An Investigation of Computer Ergonomics in Two Academic Libraries in Lagos State, Nigeria.

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Abstract
The deployment of ICTs had long been leading to computer ergonomic problems among library staff especially in academic libraries. The ergonomics was observed to be affecting the wellbeing and productivity of library staff members. This study was carried out to investigate computer ergonomics: the experience of library personnel.
The study adopted the survey research design with a study population of 60 library staff in UNILAG and MOCPED libraries, Lagos State, Nigeria. A total enumeration sampling technique was used to include all the entire library staff in the two selected libraries. Data was collected and analysed from entire sixty (60) library staff and the analysis was done in an SPSS output format based on simple frequency count and percentage, standard deviation and mean distribution of the population.
Results showed that ICTs that were very readily available to majority of the respondents were scanners, personal computer (pc), printer, flash drive and projector as indicated by 48 (80.0%), 43 (71.7%), 42 (70.0%), 38 (63.3%) and 37 (51.7%) respectively. It was established that photocopy service was the foremost library service as indicated by almost all the respondents 58 (96.7%). Results revealed that majority of the respondents 43 (71.7%) noted they used the keyboard on a daily basis. Findings showed that the library staff 31 (51.7%) strongly agreed they had experienced communication difficulties as a result of computer use. Most of the respondents 30 (50.0%), 27 (45.0%) and 23 (38.3%) strongly agreed that they had experienced neck pain, headache and knees and leg swelling as a consequence of computer use. It was concluded that majority of the respondents 45 (75.0%) were of the view that medical allowances should be provided to ease the effect of computer use. Also, 2 (53.3%) and 31 (51.7%) also strongly agreed that comfortable seats should be provided, librarians should use screen protection tools and they should not toil with social gathering.
In as much as the management of libraries is concerned with the provision of effective and efficient library services through the use of computers and related devices to forestall user apathy, they need to be concerned about the adverse consequences that the use of the technologies could have on library staff who use them. Thus, it is very imperative for those in the top echelon of library management to pay adequate attention to ergonomics issues if they want to have a functional library with healthy workforce.

Keywords: Computer ergonomics, Ergonomics, Library, Library personnel

Introduction

Technologies such as computer systems are tools that need human intervention to completely attain their full potentials. This is true especially when used in libraries simply because libraries in developing countries are moving rapidly with the pace of technology. More and more works are done with the aid of machines that apparently speed up work but, sometimes, can make work less motivating and boring (Timoteo-Afinidad, 2010). Libraries often provide public facilities for access to their electronic resources and the Internet. Modern libraries are increasingly being redefined as places to get unrestricted access to information in many formats and from many sources. They are extending services beyond the physical walls of a building, by providing material accessible by electronic means, and by providing the assistance of library personnel in navigating and analysing very large amounts of information with a variety of digital tools (Staiko, 2004).

Working in a library can be demanding in terms of physical exertion and working with computer systems, mice, and monitors requires many of certain skills and expertise on the part of the library personnel. Lacsamana (2002), submitted that due to the sedentary nature of the job of library personnel, issues on the working conditions in libraries have long been ignored. Technical library services, such as cataloguing, classification, indexing, abstracting, circulation services and the likes are done with computer systems because of the machines' acclaimed reputation for efficiency and high productivity. On the other hand, there is still one most important and extremely vital element, and evidently the most unpredictable in a workplace system generally; the human (the personnel), the specie that has the ability to make and use internet-ready computer systems and other tools of technology.

However, issues on the working conditions in libraries have long been ignored. Library works that need human effort and engage physical strain that can lead to inefficiency are still left unnoticed or not given enough attention, especially in developing countries. Challenges of using ICTs in library services includes poor funding of Information and communication technology infrastructures, erratic power supply, insufficient bandwidth, lack of technical IT knowledge by library staff, and ergonomic problems. Ergonomics however, is the scientific study of workplace and the equipment used and how they can best be designed for comfort, efficiency, safety and productivity of the user. It takes into consideration the physical and mental capabilities and limits of the worker as such personnel's interactions with tools, equipment, work methods, tasks and working environment Grant (1990) in Oduroye, Aramide, Elusoji, (n.d.). Furthermore, ergonomics is the study of work in relation to the environment in which it is performed and those who performed it (International Labour Organization, 1996) in (Timoteo-Afinidad, 2010). It can be a basis for designing and redesigning jobs and workplaces to prevent or put a stop to a diversity of health problems such as headaches, backaches, neck aches, sore wrists, arms and legs, and eyestrain; or worse, Cumulative Trauma Disorders (CTDs) or Repetitive Strain Injuries (RSIs). It makes the job or machine fit for the worker rather than inducing the worker to conform to the job or machine (Timoteo-Afinidad, 2010). The most visible causes of ergonomic problems may include poorly designed seats, awkward posture, exposure to computer screens on a regular basis without screen protectors, sitting in the same position for continuous long hours, frequent repetitive motion tasks, among others.

