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Ergonomics and Psychosocial Risks Relation to Work Performance for Employees in Banking Sector

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ABSTRACT

Nowadays ergonomics encompasses a comprehensive framework aimed at optimizing the compatibility between individuals, their surrounding environment, and work performance. Such approach is leaning towards enhancing both the well-being of banking sector employees and the productivity of organizations. The aim of this study is to investigate ergonomics and psychosocial risks relation to work performance for employees in banking sector based on theoretical analysis and questionnaire data. Theoretical analysis with monographic method was performed and a questionnaire was used in the study which was elaborated based on modified Nordic Musculoskeletal Questionnaire. Several studies show that the physical and mental health of workers is a key indicator of their participation in the labor market and, often due to poor health, people are not employed. There is a complex interplay between the effects of psychosocial risks, their mitigating or aggravating factors and the resulting productivity loss. The survey was conducted among 1300 office workers in banking sector, 763 females and 537 males in various age groups were analyzed. Results reveal that workers in the banking sector are mainly subjected to compulsory work positions, monotonous work operations as well as they work under high pressure deadlines that can cause high stress levels. At the same time answers to the questions regarding work performance proves that banking sector workers, both males and females, are not coping with all the tasks equally, there is focusing problems as well as fatigue from mental workload that influence the work performance aspects. Both mental and physical risks at work affect employees health in banking sector that in many cases result in muscular skeletal disorders and stress at work, that significantly can impact also work performance.

Keywords: Banking sector, Ergonomics, Psychosocial, Performance, Employees

INTRODUCTION

The banking sector is conceptualized as a central hub and diagnostic instrument of the financial system. As a foundational element of the economy, this sector exerts a significant influence on the economic progression of all nations. Overload at work, ambiguity in defining duties and responsibilities, lack of support from colleagues and management, lack of authority to control resources, absence of autonomy in taking decisions, work life imbalance are some of the sources of stress in organizations which in turn affect the mental and physical wellbeing of employees

(Wong et al., 2019; Hsu, 2019). Nowadays ergonomics encompasses a comprehensive framework aimed at optimizing the compatibility between individuals, their surrounding environment, and work performance. Such approach is leaning towards enhancing both the well-being of workers and the productivity of organizations (Garner and Malouf, 2023). Consequently, the value of organizations and societies lies in their human capital, where the primary indicator of quality of life is the health of workers. Psychosocial risks at work have a strong impact on workers, especially factors including job control and demands, support and collaboration between colleagues or management (Tang et al., 2022).

Physical and mental health of workers is a key indicator of their participation in the labour market and, often due to poor health, people are not employed (van Rijn et al., 2014; Karwowski et al., 2022). Modern technologies and complex work tasks require high concentration abilities from employees that are linked to decision-making in limited time and necessary procedures (De Jonge and Dormann, 2003). There is a complex interplay between the effects of psychosocial risks, their mitigating or aggravating factors and the resulting performance consequences.

Analysis of the scientific literature supports the theory that work related muscular skeletal disorders (WRMSDs) have a multifactorial and complex aetiology, including psychosocial risks at work. Bank employees are mainly employed in front of a computer on a daily basis, exposed to a forced working posture and strain on wrists (Wahlström, 2005). Prolonged work with computer and digital devices also puts strain on the eye muscles. Scientists proved that WRMSDs occurs more with increasing workload (Buruck, 2019). Long hours at the computer and insufficient rest time are the most important contributors to discomfort in certain parts of the body, particularly the lower back, shoulders and neck, including the distal parts of the arms (Dieleman et al., 2020). Researchers have shown that the adverse effects of ergonomic risks on bank employees are closely linked to psychosocial risks at work and that their interaction is inevitable (Bezzina et al., 2023). The aim of this study is to investigate ergonomics and psychosocial risks relation to work performance for employees in banking sector based on theoretical analysis and questionnaire data.

METHODS AND MATERIALS

For theoretical analysis the monographic method was used that collected and summarized information on ergonomics and psychosocial risks in banking sector. The monographic method involved extensive literature reviews found in Scopus and Web of Science journals from 2005 till 2025 using keywords of ergonomics, psychosocial risks, performance, banking sector.

