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Introduction

According to WHO, 20–33% of people worldwide suffer from musculoskeletal disorders (MSDs), with 75–84% experiencing lower back pain at least once in their lifetime [1,2]. MSDs are one of the leading causes of sick leave. Risk factors for MSDs include physical inactivity, improper working posture, and excessive stress. Numerous studies have shown that engaging in physical activity can effectively reduce musculoskeletal pain among office workers [3], particularly through stretching exercises, yoga, and Pilates [4-6] as well as exercises tailored to specific body regions [7].

Study aim

This study aimed to evaluate the effectiveness of a workplace intervention in reducing stress and musculoskeletal complaints among high-stressed office employees.

Methods

Participants

- ✓ 188 employees (137 women)
- ✓ aged 30–45
- ✓ experienced excessive stress (PSS-10)
- ✓ worked in a seated position

Study design

- ✓ randomly assigned to the intervention or control group
- ✓ intervention lasted two months and consisted of a structured exercise program,
- ✓ a waitlist control condition
- ✓ assesment before and after the intervention

Tests

- ✓ **PSS-10** (Cohen et al., 1993, Juczyński, Oginska-Bulik, 2009)
- ✓ **DASS-21** (Lovibond, Lovibond, 1995)
- ✓ **NMQ supplemented by the VAS** (Kuorinka et al. 1987)
- ✓ **Range of mobility of the cervical and lumbar spine** (Zembaty, 2003; Rosławski, Skolimowski, 2000)



Workplace Intervention

- ✓ guided workplace exercise sessions once a week, led by a physiotherapist, lasted 40 minutes
- ✓ additional exercises at home
- ✓ included mobilization, strengthening, stretching and relaxation exercises

Results

The analysis of results indicates that participants in the intervention group experienced a stress reduction and improved mental health more than the control group.

Before the intervention, the most commonly reported muscle pain areas were the cervical, thoracic, and lumbar spine. After two months of participation, a reduction in reported pain across various body regions was observed. The spinal mobility assessments, however, did not show statistically significant improvements.

Furthermore, participants reported that group exercise sessions improved workplace relationships and motivated them to engage in physical activity more frequently.

Tests	ANOVA time/ time x group	Post-hoc
DASS-Stress	112.25***/ 23.38***	I: $p < 0.001$; d Cohen = 1.10 C: $p < 0.001$; d Cohen = 0.54
DASS-Anxiety	53.77***/ 12.85***	I: $p < 0.001$; d Cohen = 0.81 C: $p = 0.015$; d Cohen = 0.33
DASS-Depression	71.04***/13.24***	I: $p < 0.001$; d Cohen = 0.88 C: $p = 0.002$; d Cohen = 0.43
NAQ-Neck pain intensity	11.99***/4.10*	I: $p < 0.001$ C: $p = 0.41$
NAQ-Shoulder pain intensity	7.56**/0.62	I: $p = 0.010$ C: $p = 0.20$
NAQ-Upper back pain intensity	4.97*/6.58*	I: $p < 0.001$ C: $p = 0.83$
NAQ-Lower back pain intensity	11.99***/1.69	I: $p < 0.001$ C: $p = 0.17$

Note: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; I – Intervention group; C - Control group

Conclusions

In conclusion, our findings suggest that structured workplace exercise programs can positively impact employee health by reducing stress and musculoskeletal complaints, while also enhancing social dynamics in the workplace. Given the high prevalence of MSDs and stress among office workers, integrating such programs into the work environment appears to be an effective and practical approach to improving both well-being and productivity.

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