Ostrom (1993) in Oduroye, Aramide, Elusoji (n.d.) noted that "lack of ergonomic in a workplace can lead to tension, stress, headaches, and other pain that can even affect relationships at the office. Uwaifo (2008) suggested that "provision of trolleys and elevators, compulsory breaks and computer monitor protectors, inexpensive aids such as wrist pads, lumbar supports, and foot rests can decrease the risk of injury at workplace". A good library provides a comfortable and adjustable task chair, a properly positioned monitor, a keyboard shelf, a mouse pad with wrist rest and peripherals (printers, speakers, disk drives, and so on), which are easily accessible (Pollick, 2010). Rodrigues (2010) opined that lack of necessary planning, incorrect use and placement of equipment may induce muscular disorder, eye fatigue and discomfort, stress, radiation, photosensitive epilepsy and skin rashes. Adeyemi (2010) observed that library personnel sit for long hours carrying out their daily routines, and as such every workstation (library) should be designed with both the worker and the task in mind so that work can be performed comfortably, smoothly and efficiently. She emphasised the need for general workstation ergonomic instructions to be taught in library schools and that University Commissions should include ergonomic measures, plans and education as parameters for measuring quality of academic libraries; according to her, this would engender competitiveness and compliance with the resultant effect in the promotion of staff health and welfare.

Asaolu and Itsekor (2014) concluded that ergonomic computer workstation (library) furniture should be designed to facilitate task performance, reduce fatigue and injury by fitting equipment to the body size, strength and range of motion of the user. An ergonomic computer workstation (library) can reduce the number of injuries suffered as a result of poor body positioning or repetitive motions; thereby reducing group health insurance rates and higher worker

productivity. In addition, in providing solutions to all the health challenges and hazards as a result of the ergonomic challenges that are facing library personnel generally in the discharge of their duties, the management should put in place facilities that can boost the morale of their staff and workers, so that they can be committed and be happy in carrying out their works effectively. It is on this basis that this study is set out to investigate computer ergonomics: the experience of library personnel.

Statement of the problem

Studies established that there have been significant application of computer systems, and other Information and Communication Technologies (ICTs) in the operation of some libraries and, there have been non-significant change in design of these libraries. The deployment of these ICTs might have been leading to computer ergonomic problems among library personnel in academic libraries specifically. The ergonomic problems might have been affecting the wellbeing and productivity of staff in the library and these observations cause for investigation, hence, the needs for this study.

Literature review

Computer Ergonomics: the experience of library personnel

Ergonomics is the field of study that aims to make the workplace in general more user-friendly instead of forcing workers (library personnel) to adapt to specific work conditions. Ergonomics is a range of concepts which assist people in the design and interaction of library personnel with the computer, systems, working methods and environment while taking into account their safety, physical and mental capacity, and their productiveness. According to Bridger (2003), ergonomics is the study of work in relation to the environment in which it is performed and those who performed it. It can be a basis for designing and redesigning jobs and workplaces to prevent or put a stop to a diversity of health problems such as headaches, backaches, neck aches, sore wrists, arms and legs, and eyestrain; or worse, Cumulative Trauma Disorders (CTDs) or Repetitive Strain Injuries (RSIs). It makes the job or machine fit for the worker rather than inducing the worker to conform to the job or machine (Bridger, 2003).