Modified Nordic Musculoskeletal Questionnaire (NMQ-E was selected to assess bank employees' complaints about pain/ discomfort after work (Kuorinka et al., 1987). In the present research the modified (extended) version of Nordic musculoskeletal questionnaire was used to assess musculoskeletal problems of banking employees (the nature and severity of self-rated musculoskeletal symptoms, including items inquiring about the

experience of problems in nine body areas). Extended version of NMQ-E contains some additional questions regarding body postures, job demands and social support (Roja et al., 2013).

The questionnaire asked about pain or discomfort in the last 12 months in the following body parts: neck, shoulders, elbow, wrists, upper back, lower back, buttocks, knees and shins. Respondents answered 'yes' or 'no', including for both sides of the body, for example for the right or left shoulders or both shoulders, same for wrists, elbows, knees and shins. This questionnaire was supplemented by questions on body postures during work and questions on psychosocial risks at work in relation to work performance. The questions included the opinions of bank employees on physical exhaustion, extensive work, high work speed, too many job tasks, colleges' and supervisors' support. Respondents answered in the following categories: always, sometimes, never. The survey was conducted among 1300 employees in banking sector, 763 females and 537 males in various age groups were analyzed. Background factors of research participants (banking sector employees) can be seen in Table 1 and Table 2.

Table 1: Background factors of research participants, age groups, gender, proportion.

Age Group	Gender	Participants	Proportion (%)
22–25 years	Male	209	16.1
	Female	314	24.2
	Other	4	0.3
	Total	527	40.5
26–35 years	Male	183	14.1
	Female	261	20.1
	Other	3	0.2
	Total	447	34.4
36–45 years	Male	145	11.2
	Female	181	13.9
	Other	0	0
	Total	326	25.1
Total		1300	100

In this research 58.2% of women, 41.3% of men and 0.5% of others in different age groups took part in the survey.

Table 2: Length of service in the profession for the research participants.

Length of Service	Participants	Proportion (%)
Up to 1 year	208	16.0
2 to 5 years	425	32.7
6 to 20 years	615	47.3
21 and over	52	4.0
Total	1300	100

It should be noted that in all age groups there were more women than men employed in banks. Analyzing the length of service, results show that

employees (47.3%) had 6 to 20 years length of service, but 32.7% had 2 to 5 years and 16.0% had up to one year. It means that in banking sector there are mainly employed younger generation that may be more adaptable to new technologies and work practices, but they might also face increased stress due to high job demands and expectations according to several research findings (Giorgi et al., 2017).

RESULTS AND DISCUSSION

Banking workers jobs are characterised by intensive computer work and it is mainly sedentary (Toomingas et al., 2012). The results of several studies are very similar and confirm that workplace ergonomics and psychosocial risks have a significant impact on employee performance (Hansika and Amarathunga, 2016; Makhbul et al., 2011; Ozvurmaz and Mandiracioglu, 2018). High job demands, limited decision-making, overwork, and inadequate pay have been shown to be potential psychosocial risks for the development of not only musculoskeletal disorders but also mental health disorders (Stansfeld and Candy, 2007). Studies have shown that computer workers' muscles are subjected to static load, often caused by static shoulder girdle positions, wrist overload and frequent arm movements (Collins and O'Sullivan, 2015). Several studies show the impact of long working hours on employees has a significant impact on both physical and mental health (Lee et al., 2007; Wong et al., 2019). Therefore, a systematic assessment of these risks is needed to reduce or prevent the adverse effects of ergonomic and psychosocial risks on employees, including in the banking sector (Oakman et al., 2019; Leka et al., 2015b).

The results of the questionnaire on discomfort or pain in certain parts of the body after work in the last year are shown in Table 3.

Table 3: Distribution of persistent complaints in different parts of the body of bank employees and psychosocial complaints in last year.

