

WORK-RELATED MUSCULOSKELETAL DISORDERS FROM GENDER PERSPECTIVE AMONG STAFF OF BISHOP STUART UNIVERSITY

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ABSTRACT

In this work, various work-related musculoskeletal disorders were conscientiously studied from a gender perspective among the staff of Bishop Stuart University. A total of 112 staff members consented to participate in the study. 62 were females and 50 were males. The majority of our participants were within the age range of 30-39. The academic staff were 68 and the non-academic staff were 44. The Krejcie and Morgan Table of 1970 was used to determine the sample size.

The supporting staff members, visiting lecturers, and part-time staff were excluded from the study. The study was cross sectional and the tool of data collection was Self structured, validated

questionnaire. The data collection exercise lasted for 6 weeks, after which the collected data were analysed with SPSS version 25. The results revealed Low back pain, blurred vision, upper back pain, neck pain and shoulder/wrist pain were the common work-related musculoskeletal disorders suffered by the staff members.

The study findings revealed that more male academic staff members suffered from work-related musculoskeletal disorders than their female counterparts. Conversely, the result of the study showed also that among the non-academic staff, there were more female sufferers of work-related musculoskeletal disorders than their male counterparts. Nevertheless, it was also noted that there was a concatenation of factors among other things that brought about the work-related musculoskeletal disorders, among staff members judging from Ergonomics standpoint. Such concatenation of factors was poor ergonomic knowledge application at workstation practices, lack of orientation on ergonomics, ergonomically designed working environment, etc.

Keywords: *Ergonomics, Musculoskeletal disorders, Staff, Environment.*

Background: From an ergonomics point of view, the teaching profession is gradually turning into the most hazardous profession in the world. The situation is worse in developing countries, especially in the private sectors and more so, in the hands of few bourgeois of the Africa society, who own private institutions. In most institutions across Africa, it appears as if priority attention is not given to health and safety of employees that its ergonomics significance truly deserves.

Methodology: Self structured, validated questionnaire were administered to both academic and non-academic staff, using the convenience and snowball sampling techniques. The questionnaire was designed to gather data pertaining to ergonomic principles and

its application in workstation practices, ergonomics fit of the workstations and work-related injuries. SPSS software for windows version 25 was used for statistical analysis for the research data. Descriptive statistic consisting of mean, standard deviation, number and frequency were used. Relationship between research variables were assessed using the Kendall's correlation and the null hypothesis tested using Paired sign test. The significance level (p) was set at <0.05

Results: Generally, the study results revealed that at least one work-related disorder was being suffered by either academic staff or non-academic staff at any given time. The most commonly suffered musculoskeletal disorder (MSD) among the employees was lower back pain. The least suffered MSD was blurred vision among the academic staff, and upper back pain among the nonacademic staff. It revealed that there were more males in most age groups suffering from musculoskeletal disorders than their female counterparts of the same age group.

Conclusion: All staff whether academic or nonacademic suffer from work related musculoskeletal disorders. It is therefore recommended that management should put in place the right state of the art ergonomic office furniture and gadgets and orient the employees about proper workplace ergonomics. The staff in turn should utilize respectfully and beneficially the provided state of the art ergonomic facilities to promote their social, physical and academic wellbeing.

Introduction

Work-related musculoskeletal disorders among university workers are gradually gaining popularity among experts in all ramifications. It is so, because the problems of musculoskeletal disorders give a fair share to all workers from other sectors of life (Ndejjo et al.,

2015) Work being a universal aspect of mankind, this paper therefore, explored the work-related musculoskeletal disorders suffered by both academic and nonacademic staff of BSU in relation to gender distribution.

In the context of ergonomics as well as medical parlance, work-related musculoskeletal disorders denote the groups of injuries or disorders affecting the musculoskeletal system, which consist of the muscles, tendons, ligaments, nerves, blood vessels and cartilages((Kumari & Kaur, 2018). Within the purview of occupational ergonomics, common musculoskeletal disorders suffered are low back pain, neck pain, wrist and shoulder pain, with characteristic symptoms like numbness, fatigue, psychosocial stress and burn out, (Ojoawo et al., 2016).