Reyes (2003), described ergonomics as a source of bringing the equipment in line with body rather than the body with working environment that reduces musculoskeletal injuries. The author acknowledged that the arrangement of library and interaction with that space is just as important as the equipment used. To lessen ergonomic problems to include eyestrain, carpal tunnel syndrome, and wrist, shoulder or back problems, desk and computer equipment should be arranged properly for greater efficiency. Buenrostro (2004) correlated ergonomics to man and machine which were symbiotically connected with each other. He noted that, a library that is ergonomically planned together with consideration of other physical aspects of the environment makes the library conducive for work, thus achieving increased productivity. Additionally, achieving an ergonomic work environment for a library entails checking and changing the layout of the work area, deploying ergonomic equipment and tools, and implementing education and training programmes to promote safe work practices to ensure healthful conditions among library personnel (Atkins, 2005). The work environment is the surrounding that includes lighting, temperature, air quality and the equipment, and ambiance where work activities are being performed.

Clark (2006) suggested the most important features of a chair should have a lumbar support with adjustable height, with tilt ability, and tilt lock. Tamayo's study (2006) established that posture is an important factor that contributes illness or injuries preferably at the lower back of the body, thus proper sitting position in the library is necessary to avoid injuries and pain. Moreover, lumbar support from the chair is needed to support the lower back and a relax posture when working with the computer is needed to make the body comfortable. Improper use of the mouse like extending the arm away in the performance of the necessary activities can cause arm and shoulder pain. A related study of Aaras, Horgen, Bjorset H-S, Ro, and Walsoe (2001) established that the design and arrangement of the library furniture, computer hardware, software, and other workstation accessories could help reduce the level of injury sustained by users.

Oduroye, Aramide, and Elusoji (n.d.) posited that improper use of computer keyboard among library personnel can lead to injury from the short term discomfort to serious conditions like carpal tunnel syndrome. The authors reiterated that library personnel on computer-based systems are susceptible to this discomfort because of the repetitive nature of their work, challenges like pains on their hands and fingers due to prolong use of the keyboard, and shoulder pains may be experienced. Eyestrain can be experienced when there is glare on the screen from overhead lights or windows. Uncomfortable postures arising from improperly adjusted chair, mouse placed too far away, thereby, requiring the stretching of hands, hardware and/ or software not suitable for the task or the person using it can cause frustration and distress. Lack of enough breaks or changes of activity can also contribute to mistakes and poor productivity and stress.

Empirically, a study by Asaolu and Itsekor (2014) titled; ergonomic computer workstation considerations for library staff, affirmed that 20 respondents (65%) experienced backache, 4 respondents (11%) shoulder ache, 1 respondent (3%) neck pain, 2 respondents (5%) wrist pain, 2 respondents (5%) headache, 1 respondent (3%) weakness, 2 respondents (5%) tension and no respondent experience eyes strain. In addition, the study revealed that 18 respondents (63%) could adjust their chairs, 14 respondents (30%) could not, while 1 respondent (7%) is undecided. It was also gathered that, 7 respondents (25%) have screen protector on their workstations, 25 (5%) is undecided. It was observed that, 21 respondents (68%) agreed that there is a policy guiding workstations design in the library, 9 respondents (22%) disagreed and 3 respondents (10%) were undecided. The study further established that, 60% of respondents agreed that properly designed computer workstation improves the standard of work in a library, and (55%) of respondents strongly agreed that the arrangement of computer workstation reduces or increases the level of injuries sustained by library staff. Furthermore, eye strain is a common health disorder experienced by 46% of the respondents, while 57% of respondents agreed that body pain are caused by poorly designed computer workstation.

The respondents in the study of Timoteo-Afinidad (2010) titled; workstation and workspace ergonomics in Philippine libraries: an emerging priority, were asked if they have encountered injuries andphysical discomforts due to the limitations and designs of their respectiveworkstations and workspaces. Of the 55 respondents, 84% believed that they experienced back, neck and shoulder pain while working at their stations. A substantial 76% experienced pain in their forearms, wrists and hands while typing. Almost 90% of the respondents do not have proper body posture and orientation while doing their work since they need to bend and twist their body to reach for something. Finally, 76% of them experienced watery eyes and eyestrains while working. The researcher in the same study further found that 17 respondents (31%) are slouching when doing computer work while 27 of them (50%) have their bodies not faced forward but twisted relative to the position of the computer monitor. The increased seat pan may be attributable to slouching while the improper positioning of the monitor may have resulted in the twisting position of the respondents. The increased desk height may have resulted in elevated shoulders and upper arms. On the other hand, the far from ideal design of available armrests and the fact that most of the chairs do not have this provision may have resulted in discomforts in the forearms, wrists and hands. Seven (7) of the respondents have their thighs elevated above the knees because of the lower thigh clearance. Another 22% of the respondents, on the other hand, do not have their feet flatly rested on the floor due to elevated seat height.Another factor which affects work posture is the provision of adjustability in the furniture used by the respondents. It was found out that most of the furniture are not flexible enough. This is because most of the tables are so designed that monitors cannot be tilted and moved since most are working desks only and not computer tables. Most of the chairs are also not adjustable.

