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# Staff Awareness of Ergonomics Principles Required at the Computer Workstation: Case Study of University of Jos Library

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**Staff Awareness of Ergonomics Principles required at the Computer Workstation: Case study of University of Jos Library**

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**Abstract**

*The present study was designed to investigate the staff awareness of ergonomics principles required at the University of Jos Library computer workstation. The methodology adopted was the case study. The target population comprised of all the library staff available as at the time of the study. Total enumeration method was used to obtain the relevant data from the respondents because the population was not too large. Out of the 129 copies of questionnaire distributed 119 were filled and returned. However, only 36(30.25%) respondents indicated that they use the computer to perform library tasks. Therefore only 36 copies of the questionnaire were found suitable for use. Based on the analyses of the 36 copies of questionnaire, it was revealed that the major type of computer used to perform library tasks is desktop 24 (66.66%), while the major type of task performed with the computer is task in the subject libraries 15(41.66%). Also from the finding, majority of the respondents 14(38.88%) indicated that they have been using the computer to perform library tasks for a period of 1-5 years and majority of the respondents 19(52.77%) also indicated that they use the computer to perform tasks for 7-8 hours per working day. But with regards to their comfort at the computer workstation, majority of the respondents are slightly comfortable. This was revealed through the weighted mean of 2.33(58.25%). Further findings of the study revealed that out of the 36 respondents that use the computer to perform library tasks, 34(94.44%), 29(80.55%), 25(69.44%), 18(50%) and*

22(61.11%) of the respondents are very aware that eye strain, back-ache, shoulder-ache, head-ache and stress are computer-related illnesses. Also, 32 (88.88%) of the respondents indicated that they sometimes experience eye strain in the course of using the computer to perform library tasks, while 23 (63.88%), 15(41.66%), 12(33.33%) and 18(50%) respondents indicated that they sometimes experience back-ache, shoulder-ache, head-ache and stress respectively. More so, 16(44.44%) of the respondents have ascertained through a medical practitioner that the illnesses they sometimes experience in the course of using the computer to perform library tasks are actually computer- related illnesses. However, 21 (58.33%) of the respondents are not aware of the meaning of the word 'ergonomics'; 18(50%) of the respondents are not aware that they are supposed to maintain a good sitting posture at the computer workstation; and 21(58.33%) of the respondents are not aware that they are also supposed to maintain a good working posture of the arms and wrists while using the computer to perform task . Furthermore, 14(38.88%) of the respondents are moderately aware that they are supposed to stand up and move around regularly when using the computer to perform library tasks for long hours, while 16(44.44%) of the respondents are also moderately aware that staring at the screen of the computer for too long can have some negative effects on their eyes. The weighted mean is 2.39 (59.85). This implies that averagely majority of the respondents are slightly aware of the ergonomics principles required at the computer workstation. Further findings also revealed that majority of respondents slightly comply with the ergonomics principles required at the computer workstation. This was identified through the weighted mean which is 2.38 (59.62%). Therefore, based on the findings of the study, it was recommended amongst others that the library management should design a more ergonomics friendly computer workstation for the staff. The library management should also organize staff training on ergonomics principles required at the computer workstation. Thereafter, the staff should re-design their workstations to best suit their comfort and at the same time they should comply with the ergonomics principles learnt from the training. Finally, the library staff should endeavor to go for routine medical checkups so as to ensure early detection and treatment any form of illness that is trying to arise in the course of performing library tasks be it computer –related or not.

**Key words: Staff, awareness, ergonomics, principles, library and computer workstation**

## **Introduction**

Academic library work environment is usually made up of the library staff, the users of the library, the physical facilities and the resources. The advent of Information and Communication Technology (ICT) has introduced new facilities to the already existing facilities in the library work environment. These days, library staff use ICT facilities such as computers, printers and scanners to perform one form of task or the other. ICT facilities especially computers are being used in circulation section, cataloguing section, reference section and other sections of the library. Computers are being used to perform tasks that were performed manually in the past, thus giving some form of relieve to the staff that use them and at the same time exposing the staff to new forms of illnesses that were uncommon before the introduction of computers into the library work environment.

Computer- related illnesses are some form of illnesses that usually arise in the course of using computer for one purpose or the other. For people to use computers without developing illnesses there are some rules and regulations commonly referred to as ergonomics principles that they need to comply with. The word “ergonomics” is an English word that originated from two Greek words: “ergon” which means work and “nomoi” which means law. The International Ergonomics Association (2000) defines ergonomics as the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimize human well-being and overall system performance. Ergonomics is also referred to as biotechnology, human factor or human engineering.

Factors such as poorly designed computer workstations, lack of awareness by the computer user of the ergonomics principles required at the workstation and non- compliance to the ergonomics principles could trigger computer-related illnesses.