At the tertiary institution level, work-related musculoskeletal disorders have both individualistic and management consequences. Generally, an academic institutional performance level is measured based on specific academic key milestones of achievements that set it apart from other institutions of similar goals and more so, if the institution is facing stiff competition. These academic milestones speak volume of its historical odyssey, as well predict the future direction the institution is taking. Collectively, this can be affected by the ergonomic hazards her staff members face.

In the event where attention is not given to the problem of MDS which it rightly deserves, individual complaints of work-related musculoskeletal disorders will continue to be on the increase (Woo et al., 2015). Hence, for a tertiary institution to effectively put into actions, her proposed plans or activities, it is imperative, first to identify and prioritize strategic means of improving staff performance, from the ergonomic point of view. That being said, the working environment, the ability of the individual staff, the safety and health condition of the workers must be put into consideration (Susihono & Gunawan, 2018).

With the advent of digital learning, the societal awareness of environmental, socio-cultural, ethical as well as academic needs has

sky rocketed. Consequently, this has sharpened focus on strategies for safe ergonomic practices among mentors and mentees either at home during online learning or in the offices (Chandwani et al., 2019). The aim of the study was to minimize work-related musculoskeletal disorders both on the side of the learners and the lecturers alike.

Methods and Materials

Study Design and Settings: This was a cross-sectional, quantitative and descriptive study conducted to study work-related musculoskeletal disorders academic and nonacademic staff of BSU in relation to age and gender distributions. The study was carried out in the main campus of the University in Kakoba including the Law Faculty and Faculty of Nursing and Biomedical Sciences in Ruharo, all in Mbarara city, Southwestern Uganda.

Participants: A total of 112 staff members were sampled, of which 62 were females and 50 males, with majority of them aging from 30-39. The supporting staff members, visiting lecturers, and part-time staff were excluded from the study.

Tools for Data Collection: A structured questionnaire was designed to elicit the required data. The questionnaire basically consisted of 4 sections with a total of 41 questions which were put in form of closed and open ended format, with the focus on the work-related musculoskeletal challenges faced by the employees, as well as possible causes from an ergonomic point of view. The instrument captured socio-demographics, awareness of ergonomic principles, ergonomics fit of the working environment as well as work-related health injuries.

Method of Data Collection: The data was collected with the help of a physically administered questionnaire. Consent was obtained

from all the respondents before administering the questionnaire. The filled information on the questionnaire was cross-checked, inspected, scrutinized to ensure they were relevant to the questions asked, accurate, and complete. Generally, a gift of pen was given to participants for their time. An ethical approval was obtained from the Research Ethic committee of the institution, (BSU REC-2022-3) and the consent to collect data from the staff members of the university was obtained from the office of the public relation office of the University.

Results

Table 1: Table of MSDs among academic and Non-academic staff in relation to Gender distribution

Variable (MSDs)	Academic Staff N=68	Gender of academic staff		Non-academic Staff N=44	Gender of Nonacademic staff	
		Male	Female		Male	Female
Low Back Pain	36	20	16	22	6	16
Blurred Vision	13	7	6	10	1	9
Upper Back Pain	21	13	8	6	3	3
Neck Pain	29	19	10	21	4	17
Shoulder/ Wrist Pain	31	18	13	16	3	13

Data Analysis: The collected quantitative data was analyzed using SPSS version 25. Descriptive statistics including frequencies and percentages, were presented in the above table. The table presents

the results of the MSDs among the BSU employees, in relation to gender distribution.

Among the academic staff, n=36 (52.9%), had low back pain; while among the non-academic staff, n=22 (50.0%), had low back pain. In terms of gender distribution among academic staff with low back pain, n=20 (55.5%) were males and n=16 (44.4%) were females, while among the non-academic staff, n=6 (27.3%) were males and n=16 (72.7%) were females.