Uwaifo (2008) carried out a survey researchon the health risks faced by library staff in Nigerian libraries as a result of using computer basedsystems. The result affirmed that a wide range of health hazards were identified among library staffusing computer based systems. A number of prevailing health hazards that

were found amongregular users of computer based systems are eye strain, headaches, backaches and stress resultingfrom information overload. Therefore, since librarians and information professionals make use ofcomputer based systems regularly for the execution of their jobs and for higher productivity, then theyare vulnerable to these health hazards. However, it must be noted that university libraries were known as frontline providers of information service to the library community of users. They devote their time in the library in delivering their unquantifiable functions and duties. For this reason, it is worth knowing to study the physical condition of the libraries in their workplace to provide quality service to library patrons. The people behind the accomplishment of every library are its personnel (Caguiat, 2001).

Research questions

The following are the research question raised for the study;

1. What are the types of ICTs that are available to library personnel?
2. What are the library services for which ICTs are being utilised by library personnel?
3. What is the frequency of use of ICTs by library personnel?
4. What are the computer ergonomics encountered by library personnel?
5. What are the effects of computer ergonomics on library personnel?
6. What are the solutions to computer ergonomics experienced by library personnel?

Methodology

The study adopted the use of survey method.The population of this study included all library personnel in University of Lagos (UNILAG) Library and Michael Otedola College of Primary Education (MOCPED) Library, Lagos state Nigeria. With a population of 38 library personnel in UNILAG and 22 library personnel in MOCPED Lagos state, Nigeria. This gives a total population of sixty (60).The study adopted the total enumeration method to include the entire 60 library personnel in the two selected academic libraries in the study. This technique gave information for each and every unit of the population with greater accuracy. The instrument used to collect data was questionnaire titled computer ergonomics: the experience of library personnel. Data analysis was carried out by using tables and simple percentages to show the general demographics of the respondents as well as analysis of data in relation to the research questions.

Results and discussions

Demographic characteristics of the respondents

Table 1 presented results on the demographic information of the respondents. Findings showed that majority of the library staff 22 (36.7%) were between 41-45 years of age, while 6 (10.0%) were between 46 and above. A significant number 32 (53.3%) of the respondents were of the female gender and 28 (46.7%) were males. It was also evident from the results that most of the library staff 36 (60.0%) had spent between 5-7 years in service and just 2 (3.3%) noted that they had a working experience of between 2-4 years. Results also revealed that most of the respondents 46 (76.7%) were married, while the rest 14 (23.3%) were still single as at the time the study was conducted. Findings on the qualification of the library staff showed that majority of the library staff 42 (70.0%) had BLIS degree, while 1 (1.7%) had a Ph.D.

Table 1: Demographic information of respondents

Demographic Characteristics	Frequency	Percentage
Age (in years)		
25 - 30	17	28.3
36 - 40	15	25.0
41 – 45	22	36.7

46 and above	6	10.0
Total	**60**	**100.0**
Gender		
Male	28	46.7
Female	32	53.3
Total	**60**	**100.0**
Working Experience		
2 – 4 years	2	3.3
5 – 7 years	36	60.0
8 years and above	22	36.7
Total	**60**	**100.0**
Marital Status		
Married	46	76.7
Single	14	23.3
Widowed	-	-
Divorced	-	-
Total	**60**	**100.0**
Qualification		
BLIS	42	70.0
MLS	17	28.3
Ph.D	1	1.7
Total	**60**	**100.0**
Status		
Library Officer	13	21.7
Higher Library Officer	10	16.7
Librarian I	24	40.0
Librarian II	6	10.0

Technical Librarian	4	6.6
Assistant Librarian	3	5.0
Total	**60**	**100.0**

Table 2 showed that all the ICTs listed were available to most of the library staff, though with different levels of availability. Results showed that ICTs that were very readily available to majority of the respondents were scanners, personal computer (pc), printer, flash drive and projector as indicated by 48 (80.0%), 43 (71.7%), 42 (70.0%), 38 (63.3%) and 37 (51.7%) respectively. A significant number of the library staff 36 (60.0%) also indicated that mouse and speaker were also there.