The American Federation of State, Country and Municipal Employees, (2019) mentioned some common computer-related illnesses. They include repetitive strain injuries, Computer Vision Syndrome and musculoskeletal illnesses. Similarly, the American College Health Association (2018) mentioned three notable medical problems that could arise from using computers. They include: Carpal Tunnel Syndrome (repetitive strain injuries), Computer Vision Syndrome (eye strain and eye tiredness) and musculoskeletal problems (pain in the shoulder, neck, lower and upper back). The Department of Health and Human Services, State Government of Victoria,

Australia (2018) also highlighted the potential problems associated with computer use to include physical discomforts, pain or injury, visual discomfort, stress and fatigue.

In University of Jos Library work environment, computers are used by staff to perform one task or the other. These computers are usually mounted on tables in the staff offices and staff normally use them to perform tasks in a sitting position.

### **Statement of the problem**

In the course of using computers to perform library tasks by staff, from observation, at times some staff complain of certain illnesses such as eye strain, head-ache, shoulder-ache and back-ache. These illnesses that the staff complain of could be computer-related illnesses. However, it appears that some of the library staff who use computers to perform tasks are ignorant of the safety measures needed to be taken in order to avoid developing computer –related illnesses. Hence, it is against this backdrop that this study was designed to examine staff awareness level of the ergonomics principles required at the computer workstation.

### **Significant of the study**

The present study is significant because the findings would greatly assist University of Jos Library management and management of other establishments whose staff also use computers to perform tasks, to evaluate the need to re-design their computer workstations to better suit their staff. The findings of the study would also assist them to evaluate the need to organize staff training on ergonomics principles required at the computer workstation in order to safe-guard the health of their staff against computer-related illnesses.

### **Objectives of the study**

The general objective of the study is to determine staff awareness level of ergonomics principles required at the computer workstation.

The specific objectives are to:

- a. find out the number of staff that use computer to perform library tasks
- b. find out the type of computer staff use to perform library tasks
- c. find out the type of library tasks staff perform with the computer

- d. find out the duration of time spent by the staff while using computer to perform library tasks
- e. find out the staff point of view about their comfort while using computer to perform library tasks
- f. find out the staff awareness level about some common computer- related illnesses
- g. find out the staff point of view about the computer- related illnesses they may have been experiencing in the course of using computer to perform library tasks
- h. find out the staff awareness level about the ergonomics principles required at the computer workstation
- i. find out the staff compliance level with the ergonomics principles

### **Research questions**

1. How many staff use computer to perform tasks in the library?
2. What type of computer are the staff using to perform library tasks?
3. What type of library task do the staff perform with the computer?
4. What is the duration of time spent by the staff while using computer to perform library tasks?
5. What is the staff point of view about their comfort, while using computer to perform library tasks?
6. What is staff awareness level about some common computer- related illnesses?
7. What are the computer-related illnesses being experienced by staff in the course of using computer to perform library tasks?
8. What is the staff awareness level about the ergonomics principles required at the computer workstation?
9. What is the staff compliance level with the ergonomics principles?

### **Review of Related Literature**

The present era commonly referred to as the “computer era” is an era in human history that is characterized by the widespread use of computers in the handling of information. Thus, these days, computers are used by many individuals and organizations for different purposes and they could be found in places such as homes, schools, banks, business firms, hospitals and libraries.

Libraries engage the use of computers to carry out tasks which include selection, acquisition and processing of resources. However, wherever computers are being used whether at home, at school or in a library environment, there is need for the workstation to be designed with ergonomics principles in order to safeguard the health of the users. Thus, failure to apply ergonomics principles at the computer workstation could lead to users developing some computer-related illnesses in the course of time.

Computer- related illnesses usually arise due to the wrong use of computers by users. These illnesses are avoidable in most cases if the correct ergonomics principles are applied at the workstations. However, Singh (2018) opines that many computer users only change poor computing practices after they have already become ill.

The American Federation of State, Country and Municipal Employees (2019), the American College Health Association (2018) and the Department of Health and Human Services, State Government of Victoria, Australia (2018) discussed some common computer related illnesses as summarized below:

i. Carpal Tunnel Syndrome or Repetitive Strain Injury (RSI) is a painful condition of the hands and wrists caused by carrying out repetitive tasks such as typing for prolonged periods using the keyboard and mouse. Some symptoms of Carpal Tunnel Syndrome are numbness and tingling of the hands. Some ergonomics principles required at the computer workstation in order to avoid Carpal Tunnel Syndrome include the reduction of high rate of repetitive tasks using the hands and wrists, resting the hands and wrists regularly and typing with light and gentle strokes on the keyboard.

ii. Computer Vision Syndrome is an illness of the eyes caused by staring at the screen of the computer for long periods. Some symptoms of Computer Vision Syndrome include eye fatigue, blurred vision, itchy eyes and headaches. Some ergonomics principles required at the computer workstation in order to avoid Computer Vision Syndrome include taking regular breaks at the computer workstation, tilting the computer screen slightly to avoid reflection or glare and having regular eye examination.