The result revealed that more males among the academic staff, suffer from low back pain than their nonacademic counterpart. However, with the females, there is no difference in number of sufferers of MSDs between academic and non-academic staff. Within the academic staff group, there are more male sufferers than female, while within the non-academic staff group, there are more female sufferers than male sufferers.

With blurred vision, n=13 (19.2%) claimed to have developed it among the academic staff and n=10 (22.7%) developed the same among the nonacademic staff. Gender wise, n=7 (53.8%) were males and n=6 (46.2%) were females among the academic staff. Among the non-academic staff n=1 (10%) was a male and n=9 (90%) were females. Within the academic staff group, there are more male sufferers than female. Conversely, in the nonacademic group, there are more female sufferers than male sufferers.

The result showed that more male academic staff suffered from blurred vision than their nonacademic counterpart, and similar trend is noted among the females of academic and nonacademic employees.

The upper back pain musculoskeletal disorder, had n=21 (30.8%) and n=6 (13.6%) among academic and non-academic staff respectively. From the perspective of gender distribution, n=13 (61.9%) and n=8 (38.1%) among academic staff were males and females respectively. On the aspect of non-academic staff, n=3 (50%) and n=3 (50%), were males and females respectively.

The results revealed more males sufferers among the academic staff than the non-academic staff, and more female sufferers of blurred vision among the academic staff than the non-academic staff.

Neck pain musculoskeletal disorder had n=29 (42.6%) among the academic staff and n=21 (47.7%) among the non-academic staff. On the aspect of gender distribution among academic staff, sufferers of neck pain, had n=19 (65.5%) males and n=10 (34.5%) females. Gender distribution among nonacademic staff, revealed n=4 (19.0%) males and n=17 (81.0%) females.

Generally, the results on neck pain musculoskeletal disorder showed that there are more academic staff members suffering from this MSD than the nonacademic staff. On gender ground, there are more female sufferers among the non-academic staff than the female academic staff. Among the male employees, there are more sufferers among the academic staff, than the non-academic staff.

On shoulder and wrist pain, this study finding revealed n=31 (45.6%) and n=16 (36.4%) among the academic and non-academic staff respectively. Of these 31 positive respondents of the academic staff, n=18 (58.1%) and n=13 (49.1%) were males and females respectively. On the side of the non-academic staff, n=3 (18.8%) and n=13 (81.3%) were males and females respectively.

On a general note, there are more employees among the academic staff who suffer from shoulder and wrist pain than the employees who are non-academic staff. On gender basis, there are more cases of shoulder and wrist pain among male academic staff than non-academic staff. However, there was no difference in the frequency of the results noted among the females of the academic and nonacademic staff.

Discussion

The study findings revealed a higher frequency rate of low back pain among academic staff than the non-academic staff. Additionally, there were more cases of male sufferers than female among the academic staff and a reverse trend among the non-academic staff.

Here it implies that academic male staff are at ergonomically disadvantageous position, when compared with their male non-academic counterpart, as a result of the dynamic nature of their work of sitting down for a long time to do their work of preparing materials to teach the students, supervise research, both physically and online, give online lectures, and examine students. When compared with their female academic colleagues, the study revealed again more male sufferers and this could be explained in the light of most male academic staff tending to be active and dynamic compared to their female colleagues. But among the non-academic staff, low back pain was reported more among the female staff than their male non-teaching colleagues.

Conversely, this study finding tuned out to be in contrast with the finding of (Meaza et al., 2020), where it was reported that the most common MSD suffered by academic staff was neck pain (41.5%), which was followed by low back pain (40.3%), besides, their study revealed more female sufferers than males. The difference in the findings could be explained in light of difference in sample size, body habits of the female respondents, staff-work ratio, level of economic and infrastructural state of the setting in which the studies were carried out.