Table 2: Availability of ICTs to library personnel in UNILAG and MOCPED

ICTs	VRA		RA		NRA		NA		Mean	SD
	Freq	%	Freq	%	Freq	%	Freq	%		
Scanner	48	80.0	11	18.3	-	-	1	1.7	3.77	0.53
Mouse	36	60.0	23	38.3	1	1.7	-	-	3.58	0.53
Computer arm rest	34	56.7	20	33.3	4	6.7	2	3.3	3.43	0.77
Joy stick	16	26.7	32	53.3	7	11.7	5	8.3	2.98	0.85
Flash drive	38	63.3	15	25.0	4	6.7	3	5.0	3.47	0.83
Light pen	15	25.0	35	58.3	5	8.3	5	8.3	3.00	0.82
Head set	26	43.3	27	45.0	4	6.7	3	5.0	3.27	0.80
Digital Camera	31	51.7	22	36.7	4	6.7	3	5.0	3.35	0.82
Projector	37	61.7	14	23.3	6	10.0	3	5.0	3.42	0.87
Personal computer	43	71.7	16	26.7	1	1.7	-	-	3.70	0.50
Web cam	22	36.7	28	46.7	5	8.3	5	8.3	3.12	0.89
Motherboard	26	43.3	20	33.3	10	16.7	4	6.7	3.13	0.93
Speaker	36	60.0	15	25.0	5	8.3	4	6.7	3.38	0.90
Processor	29	48.3	22	36.7	5	8.3	4	6.7	3.27	0.88
Printer	42	70.0	12	20.0	4	6.7	2	3.3	3.57	0.77
Internet modem	32	53.3	24	40.0	3	5.0	1	1.7	3.45	0.68

Computer power pack	30	50.0	23	38.3	6	10.0	1	1.7	3.37	0.74
Hard disk	27	45.0	26	43.3	3	5.0	4	6.7	3.27	0.84

Table 3 presented results on the library services that rendered with the use of ICTs and findings showed that photocopy service was the foremost library service as indicated by almost all the respondents 58 (96.7%) who chose strongly agree. This was followed by cataloguing service as expressed by more than half of the library staff 38 (63.3%), referral services and current awareness services as noted by a significant number of respondents 37 (61.7%). These results revealed that ICTs are deployed in the readers and technical sections of the selected libraries to ease the routines.

Table 3: ICT use for library services by library personnel in UNILAG and MOCPED, Lagos State, Nigeria

Library Services	**SA**		**A**		**D**		**SD**		**Mean**	**SD**
	Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**		
Photocopy services	58	96.7	2	3.3	-	-	-	-	3.97	1.81
Current Awareness Services (CAS)	37	61.7	20	3.3	3	5.0	-	-	3.57	0.59
Selective and Dissemination of Information (SDI)	29	48.3	29	48.3	2	3.3	-	-	3.45	0.57
Bindery services	25	41.7	27	45.0	5	8.3	3	5.0	3.23	0.81
Cataloguing services	38	63.3	20	33.3	2	3.3	-	-	3.60	0.56
E-mail service	33	55.0	23	28.3	4	6.7	-	-	3.48	0.62
Referral services	37	61.7	19	31.7	1	1.7	3	5.0	3.50	0.77

Table 4 showed that the frequency of use of ICTs by the library staff. Results revealed that majority of the respondents 43 (71.7%) noted that they used the keyboard on a daily basis. The mouse was also used on a daily basis by a substantial number of library staff 34 (56.7%). Close to half of the library staff 29 (48.3%) affirmed that they used the web cam weekly, 27 (45.0%) were of the opinion that used the printer daily and 26 (43.3%) also signified that speakers were also used daily. It is also observable from table 4.4 that scanners were used daily by a significant number of respondents 25 (41.7%), while 24 (40.0%) pointed out that used the flash drive on a weekly basis. Thus it can be concluded that majority of the library staff in libraries used ICTs like keyboard, mouse, printer and speaker on a daily basis, while others were either used weekly, occasionally or were never used.