iii. Stress is the physical, mental or emotional strain or tension caused by factors such as uncomfortable temperatures, equipment and furniture that are not the right shape or size, repetitive tasks and lack of breaks during works. Workers suffering from job stress may

experience frequent headache, sleeplessness, loss of appetite, depression, stomach ulcers, high blood pressure, and heart diseases. Some of the ergonomics principles required at the computer workstation in order to avoid stressful conditions include: working under proper lighting conditions, favorable temperatures and humidity, quiet work environment, having regular breaks at the computer workstation and the use of the right shape and size of equipment and furniture at the computer workstation.

iv. Musculo-Skeletal Injury is an injury of the muscles, tendons and nerves which usually arise as a result of accidents or repetitive activities. Some symptoms of Musculo-Skeletal Injury include pain in the shoulder, neck and back. Some ergonomic principles required in order to prevent Musculo-Skeletal Injury at the computer workstation include: the use of an ergonomics chair that is specially designed to help the spine hold its natural curve, taking frequent short breaks at the computer workstation and stretching the body regularly at the computer workstation.

According to the University of Michigan Health Services (2019) computer users experiencing computer-related illnesses should seek medical help when they are: in constant pain, having the feeling of numbness in the wrists and hands, having the feeling of weakness or experiencing other problems that interfere with their daily tasks.

Findings of a recent survey conducted by Shikdar and Alkindi (2015) on office ergonomics: deficiencies in computer workstation design reveals that 58%, 45% and 43% of the respondents reported experiencing eye strain, shoulder pain and back pain in the course of using computers to perform tasks. In a related work, Rajan, Pillai and Jayalatha (2016) also carried out a survey on “Ergonomics and library professionals: a case study of University of Kerala”, in India. From the findings of the research, 59% of the respondents reported suffering from problems related to the lower arm and wrist in the course of using computer to perform tasks. Also, 65% of the respondents reported suffering from blurred vision, irritation and headache, while 66% of the respondents reported suffering from back-ache, neck pain and shoulder pain. Further findings revealed that 44% of the respondents have consulted a doctor with regards to the computer-related illnesses they were experiencing.

In an academic library setting, different categories of staff perform various tasks for the smooth operation of the library. These staff usually consist of professional librarians, paraprofessionals and non-professionals. Apart from the library staff, there are also the library facilities, resources and then the library users who are mostly staff and students of the institution's library. In most cases, for the library users to access and utilize library resources successfully, there is always an interaction between the library staff, the users, the facilities and the resources. The interaction between the library staff and the facilities is unavoidable because staff must use the library facilities to make resources available to the users and in the process the issue of occupational health and safety normally arise.

According to the World Health organization (2000) occupational health and safety deals with all aspects of health and safety in the workplace. At the library computer workstation, in order to safeguard the health of the staff, the library management and the staff all have different roles to play. Thus, it is the duty of the library management to provide a conducive computer workstation for the staff. This includes the provision of well-lighted, well ventilated and spacious offices with ergonomics chairs, ergonomics office desks and other facilities which would add to the comfort of the staff while using computers to perform tasks. Furthermore, it is the duty of the library management to organize staff training on ergonomics principles required at the computer workstation. This is because if the staff are not trained on the ergonomics principles required at their workstations, out of ignorance, they may be using the computers to perform tasks wrongly thereby exposing themselves to computer-related illnesses. On the other hand, it is the duty of the library staff to adjust and further arrange their workstations to suit their comfort. It is also the duty of the library staff to apply the ergonomics principles learnt from the training they received at their various workstations. According to Kaelin (2017) "no matter how well an employer designs a workplace, it is the responsibility of each employee to make sure they are using good ergonomics at their own workstation".

The review of related literature revealed that in Nigeria, not much work has been done on the issue of ergonomics at the computer workstation in academic libraries. In spite of the fact that nowadays many academic libraries in Nigeria are using computers to carry out tasks. Therefore, there is need for more researches to be conducted in this area in order to seek ways to prevent

library staff that use computers to perform tasks from developing computer-related illnesses. The present study is therefore timely and will add to the existing literature.

### **Methodology**

In order to carry out a thorough, holistic and in-depth investigation about awareness of ergonomics principles required at the computer workstation amongst University of Jos Library staff, a case study was adopted as the methodological approach to the research. The target population of the study comprised of all the 144 staff working in the library as at the time of carrying out this research. As at the time of conducting this study, only 131 staff were on ground. Total enumeration method was therefore used for the study because the population was not too large. Therefore all the 131 staff were adopted for the study. However, in order not to be biased in their responses, two of the researchers who are staff of the library were excluded from the respondents. Thereby, making the number of staff to be 129.

The data collection instrument used for the study was structured questionnaire. The questionnaire comprised of 5 sections. The questionnaire was grouped into five sections with some sub-sections. Copies of the questionnaire were administered to the 129 respondents with the help of a trained research assistant. Out of the 129 copies of questionnaire that were administered, 119 were filled and returned.