The result of our study showed that blurred vision was suffered more by academic staff than non-academic staff. Additionally, academic staff had more male sufferers than in the non-academic and more female sufferers among the non-academic staff, than the males. Also, within the academic staff group, there were more male sufferers than the female. While, within the

nonacademic staff group, there were more female sufferers than the male.

The implication here is that, more female nonacademic staff, in the era of digitalization tend to spend more time on the computer than their female academic counterparts, and similar explanation holds true for the male academic staff. Generally, developing blurred vision and eye fatigue-asthenopia is both individual and institutional based poor ergonomic compliance and practices, due to poor knowledge and low level of awareness. The finding of this study, aligned with the finding of (Nwokedi, 2019), where it was reported that n=18 (50%) respondents admitted having experienced asthenopia and stress in using the computer to perform desk task for a period of 7-8 hours.

Upper back pain (UBP) was another common MSD suffered by workers in all phases of work. This study finding among BSU employees revealed that more academic staff suffered from upper back pain than their nonacademic counterpart. Additionally, more male academic staff than nonacademic staff suffer from upper back pain and more female academic staff than their nonacademic counterpart. Within the academic staff family, more males than females suffer from U.B.P than their female colleagues. Among the nonacademic staff, there was no difference in number of cases of sufferers between the male and female.

This revealed that prolonged standing or sitting while academic could be a risk factor associated with the development of upper back pain among lecturers, thus, the higher frequency noted among the academic staff. The result of this study however, agrees with the work of (Alias et al., 2020), where it was reported that prevalence of upper back pain was higher among school teachers who taught while standing for between 1 and 2 hours ($p < 0.05$).

Gender wise, this study result showed that there are more male suffers than female from upper back pain within the academic staff group, while among the nonacademic staff, there was no difference between male sufferers and female. This finding was in contrast

with the finding of (Alias et al., 2020) and (Souza et al., 2021), where more female than male sufferers were reported respectively. The difference noted could be attributed to differences in sample sizes, difference in level of awareness and knowledge of work station ergonomics.

Neck pain in the present context, had more sufferers among the academic staff than the nonacademic staff. Within the academic staff group, more male staff members suffer neck pain than female staff members. Conversely, more female staff from nonacademic group suffer more neck pain than male staff members within the nonacademic group. Between the groups, neck pain was noted to be higher among the male academic staff than the male nonacademic staff.

On the other hand, the study finding showed that more females among the nonacademic staff suffered from neck pain than the females in the academic staff class. This can be attributed to multi-tasking within the ambit of the office on the part of the female nonacademic staff, with little or no time to rest, which can rarely be seen among academic female staff on regular basis.

The dynamic nature of male staff member often predisposes them to MSDs in the neck region. Similarly, the female nonacademic staff at times, try to multi-task the body to make ends meet in terms of income generation. The finding from our study within the academic staff group, turned out to be in disharmony with previous work done by (Vega-fernández et al., 2022), where it was reported that more females than males suffered from neck pain. This could be explained in the light of epidemiological differences between their study and our study.

From our study, it was revealed that there were more cases of shoulder and wrist pain among the academic staff than the nonacademic staff. From the perspective of gender distribution within the academic group, our results showed that more males than females suffer from shoulder and wrist pain. A reversed trend was noted within the nonacademic group, where there were more female

staff members suffering from shoulder and wrist pain compared to their male colleagues.

Still on gender, more males in the academic group than the nonacademic group were noted to be suffering from shoulder and wrist pain. With the females, a tie was noted, as the number of female academic staff suffering from shoulder and wrist pain, doubled that of the nonacademic staff. The variations noted within the academic group as per gender, could be explained in light of the fact that most male teaching staff tend to expend more energy in the usage of their body parts especially the hands than their female colleagues, which could result in MSDs of the upper limb over a short period of time, While the variation in gender noted among the female nonacademic staff members could be due to the nature of most office work, which is often static and repetitive.