Complaint	Male (n = 537)	%	Female (n = 756)	%	Other (n = 7)	%
Neck	269	50.0	378	50.0	4	57.1
Shoulder	269	50.0	401	53.0	4	57.1
Elbow	193	36.0	76	10.0	1	14.3
Wrist/hands	214	39.9	454	60.0	3	42.9
Upper back	269	50.0	431	57.0	4	57.1
Low back	162	30.1	484	64.0	2	28.6
Hip/Thigh	144	26.9	189	25.0	2	28.6
Knee	21	4.0	0	0.0	0	0.0
Ankle/Shank/Feet	145	27.0	106	14.0	1	14.3
Awkward posture	215	40.0	295	39.0	3	42.9
Physical exhausting	269	50.0	643	85.0	4	57.1
Extensive work	193	36.0	295	39.0	3	42.9
High work speed	269	50.0	378	50.0	4	57.1
Too many job tasks	193	36.0	318	42.0	3	42.9
Colleagues' support	48	9.0	129	17.0	1	14.3
Supervisors' support	118	22.0	189	25.0	2	28.6
Neck	269	50.0	378	50.0	4	57.1

The highest number of employees (40.5%) was in the age group 22–25 years. The 26–35 age group accounted for 34.4% of bank employees, but the 36–45 age group accounted for 25.1%. Bank employees (47.3%) had 6 to 20 years of professional experience, 32.7% had 2 to 5 years and 16.0% had less than one year.

The analysis of employees' complaints of discomfort or pain in specific parts of the body shows that bank employees mainly complain of discomfort or pain in the neck, shoulders, upper and lower back. Other studies also confirm that the most frequent complaints of employees are pain or discomfort in the neck and lower back (Algarni, 2022; Mohammadipour, 2018; Da Costa and Vieira, 2010; Sihawong et al., 2015).

When comparing by gender, men had more pronounced discomfort in the neck (50.0%), shoulder area (50.0%) and upper back, wrist (39.0%), while women had more pronounced discomfort in the neck (50.0%), shoulder area (53.0%), wrist (60.0%), upper back and lower back (57.0% and 64.0%, respectively). Also, another research results on computer users and WRMSDs proved that the most affected areas for employees are the lower back, neck, upper back and shoulders (Demissie et al., 2014). In our study, the differences in complaints between women and men are insignificant and this is also consistent with the results of other authors' studies that there are no differences in pain areas when comparing respondents by gender (Kim et al., 2018; Jahre et al., 2020). However, some studies have indicated that women experience more pain or discomfort than men (Afsharian et al., 2023; Christensen et al., 2018; Collins and O'Sullivan, 2015). This could indicate that women are more sensitive to ergonomic and psychosocial risks at work.

Both genders were almost equally likely to report working in a forced postures (men 40.0%, women 39.0%). The results are also in line with other authors' studies on workers' complaints related to forced posture while working at a computer and digital devices (Nepal and Koirala, 2024; Motamedzadeh et al., 2021).

The analysis of psychosocial risks shows that women (85.0%) are more likely to report that work is physically exhausting than men (50.0%). Women complain about extensive work slightly more than men, 39.0% and 36.0%, respectively, and both men (36.0%) and women (42.0%) express similar opinions about many tasks. Equally men and women consider that they work is at high work speed. Studies by other authors have also indicated that bank employees are exposed to high workloads, long working hours and that psychosocial risks such as low levels of control, low support, cooperation, job control and job demands were statistically significantly associated with the risk of WRMSDs and their progression (Nepal and Koirala, 2024; Bezzina et al., 2023). Other studies have made similar assessments, finding a statistically significant link between psychosocial risks and employee health (Patronea, 2017) and work performance (Di Tecco et al., 2023). In many cases psychological stress in the workplace in combination with WRMSDs are major contributors to decreased work performance and productivity.

CONCLUSION

The contemporary banking sector office work environment has undergone a substantial transformation, requiring more mental engagement, but at the same time work process is influenced by the physical ergonomic risks as compulsory long sitting hours and work with computer and digital devices. As theoretical analysis and questionnaire data showed that long working hours in compulsory work positions can affect workers physical and mental health. Hence both mental and physical risks at work affect employees health in banking sector that in many cases result in muscular skeletal disorders and stress at work, that significantly can impact also work performance.

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