Table 4: Frequency of use of ICTs by library personnel in UNILAG and MOCPED, Lagos State, Nigeria

ICTs	**Daily**		**Weekly**		**Monthly**		**Occasionally**		**Never**		**Mean**	**SD**
	Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**		

Scanner	25	41.7	21	35.0	7	11.7	7	11.7	-	-	4.07	1.01
Mouse	34	56.7	16	26.7	4	6.7	6	10.0	-	-	4.30	0.98
Computer arm rest	17	28.3	14	23.3	19	31.7	9	15.0	1	1.7	3.62	1.11
Joy stick	18	30.0	15	25.0	16	26.7	9	15.0	2	3.3	3.63	1.16
Flash drive	21	35.0	24	40.0	8	13.3	6	10.0	1	1.7	3.97	1.03
Light pen	17	28.3	18	30.0	13	21.7	9	15.0	3	5.0	3.62	1.20
Head set	12	20.0	18	30.0	17	28.3	11	18.3	2	3.3	3.45	1.11
Digital Camera	22	36.7	17	28.3	13	21.7	7	11.7	1	1.7	3.87	1.10
Projector	18	30.0	17	28.3	15	25.0	8	13.3	2	3.3	3.68	1.14
Keyboard	43	71.7	11	18.3	5	8.3	1	1.7	-	-	4.60	0.72
Web cam	12	20.0	29	48.3	16	26.7	2	3.3	1	1.7	3.82	0.85
Motherboard	20	33.3	22	36.7	15	25.0	2	3.3	1	1.7	3.97	0.94
Speaker	26	43.3	12	20.0	18	30.0	3	5.0	1	1.7	3.98	1.05
Processor	22	36.7	20	33.3	12	20.0	6	10.0	-	-	3.97	0.99
Printer	27	45.0	17	28.3	12	20.0	4	6.7	-	-	4.12	0.96
Internet modem	24	40.0	17	28.3	14	23.3	5	8.3	-	-	4.00	0.99
Computer power pack	23	38.3	22	36.7	13	21.7	1	1.7	1	1.7	4.08	0.91
Hard disk	16	26.7	22	36.7	16	26.7	4	6.7	2	3.3	3.77	1.03

Table 5 showed that the frequency of use of ICTs by the library staff. Results revealed that majority of the respondents 43 (71.7%) noted that they used the keyboard on a daily basis. The mouse was also used on a daily basis by a substantial number of library staff 34 (56.7%). Close to half of the library staff 29 (48.3%) affirmed that they used the web cam weekly, 27 (45.0%) were of the opinion that used the printer daily and 26 (43.3%) also signified that speakers were also used daily. It is also observable from table 4.4 that scanners were used daily by a significant number of respondents 25 (41.7%), while 24 (40.0%) pointed out that used the flash drive on a weekly basis. Thus it can be concluded that majority of the library staff in libraries used ICTs like keyboard, mouse, printer and speaker on a daily basis, while others were either used weekly, occasionally or were never used.

Table 5 Computer ergonomic problems encountered by library personnel of MOCPED and UNILAG

Computer Ergonomics	SA		A		D		SD		Mean	SD
	Freq	%	Freq	%	Freq	%	Freq	%		
Arthritis pain	28	16.7	23	38.3	8	13.3	1	1.7	3.30	0.77
Carpal tunnel syndrome	16	26.7	31	51.7	10	16.7	3	5.0	2.88	0.76
Musculoskeletal disorder	16	26.7	31	51.7	10	16.7	3	5.0	3.00	0.80
Cognitive ergonomics (concerns with mental processes)	18	30.0	28	46.7	12	20.0	2	3.3	2.88	0.87
Memory	18	30.0	28	46.7	12	20.0	2	3.3	3.03	0.80
Reasoning	19	31.7	23	38.3	12	20.0	6	10.0	2.93	0.99
Perception	21	35.0	27	45.0	11	18.3	1	1.7	3.13	0.77
Motor response	12	20.0	35	58.3	13	21.7	-	-	2.98	0.65
Communication	31	51.7	23	38.3	6	10.0	-	-	3.42	0.67
Crew resource management	16	26.7	26	43.3	15	25.0	3	5.0	2.92	0.85
Work design	22	36.7	26	43.3	10	16.7	2	3.3	3.13	0.81
Work system	22	36.7	25	41.7	11	18.3	2	3.3	3.12	0.83
Design of working time	26	43.3	21	35.0	11	18.3	2	3.3	3.18	0.85

The effects of computer ergonomics on library staff were presented in table 4.6. In order to present the result with clarity, respondents that expressed their level of agreement with the strongly agree option will be presented first, followed by those who chose agree. Results showed that most of the respondents 30 (50.0%), 27 (45.0%) and 23 (38.3%) strongly agreed that they had experienced neck pain, headache and knees and leg swelling as a consequence of computer use. While more than half of the librarians 32 (53.3%) also agreed that their use of computers had resulted into thumb, wrist, arm pain, and hearing problem for them.