Our finding of having more shoulder pain sufferers among the academic staff than the nonacademic staff came to be in unison with previous work done by (Ibrahim and Syed 2020), where it was reported that 69.4% of the respondents, claimed to have shoulder pain. The higher outcome of female sufferers among the nonacademic staff could not be compared with previous research findings because of non-availability of conducted studies on university female nonacademic staff. However, finding about on female nonacademic staff of secondary and primary schools.

Conclusion

The findings from the present study in regards to the gender distributions among the academic and nonacademic staff exposed the nature and types of work related musculoskeletal disorders suffered by the staff members. Thus, to avert these musculoskeletal problems, both the staff and management should make a critical evaluation of the different workstations, to identify the baseline causes of the common MSDs among the employees. That being said, an ergonomically fit working environment can reduce work

related musculoskeletal disorders among the academic and nonacademic staff. Besides, with an ergonomically fit workstation, job satisfaction, safety and staff welfare will improve. Applying ergonomic principles in daily workstation practices will also go a long way in preventing and even reducing the problem of MSDs among BSU employees.

Authors' Contributions

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REFERENCES

- Alias, A. N., Karuppiah, K., How, V., & Perumal, V. (2020). *Does Prolonged Standing at Work Among Teachers Associated With Musculoskeletal Disorders (MSDs)? 16*(May), 281–289.
- Chandwani, A., Chauhan, M. K., & Bhatnagar, A. (2019). *Ergonomics Assessment of Office Desk Workers Working in Corporate Offices. 9*(August), 367–375.
- Ibrahim, A., & M, Q. S. (2020). *Ergonomics Study of the Incidence of Musculoskeletal Disorder among the School Teachers in Egba Division of Ogun State Nigeria Ergonomics Study of the Incidence of Musculoskeletal Disorder among the School Teachers in Egba Division of Ogun State Nigeria. June, 1–9.*
- Kumari, A., & Kaur, H. (2018). *Musculoskeletal discomforts faced by workers in food processing enterprises of Punjab. 7*(6), 465–469.
- Meaza, H., Temesgen, M. H., Redae, G., Hailemariam, T. T., & Alamer, A. (2020). *Prevalence of Musculoskeletal Pain Among Academic Staff of Mekelle University , Ethiopia.*
<https://doi.org/10.1177/1179544120974671>
- Ndejjo, R., Musinguzi, G., Yu, X., Buregyeya, E., Musoke, D., Wang, J., Halage, A. A., Whalen, C., Bazeyo, W., Williams, P., & Ssempebwa, J. (2015). *Occupational Health Hazards among Healthcare Workers in. 2015.*
- Nwokedi, G. I. (2019). *Staff Awareness of Ergonomics Principles Required at the Computer Workstation : Case Study of University of Jos Library. September.*
- Ojoawo, A. O., Awotidebe, T. O., & Akinola, A. G. (2016).

Prevalence of work related musculoskeletal pain among academic and non academic staff of a Nigerian university. September 2017. <https://doi.org/10.5455/gulhane.199046>

Souza, C. S., Cardoso, J. P., Aguiar, A. P., Mascarenhas, M., Rosa, S., & Oliveira, S. (2021). *Work-related musculoskeletal disorders among schoolteachers. 19(2), 140–150.*

Susihono, W., & Gunawan, G. (2018). *Design of standard operating procedure (SOP) based at ergonomic working attitude through musculoskeletal disorders (Msd ' s) complaints. 04019, 1–8.*

Vega-fernández, G., Olave, E., & Lizana, P. A. (2022). *Musculoskeletal Disorders and Quality of Life in Chilean Teachers : A Cross-Sectional Study. 10(March), 1–9.* <https://doi.org/10.3389/fpubh.2022.810036>

Woo, H. C., White, P., & Lai, C. (2015). *Ergonomics Standards and Guidelines for Computer Workstation Design and the Impact on Users ' Health – A Review Ergonomics standards and guidelines for computer workstation design and the impact on users ' health – a review. July.* <https://doi.org/10.1080/00140139.2015.1076528>

