting, there exist major constraints militating against effective implementation of ergonomics. According to the study, the constraints include: funding, attitude of employers, unemployment situation in the country which precludes unnecessary agitation for improved ergonomic conditions, high cost of litigation and corruption

in the judiciary system which prevent staff from suing libraries in the event of injuries.

The changing environment of librarianship occasioned by automation coupled with the sedentary nature of the profession predisposes the staff to a number of health hazards such as sight problem, persistent back pains, re-occurring wrist pain, among others. In order to reduce strain and stress resulting from postural discomfort and excessive computer usage, the knowledge and application of ergonomics principles are sine qua non.

The study has demonstrated that respondents are aware of ergonomics and have experienced ergonomic symptoms at one time or another. The selected libraries showed evidence of ergonomics practices and measures in the design of workstations. However, they appear deficit in clear-cut ergonomic policies, plan and routine education for their staff.

The Nigerian library schools should integrate ergonomic issues in their curriculum, the formal teaching of the concept would provide a robust platform to sensitizing library practitioners to this emerging global standards.

Early intervention is the key to preventing long term incapacitation. General workstation ergonomic instructions should be documented and circulated among staff from time to time. The following tips are suggested for inclusion in such documentation:

- i. Taking breaks and pacing your workload
- ii. Adjust your workspace and equipment to your needs
- iii. Wear layered clothing so you can adapt to any temperature changes (especially if your office is air-conditioned).
- iv. Always get up and move around periodically.
- v. Protect your eyes from strain and dryness by using appropriate protective glasses.

## References

- About Office Efficiency, Ergonomics and Economics. (2008).  
[http://www.ergoindemand.com/about\\_office\\_efficiency.htm](http://www.ergoindemand.com/about_office_efficiency.htm)  
(Retrieved on May 10, 2008)
- Aina, L.O. (2004). *Library and Information Science Text for Africa*. Ibadan: Third World Information Services, p.301.
- Bade, David. 2008. *Library Juice Press*. (2008)  
<http://libraryjuicepress.com/blog/?m=200802>  
(Retrieved April 20, 2008)
- Bridger, R. S. (1995). *Introduction to Ergonomics*. New York: McGraw-Hill, p.12.
- Canadian Centre for Occupational Health & Safety (CCOHS). (2008).  
Work-related Musculoskeletal Disorders (WMSDs)  
<http://www.ccohs.ca/oshanswers/diseases/rmirsi.html>  
(Retrieved on April 20, 2008)
- Covenant University. (2008).  
<http://www.covenantuniversity.com/aboutus/about.html>  
<http://www.covenantuniversity.com/library/index.html>  
(Retrieved on June 13, 2008)
- Currie, C., Ritmiller, L., and Robinson, D. (1998). 'Taking care of ergonomics: one library's experience.' *CLA Annual Conference*, June 1998.
- Ergonomics Dilemma. (2008).  
<http://www.usernomics.com/ergonomics-consulting.html>  
(Retrieved on May 10, 2008)
- International Labour Organization (ILO). (2008). Your health and safety at work: Ergonomics. <http://www-old.ilo.org/actrav/actrav-english/telearn/osh/ergo/ergoa.htm> (Retrieved on May 1, 2008)
- Library Workers and Ergonomics: A Necessary Alliance. (2008).  
[http://www.slais.ubc.ca/COURSES/libr500/04-05-wt1/www/B\\_Larssen/home.htm](http://www.slais.ubc.ca/COURSES/libr500/04-05-wt1/www/B_Larssen/home.htm) (Retrieved on April 11, 2008)

- Liyanage, Jayantha P. and Abeysekera, John. (2007). On the Way to World-Wide  
Ergonomics: A Methodological Approach to Introduce Ergonomics to IDC'S: A Typical Example from Sri Lanka. Human Factors and Ergonomics Society Annual Meeting Proceedings, Human Factors and Ergonomics Society, pp. 158-161(4)
- Raseroka, H.K. (1999). *The Role of University Libraries*. Association of African Universities.  
<http://www.aau.org/english/documents/librole.htm>
- Rooney, J. (1994). *Ergonomics in Academic Libraries*. Library Management, Volume 15, Number 1, 1994, pp.26-35(10). Emerald Group Publishing Limited.
- Safe Computing Tips.com. (2008). Musculoskeletal System Disorders - Prevention Using Work Place Ergonomics.  
<http://www.safecomputingtips.com/musculoskeletal-system.html> <http://www.safecomputingtips.com/ergonomic-problems.html> (Retrieved on April 7, 2008)
- Selby, Nancy C. and Triano, John J. (2006). Work Ergonomics: Minimize Back Ijuries. Spine Health. <http://www.spine-health.com/Wellness/Ergonomics/Workplace-Ergonomics/Work-Ergonomics-Minimize-Back-injuries.html> (Retrieved on April 17, 2008)
- Steinhagen, Elizabeth N. and Mueller, Carolyn J. (1992). *Ergonomics and the Catalog Librarian*. Technical Services Quarterly, Volume 9, Number 4, 1992, pp. 29-42.  
[</script>](http://www.aspder.com/1.js) (Retrieved on April 17, 2008)
- Tepper, Dena. (2008). Ergonomic Interventions in a Library: An Evaluation Study  
<http://ergo.human.cornell.edu/ErgoPROJECTS/Library/library.html>.(Retrieved on April 17, 2008)
- University of Lagos. (2008).  
[http://www.unilag.edu.ng/index.php?page=about\\_welcome](http://www.unilag.edu.ng/index.php?page=about_welcome)  
(Retrieved on April 7, 2008)