### **Analyses of Results and Discussion**

**Table1. Distribution of participants based on gender, age and work experience**

**N=119**

<b>Variable</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Gender</b>		
Male	63	52.94%
Female	56	47.05%
<b>Total</b>	<b>119</b>	<b>100%</b>
<b>Age</b>		
20-24	-	0.00
25-29	9	7.56
30-34	15	12.60
35-39	24	20.16
40-44	11	9.24
45-49	24	20.16
50 and above	36	30.25

<b>Total</b>	<b>119</b>	<b>100%</b>
<b>Work Experience</b>		
1-4 years	15	12.60
5-9 years	47	39.49
10-14 years	12	10.08
15-19 years	7	5.88
20 years and above	38	31.93
<b>Total</b>	<b>119</b>	<b>100%</b>

Results obtained from table 1 show that more males 63 (52.94%) participated in the research than females 56 (47.05%). The results also show that the highest number of participants in the research are aged 50 years and above 36 (30.25%) and majority of the respondents 47 (39.49%) have 5-9 years work experience. This implies that majority of the respondents are males who are middle aged and have not worked for too long in the Library

**Table 2a: Use of Computer to perform library tasks**

**N=119 for question 1, N=36 for questions 2, 3 and 4**

S/No	Item	Yes (%)	No (%)	Total	%
1.	Do you use computer to perform library tasks?	36 (30.25%)	83(69.74%)	119	100
	Please if your answer to question “1” is “No” do not fill the remaining part of this questionnaire				
2.	Do you enjoy using computer to perform library tasks?	35(97.22%)	1(2.77%)	36	100
3.	Do you have phobia (fear) when using computer to perform library tasks?	2(5.55%)	34(94.44%)	36	100
4.	Do you think that using computer to perform library tasks is enhancing service delivery?	33(91.66%)	3(8.33%)	36	100

Analyses of results obtained from table 2a show that out of the 119 respondents who were given copies of the questionnaire, 83 (69.74%) respondents indicated that they don't use computer to perform library tasks, while 36 (30.25%) respondents indicated using computer to perform library tasks. Furthermore, out of the 36 (30.25%) respondents that indicated using computer to

perform library tasks, 35(97.22%) respondents indicated that they enjoy using computer to perform library tasks, 34 (94.44%) respondents indicated that they don't have phobia for computer and 33 (91.66%) respondents think that using computer to perform library tasks is enhancing service delivery.

**Table 2b: Type of computer used to perform library tasks by staff**

Which of these personal/micro-computer(s) do you use to perform library tasks?

**N=36**

S/No	Type of computer	Frequency	Percentage (%)
1	Desktop	24	66.66%
2	Laptop	23	63.88%
3	Palm top such as notebooks, tablets and smartphones	11	30.55%
4	Others, please specify	-	0.00%

Results obtained from table 2b show that the respondents use more of desktop 24 (66.66%) to perform library tasks. This is followed closely by the use of laptop 23 (63.88%) and palm top 11 (30.55%) respectively.

**Table 2c: Type of task (s) performed using computer by library staff**

Which of these library task(s) do you use computer to perform?

**N= 36**

S/No	Library tasks	Frequency	Percentage (%)
1	Administrative tasks	13	36.11%
2	Tasks in the circulation section	4	11.11%
3	Tasks in systems section	8	22.22%
4	Tasks in cataloguing and classification Section	14	38.88%
5	Tasks in orders section	6	16.66%
6	Tasks in serials section	5	13.88%
7	Tasks in documents and special collections sections	5	13.885
8	Tasks in bindery section	1	2.7%
9	Tasks in subject libraries	15	41.66
10	Others, please specify	2	5.5%

Analyses of results obtained from table 2c reveal that the type of task mostly performed by respondents using the computer is task in subject libraries 15(41.66%). This is followed closely by task in cataloguing and classification section 14 (38.88%) and administrative task 13 (36.11%) respectively.

**Table 2d: Duration of time spent while using computer to perform library tasks by staff**

**N=36**

<b>S/No</b>	<b>Time spent</b>	<b>Duration</b>	<b>Frequency</b>	<b>Percentage (%)</b>
1	For how long have you been using computer to perform library tasks (number of years)?	1-5 years	14	38.88%
		6-10years	12	33.33%
		11-15 years	7	19.44%
		16-20years	1	2.77%
		More than 20 years	2	5.55%
		<b>Total</b>	<b>36</b>	<b>100%</b>
2	How often do you use computer to perform library tasks (number of hours per working day)?	1-2 hours	5	13.88%
		3-4 hours	5	13.88%
		5-6 hours	7	19.44%
		7-8 hours	19	52.77%
		<b>Total</b>	<b>36</b>	<b>100%</b>

From the results obtained in table 2d, majority of the respondents 14 (38.88%) indicated that they have been using the computer to perform library tasks for a period of 1-5 years. This is followed closely by the respondents 12 (33.33%) who indicated using computer to perform library tasks for a period of 6-10 years. But in contrast, only 1 (2.77%) respondent has been using computer for 16-20 years and only 2 (5.55%) respondents have been using computer for more than 20 years. However, with regards to number of hours the respondents use the computer to perform tasks, majority 19 (52.77%) of the respondents indicated that they use the computer for 7-8 hours per working day to perform tasks. This implies that majority of the respondents use the computer to perform tasks for almost all the working hours per working day.