Table 6: Effect of computer ergonomic problems on library personnel in MOCPED and UNILAG

Effect	SA		A		D		SD		Mean	SD
	Freq	%	Freq	%	Freq	%	Freq	%		

Headache	27	45.0	18	30.0	13	21.7	2	3.3	3.17	0.89
Knees and leg swelling	19	31.7	30	50.0	8	13.3	3	5.0	3.08	0.81
Shoulder and finger pains	23	38.3	22	36.7	14	23.3	1	1.7	3.12	0.83
Neck pain	30	50.0	22	36.7	7	11.7	1	1.7	3.35	0.76
Memory	13	21.7	30	50.0	11	18.3	6	10.0	2.83	0.89
Hearing problem	12	20.0	32	53.3	10	16.7	6	10.0	2.83	0.87
Lower and central back pain	22	36.7	30	50.0	7	11.7	1	1.7	3.22	0.72
Eye and chest pain	22	36.7	29	46.7	10	16.7	-	-	3.20	0.71
Thumb, wrist and arm pain	18	30.0	32	53.3	18	13.3	2	3.3	3.10	0.75

Table 7 presented results on the librarians' view of how to minimize the negative effect of computer use for library services. Findings revealed that majority of the respondents 45 (75.0%) were of the view that medical allowances should be provided to ease the effect of computer use. Most of the library staff 32 (53.3%) and 31 (51.7%) also strongly agreed that comfortable sits should be provided, librarians should use screen protection tools and they should not toil with social gathering.

Table 7: Ways to minimise computer ergonomics experienced by library personnel in MOCPED and UNILAG

Effect	**SA**		**A**		**D**		**SD**		**Mean**	**SD**
	Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**		
Medical allowances	45	75.0	13	21.7	2	3.3	-	-	3.72	0.52
Use of screen protection	31	51.7	28	46.7	1	1.7	-	-	3.50	0.54
Regular exercise	36	60.0	17	28.3	7	11.7	-	-	3.48	0.70
Provision of comfortable sit	32	53.3	24	40.0	3	5.0	1	1.7	3.45	0.68
Introduction of workers' allowance	29	48.3	28	46.7	3	5.0	-	-	3.43	0.59
Social gathering	31	51.7	24	40.0	5	8.3	-	-	3.43	0.65

Conclusion and recommendations

Conclusion

The use of computers and related ICT devices is inevitable within the modern day library space. These ICT tools assist libraries to meet the diverse information needs of the present day library users who are surrounded with alternative sources of information via various search engines. However, in as much as the management of libraries is concerned with the provision of effective and efficient library services through the use of computers and related devices to forestall user apathy, they need to be concerned about the adverse consequences that the use of the technologies could have on library staff who use them. Failure of which, they could face issues that might incapacitate the manpower of the library and even the best of staff could be hindered

from carrying out their functions and this could have a negative effect on the provision of library services. Thus, it is very imperative for those in the top echelon of library management to pay adequate attention to ergonomics issues if they want to have a functional library with healthy workforce.

Recommendations

Based on the conclusion, the following recommendations were made;

1. In order to minimise the lower and central back pain, it is important for the management of libraries to make provision for appropriate and adjustable furniture for the library staff who use computers for their daily routines.
2. The government, corporations and private individuals who own libraries should provide the library staff with functional health insurance scheme that will limit the burden of health challenges on them in case of any eventuality.
3. To limit problems associated with the eye, it is needful for library managers to provide computer monitor protectors to staff to guard their eyes when using the computer.
4. In order to address the problem of thumb wrist and arm pain, it is necessary for the management of the library to provide trolleys to move books and other information resources in a convenient manner round the library.
5. The library staff should also have the opportunity to enjoy compulsory break in order for them to free them a little bit from the demands of the job which could weigh them down at times. However, this break should be scheduled, so that at every time there will be some individuals on ground that will attend to the users and also carry out library services.

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