**Table 3: Staff point of view about their comfort while using computer to perform library tasks**

N=36

S/No	Item	Not comfortable (%)	Slightly comfortable (%)	Moderately comfortable (%)	Very comfortable (%)	Total (%)	Mean
1	While using computer to perform library tasks, in your opinion, how comfortable is your table?	5 (13.88 %)	10 (27.77%)	14 (38.88%)	7 (19.44)	36 (100%)	2.63
2	While using computer to perform library tasks, in your opinion, how comfortable is your chair?	12 (33.33%)	15 (41.66%)	6 (16.66%)	3 (8.33%)	36 (100%)	2.00
3	While using computer to perform library tasks, in your opinion, how comfortable are you with regards to office space, lighting, ventilation and temperature in the work environment	9 (25%)	8 (22.22%)	16 (44.44%)	3 (8.33%)	36 (100%)	2.36
<b>Weighted mean=2.33 (58.25%)</b>							

Results obtained from table 3 show that majority of the respondents 14 (38.88%) are moderately comfortable with the tables they mount their computers on to perform tasks at the computer workstation, while 10 (27.77%) respondents are slightly comfortable. But with regards to chairs, 15 (41.66%) respondents are slightly comfortable with the chairs they sit on to perform tasks at the computer workstation, while 12 (33.33%) respondents are not comfortable with their chairs. However, majority of the respondents 16 (44.44%) are moderately comfortable with the office space, lighting, ventilation and temperature at the computer workstation. The weighted mean is 2.33 (58.25%). This implies that averagely, majority of the respondents are slightly comfortable while using the computer to perform library tasks at the computer workstation. This finding is slightly different from the finding of a research conducted by Mirsaied, Sheikhoaei, Rad, and Nasirian (2018) which revealed that the

condition of the librarians' working environment in the studied community were not ergonomically friendly.

**Table 4: Staff awareness level about some computer- related illnesses**

**N=36**

<b>S /No</b>	<b>Item</b>	<b>Not Aware (%)</b>	<b>Slightly aware (%)</b>	<b>Moderately Aware (%)</b>	<b>Very aware (%)</b>	<b>Total (%)</b>	<b>Mean</b>
1	Are you aware that eye strain is a computer-related illness?	- (0.00%)	1 (2.77%)	1 (2.77%)	34 (94.44%)	36 (100%)	3.91
2	Are you aware that back- ache is a computer- related illness?	2 (5.55%)	4 (11.11%)	1 (2.77%)	29 (80.55%)	36 (100%)	3.58
3	Are you aware that shoulder-ache is a computer-related illness?	8 (22.22%)	- (0.00%)	3 (8.33%)	25 (69.44%)	36 (100%)	3.25
4	Are you aware that head-ache is a computer-related illness?	9 (25%)	4 (11.11%)	5 (13.88%)	18 (50%)	36 (100%)	2.88
5	Are you aware that stress is a computer- related illness?	5 (13.88%)	6 (16.66%)	3 (8.33%)	22 (61.11%)	36 (100%)	3.16
6	Are you aware that obesity is a computer-related illness?	16 (44.44%)	5 (13.88%)	3 (8.33%)	12 (33.33%)	36 (100%)	2.30
7	Are you aware that numbness of the wrists and fingers is a computer –related illness?	12 (33.33%)	2 (5.55%)	8 (22.22%)	14 (38.88%)	36 (100%)	2.66
<b>Weighted mean = 3.10 (77.64%)</b>							

Analyses of results obtained from table 4 show that majority of the respondents are very aware of eye strain 34 (94.44%), head-ache 18 (50%), back-ache 29 (80.55%), shoulder-ache 25 (69.44%), numbness of the wrists and fingers 14 (38.88%) and stress 22 (61.11%) as computer related illnesses. However, majority of the respondents 16 (44.44%) are not aware that obesity is a computer related illness. The weighted mean is 3.10 (77.64%). This implies that averagely, majority of the respondents are very aware of the above mentioned computer- related illnesses.

**Table 5a: Staff opinion about the computer-related illnesses they have been experiencing in the course of using computer to performing library tasks**

In your opinion, which of these computer-related illnesses have you been experiencing in the course of using computer to perform library tasks?

N=36

S /No	Item	Frequency	Percentage (%)
1	Eye strain	32	88.88%
2	Back- ache	23	63.88%
3	Shoulder-ache	15	41.66%
4	Head-ache	12	33.33%
5	Stress	18	50.00%
6	Obesity	3	8.33%
7	Numbness of the wrists and fingers	6	16.66%

Results obtained from table 5a show that almost all the respondents 32 (88.88%) indicated that they have been experiencing eye strain in the course of using the computer to perform library tasks. This is followed by back- ache 23 (63.88%), stress 18 (50.00%), shoulder- ache 15 (41.66%) and head-ache 12 (33.33%). In contrast, only 6 (16.66%) and 3 (8.33%) respondents indicated experiencing numbness of the wrists and fingers and obesity in the course of using computer to perform library tasks. This finding corroborates the finding of Shikdar and Alkindi (2015) which revealed that 58%, 45% and 43% of respondents reported experiencing eye strain, shoulder pain and back pain in the course of using computers to perform tasks. This finding also corroborates the finding of Rajan, Pillai and Jayalatha (2016) which revealed that 59% of the respondents reported suffering from problems related to the lower arm and wrist in the course of using computer to perform tasks, while 65% of the respondents reported suffering from blurred vision, irritation and head-ache, and 66% of the respondents reported suffering from back-ache, neck-ache and shoulder-ache.

**5c: Ascertaining the frequency of occurrence of the computer- related illnesses among the staff**

How frequently do you experience the above mentioned computer- related illnesses in the course of using the computer to perform library tasks?

N=36

Item	Frequency	Percentage (%)
Rarely	11	30.55%

Sometimes	25	69.44%
Always	-	0.00%
Total		100%

Result obtained from table 5c shows that majority of the respondents 25 (69.44%) indicated that they sometimes experience computer- related illnesses in the course of using the computer to perform library tasks.

**Table 5d: Ascertaining whether the illnesses are actually computer –related illnesses**

**N=36**

S/No	Item	Yes	No	Total (%)
1	Have you complained to a medical practitioner in order to ascertain if the illnesses you are experiencing are actually computer –related illnesses?	16 (44.44%)	20 (55.55%)	36 (100%)

Results obtained from table 5b show that almost half of the respondents 16(44.44%) have ascertained through a medical practitioner that the illnesses they are experiencing in the course of using computer to perform tasks are actually computer related illnesses. This supports the finding of Rajan, Pillai and Jayalatha (2016) which revealed that 44% of respondents admitted to have consulted a doctor with regards to the computer related illnesses they were experiencing. In the contrary, more than half of the respondents 20 (55.55%) have not ascertained through a medical practitioner the actual causes of their illnesses. This implies that the experiences they are having may either be compute- related illnesses or other forms of illnesses.

**Table 5c: If No, what could be your likely reason(s) from the options given below?**

**N=20**

S /No	Item	Frequency	Percentage (%)
1	They are usually mild experiences, I usually get relief after resting for a while	19	95%
2	I usually resort to self -medication when-ever I have the experiences	1	5%

3	I am too busy to seek medical help	-	0.00%
4	I don't have the money to settle the hospital bills that may likely arise	-	0.00%
	<b>Total</b>	<b>20</b>	<b>100%</b>

Results obtained from table 5c show that majority of the respondents 19 (95%) who have not ascertained the actual causes of their illnesses indicated that they do so because they are usually mild experiences and they usually get relieve after resting for a while. However, only 1(5%) respondent indicated resorting to self – medication when-ever he/she experience ill-health in the course of using computer to perform tasks.

**Table 6a: Staff awareness level about some simple ergonomics principles required at the computer workstation**

**N=36**

S /No	Item	Not aware (%)	Slightly aware (%)	Moderately aware (%)	Very aware (%)	Total	Mean
1	Before now, are you aware of the meaning of the word “ergonomics” (designing the workplace to fit humans by minimizing discomforts and injuries)?	21 (58.33%)	11 (30.55%)	1 (2.77%)	3 (8.33%)	36 (100%)	1.61
2	As a computer user, are you aware that the wrong use of computer can have some negative effects on your health?	- (0.00%)	6 (16.66%)	17 (47.22%)	13 (36.11)	36 (100%)	3.19
3	As a computer user, are you aware that sitting down for long hours without breaks at the computer workstation can cause you to develop some computer-related illnesses such as, musculoskeletal injuries, obesity	4 (11.11%)	16 (44.44%)	9 (25%)	7 (19.44%)	36 (100%)	2.52

	and stress?						
4	As a computer user, are you aware that you are supposed to stand up and move around regularly while at the computer workstation in order to avoid some computer –related illnesses?	3 (8.33%)	12 (33.33%)	14 (38.88%)	7 (19.44%)	36 (100%)	2.69
5	As a computer user, are you aware that you are supposed to maintain a good sitting posture at the computer workstation in order to avoid musculoskeletal injuries such as back-ache and shoulder-ache?	18 (50%)	12 (33.33%)	3 (8.33%)	3 (8.33%)	36 (100%)	1.75
6	As a computer user, are you aware that you are supposed to maintain a good working posture with your hands and wrists while using the computer to perform tasks?	21 (58.33%)	8 (22.22%)	7 (19.44%)	- (0.00%)	36 (100%)	1.61
7	As a computer user, are you aware that staring at the screen of the computer for long hours without break could lead to Computer Vision Syndrome with symptoms such as red eyes, itchy eyes, strained eyes, blurred vision and head-ache?	2 (5.55%)	9 (25%)	16 (44.44%)	9 (25%)	36 (100%)	2.88
8	As a computer user, are you aware that you are supposed to rest your eyes when using the computer to perform tasks at least for few seconds after every two hours by taking a break, or doing a non-computer related task in order to avoid developing computer Vision Syndrome?	14 (38.88%)	16 (44.44%)	4 (11.11%)	2 (5.55%)	36 (100%)	1.83
9	As a computer user, are you aware that the screen of your computer should not be too close to your face and you are supposed to tilt the screen slightly in order to avoid reflection or glare that could lead to Computer Vision Syndrome?	3 (8.33%)	8 (22.22%)	20 (55.55%)	5 (13.88%)	36 (100%)	2.75
10	As a computer user, are you	-	4	24	8	36	3.11

aware that you are supposed to have regular medical check-ups in order to work towards correcting any computer-related illness that may arise as a result of using the computer to perform tasks?	(0.00%)	(11.11%)	(66.66%)	(22.22%)	(100%)	
<b>Weighted mean=2.39(59.85%)</b>						

Results obtained from table 6a show that majority of the respondents indicated that they are moderately aware of the following: the wrong use of computer can have some negative effects on their health 17 (47.22%), they are supposed to stand up and move around regularly when using the computer to perform tasks 14 (38.88%), staring at the screen of the computer for too long can cause them to develop Computer Vision Syndrome 16(44.44%) and the screen of the computer should not be too close to their faces and the screen should be tilted slightly in order to avoid reflection 20 (55.55%). However, majority of the respondents are slightly aware that sitting down for long hours without breaks at the computer workstation can cause them to develop computer- related illnesses 16 (44.44%), and also slightly aware that they need to rest their eyes for at least few seconds of every two hours of using the computer to perform tasks 16(44.44%). But on the contrary, majority of the respondents are not aware of the meaning of the word “ergonomics” 21 (58.33%). They are also not aware that they are supposed to maintain a good sitting posture at the computer workstation 18(50%), and also maintain the right posture of the hands and wrists while using the computer to perform tasks 21 (58.33%). The weighted mean is 2.39 (59.85%). This implies that averagely, majority of the respondents are slightly aware of the ergonomics principles required at the computer workstation.

**Table 6b: Level of compliance with the ergonomics principles required at the computer workstation**

**N=36**

S/No	Item	Not comply (%)	Slightly Comply (%)	Moderately comply (%)	Very much comply (%)	Total	Mean
1	As a computer user, what is your	6	18	8	4	36	2.27

	level of compliance with the ergonomics principle of standing up and moving around regularly when using the computer to perform library tasks?	(16.66%)	(50%)	(22.22%)	(11.11%)	(100%)	
2	As a computer user, what is your level of compliance with the ergonomics principle of maintaining a good sitting posture when using the computer to perform library tasks?	9 (25%)	17 (47.22%)	7 (19.44%)	3 (8.33%)	36 (100%)	2.11
3	As a computer user, what is your level of compliance with the ergonomics principle of maintaining a good posture of the arms and wrists when using the computer to perform library tasks?	5 (13.88%)	22 (61.11%)	6 (16.66%)	3 (8.33%)	36 (100%)	2.19
4	As a computer user, what is your level of compliance with the ergonomics principle of resting your eyes for few seconds at least after every two hours when using the computer to perform library tasks?	3 (8.33%)	14 (38.88%)	16 (44.44%)	3 (8.33%)	36 (100%)	2.52
5	As a computer user, what is your level of compliance with the ergonomics principle of keeping the monitor at a distance away from your face and tilting the monitor slightly in order to avoid reflection when using the computer to perform library tasks?	- (0.00%)	7 (19.44%)	13 (36.11%)	16 (44.44%)	36 (100%)	3.25
6	As a computer user, what is your level of compliance with the ergonomics principle of having regular medical check-up in order to work towards correcting any computer-related illness that may arise as a result of using the computer to perform tasks?	11 (30.55%)	14 (38.88%)	8 (22.22%)	3 (8.33%)	36 (100%)	2.08
<b>Weighted mean= 2.38(59.62%)</b>							

Results obtained from table 6b show that majority of the respondents very much comply to the ergonomics principle of keeping the monitor some distance away from the face 16 (44.44%).

Majority of the respondents moderately comply with the ergonomics principle of resting the eyes for at least few seconds after every two hours of working with the computer 16 (44.44%). Majority of the respondents slightly comply with the ergonomics principle of standing up and moving around regularly when using the computer to perform tasks 18 (50%). Also they slightly comply with the ergonomics principle of maintaining a good sitting posture at the computer workstation 17 (47.22%) and also maintaining the right posture for the hands and wrists while using the computer to perform library tasks 22 (61.11%). The weighted mean is 2.38(59.62%). This implies that averagely majority of the respondents slightly comply with the ergonomics principles required at the computer workstation.

### **Summary of major findings**

1. About one- fourth of University of Jos Library staff use computer to perform tasks
2. Almost all the staff that use computer to perform library tasks enjoy using the computer
3. Almost all the staff that use computer to perform library tasks don't have phobia for computer
4. Almost all the staff that use computer to perform library tasks think that using computer to perform tasks is enhancing service delivery
5. The major type of computer used by the staff to perform library tasks is desktop, this is followed by laptop and palm top
6. The major type of task performed using computer by the staff is task in the subject libraries, this is followed by task in the cataloguing and classification section, administrative task and task in systems unit
7. Majority of the staff have used computer for a period 1-5 years and majority of the staff use the computer for a period of 7-8 hours per working day
8. Majority of the staff are moderately comfortable with the tables they mount their computers on to perform tasks
9. Majority of the staff are slightly comfortable with the chairs they sit on at the computer workstation
10. Majority of the staff are also slightly comfortable with their office space, lighting, ventilation and temperature at the computer workstation

11. Majority of the staff are very aware that eyestrain, back-ache, shoulder-ach, head-ache, and stress are computer- related illnesses
12. But majority of the staff are not aware that obesity and numbness of the wrists and fingers are also computer-related illnesses
13. Majority of the staff sometimes experience eye strain, back-ache, shoulder-ache, head-ache, stress, obesity and numbness of the wrists and fingers in the course of using the computer to perform library tasks
14. Almost half of the staff have ascertained through a medical practitioner that the illnesses they experience in the course of using the computer to perform library tasks are actually computer- related illnesses
15. But more than half of the staff have not ascertained the actual causes of their illnesses and the major reason given is that the illnesses are mild and they usually go away after resting for a while
16. Majority of the staff are slightly aware of the ergonomics principles required at the computer workstation
17. Finally majority of the staff slightly comply with the ergonomics principles required at the computer workstation

## **Conclusion**

Based on the findings of this research it could be deduced that about half of the staff of the University of Jos Library who use computer to perform tasks are experiencing computer-related illnesses. More so, the staff are slightly aware of the ergonomics principles required at the computer workstation and they slightly comply with the principles.

## **Recommendations**

Based on the findings of this research, the following recommendations are hereby proffered:

1. There is need for the library management to provide a more ergonomics friendly computer workstation for the staff. This could be achieved by the provision of more spacious offices that are well lighted and well ventilated with ergonomics office desks and ergonomics chairs. This is necessary because it would reduce the risk of some computer related illnesses such as Musculo Skeletal Injuries and stress among the staff.

2. The library management should also invite ergonomics experts to re-arrange the computer workstations and also train staff on simple ergonomics principles required at the computer workstation.
3. After undergoing the training on simple ergonomics principles, the staff should further re-arrange their workstations to best suit their comforts and at the same time they should endeavor to apply the simple ergonomics principles learnt at their various workstations. This is necessary in order to ensure their own safety at the computer workstation.
4. There is need for the category of staff that have not yet ascertained whether or not they are experiencing computer related illnesses to do so with immediate effect. There is also need for all staff to go for routine medical check-ups. This is to ensure early detection and treatment of any ailment that is may arise in the course of performing library tasks be it computer- related or not.

## References

- American College Health Association.(2018). Ergonomics and computer use. Retrieved 25<sup>th</sup> April, 2019 from:  
<https://uhs.princeton.edu/health-resources/ergonomics-computing>
- American Federation of State, Country and Municipal Employees. (2019). Publication on work place health and safety .Retrieved 19<sup>th</sup> April, 2019 from:  
<https://www.afscme.org/news/publications.workplace.health>
- Department of Health and Human Services State Government of Victoria, Australia.( 2018). Better health publication. Retrieved 6<sup>th</sup> April, 2019 from:  
<https://www.betterhealth.vic.gov.au/health/healthliving/computer>
- International Ergonomics Association. (2000). Definition of ergonomics. Retrieved 3<sup>rd</sup> March, 2019 from:  
<https://ww.iea.cc/whats>
- Kaelin, M. (2017). Ten ways to immediately improve workstation ergonomics. *Tech Republic Newsletter*. Retrieved 27<sup>th</sup> April, 2019 from:  
<https://www.techrepublic.com/article/10-ergonomic-tips-to-immediately-improve-your-workspace/>

Mirsaied, S.; Sheikhoaei, F.; Rad, H. & Nasirian, R. (2018). A Comparative Study on Library Employees Working Environment Conditions with Ergonomics Principles in Selected Universities in Medical Sciences in Tehran. *Journal of Payavard Salamat*. 11( 6). 723-732. Retrieved 27<sup>th</sup> April, 2019 from:

<https://www.payavard.tums.ac.ir/browse.php?aid-6444&aid>

Rajan-Pillai, C.V & Jayalatha , K.T. (2016). Ergonomics and Library Professionals: A case study of the University of Kerala. *Journal of Information Management* .53 (3) .221-227. Retrieved 26<sup>th</sup> April, 2019 from:

<https://www.researchgates.net/publications/304343144ergonomics>

Sikdar, A.A. & Alkindi, M. (2007). Office Ergonomics: Deficiencies in Computer Workstation Design. *International Journal of Occupational Safety and Ergonomics*. 3 (2). 215-23. Retrieved 24<sup>th</sup> April, 2019 from:

<https://www.researchgate.net/publication/6237406>

Singh, N. (2018). Healthy/Ergonomics Computing Resources. *Inforum library*. Retrieved 25<sup>th</sup> April, 2019 from:

<https://inforumlibrary.toroto.ca/services/healthycomputing>

