

WORKPLACE PHYSICAL ACTIVITY PROGRAM: AN INTERVENTION PROPOSAL



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PROGRAMA DE EXERCÍCIO FÍSICO NO AMBIENTE DE TRABALHO: UMA PROPOSTA DE INTERVENÇÃO

PROGRAMA DE EJERCICIO FÍSICO EN EL AMBIENTE DE TRABAJO: UNA PROPUESTA DE INTERVENCIÓN

Rafael Cunha Laux¹
(Physical Education Professional)
Sara Teresinha Corazza²
(Physical Education Professional)
Alexandro Andrade³
(Physical Education Professional)

1. Universidade do Oeste de Santa Catarina (UNOESC), Chapecó, SC, Brazil.

2. Universidade Federal de Santa Maria (UFSM), Santa Maria, RS, Brazil.

3. Universidade do Estado de Santa Catarina (UDESC), Florianópolis, SC, Brazil.

Correspondence:

Av. Nereu Ramos, 3777-D,
Seminário, Chapecó, SC, Brazil,
89813-000.
rafael.laux@unoesc.edu.br

ABSTRACT

Contemporary workstations have been transformed by technological advances, meaning that employees are less physically active. Physical exercise programs are a tool to combat this sedentary lifestyle and prevent possible work-related illnesses. The aim of this study consisted of drafting an intervention proposal through physical exercise – the Workplace Physical Activity Program / WPAP – to be applied in the workplace, covering physical, mental and social aspects. The trial was methodologically structured in three stages: a) contextualization of the WPAP; b) implementation of the program; and c) the intervention proposal. It is believed that this type of program should receive investments, as it has a quick return and effectively improves the health of workers.

Level of Evidence V; Expert opinion.

Keywords: Occupational health; Quality of life; Workers; Tertiary prevention.

RESUMO

Devido aos avanços tecnológicos, a modernidade vem transformando os postos de trabalho, tornando os funcionários menos ativos fisicamente. Os programas de exercícios físicos são uma ferramenta para combater esse sedentarismo e evitar possíveis doenças relacionadas ao trabalho. O objetivo deste estudo consistiu em elaborar uma proposta de intervenção por meio de exercícios físicos – Programa de Exercícios Físicos no Ambiente de Trabalho/PEFAT – para ser aplicada no ambiente de trabalho, contemplando os aspectos físico, mental e social. O ensaio estruturou-se metodologicamente em três fases: a) contextualização sobre o PEFAT; b) implantação do programa e c) a proposta de intervenção. Considera-se que esse tipo de programa deva ser foco de investimento, já que seu retorno é rápido e eficaz para a saúde do trabalhador. **Nível de Evidência V; Opinião do especialista.**

Descritores: Saúde do trabalhador; Qualidade de vida; Trabalhadores; Prevenção terciária.

RESUMEN

Debido a los avances tecnológicos, la modernidad viene transformando los puestos de trabajo, haciendo que los funcionarios sean menos activos físicamente. Los programas de ejercicios físicos son una herramienta para combatir ese sedentarismo y evitar posibles enfermedades relacionadas al trabajo. El objetivo de este estudio consistió en elaborar una propuesta de intervención a través de ejercicios físicos - Programa de Ejercicios Físicos en el Ambiente de Trabajo/PEFAT – para que sea aplicada en el ambiente de trabajo, contemplando los aspectos físico, mental y social. El ensayo se estructuró metodológicamente en tres fases: a) contextualización sobre el PEFAT; b) implantación del programa; y c) la propuesta de intervención. Se considera que este tipo de programa debe ser el foco de inversión, ya que su retorno es rápido y eficaz para la salud del trabajador. **Nivel de Evidencia V; Opinión del especialista.**

Descriptores: Salud laboral; Calidad de vida; Trabajadores; Prevención terciaria.



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INTRODUCTION

Work activities are increasingly occupying a very important place in the daily journey of everybody, this factor can be seen as the main cause of mental and physical ills.¹ However, some companies only concern themselves with occupational hazards related to employee exposure to biological, chemical and physical agents and forget the psychosocial factors involved in the work, a fact justified by the difficulty of understanding and measuring these agents.²

Symptoms from these psychosocial factors present physical and psychological manifestations, such as physical or mental tiredness, fatigue, stress and overload,³ contributing to the increase in the incidence of diseases related to Work-Related Musculoskeletal Disorders, together to heavy physical labor, smoking, and high body mass index.⁴

In some work activities, such as the administrative one, the risk of diseases related to the sedentary lifestyle increases, by the characteristic of the profession, where the subject spends a lot of time in the sitting position.⁵ This reason contributes to increase the predominance of neck pain in this professional category.⁶

In this scenario, companies are realizing the need to invest in primary intervention in workers' health, creating life quality programs, both to improve the work environment and to promote healthy habits.⁷ Among these quality of life programs, those who promote the practice of physical exercise are used, since there are specific activities to reduce and prevent occupational diseases.^{1,8-11}

Workplace physical activity program

Workplace Physical Activity Programs (WPAP), known internationally as Workplace Physical Activity Intervention^{8,12-15} are also called Labor Gymnastics in Brazil.¹⁶ In the course of the text will be used the term WPAP covering all the modalities of interventions with physical exercise in the workplace.

WPAP is an alternative to contribute to the physical and mental health of the worker when diseases are not yet in place,¹⁶ in addition to favoring social interaction, improving emotional and psychosocial factors.^{10,11} Interventions consist of active pauses during work for the realization of 10 to 15 minutes of physical exercises with the intention of compensating for the long working days and to stimulate the increase of the total practice of exercise of the employees.^{1,8,12-15}

The classes of these programs are designed and elaborated specifically for each work activity, emphasizing exercises of flexibility, stretching, relaxation, muscle strengthening and motor coordination.¹¹ However, WPAP goes far beyond compensatory exercises for the physical part, the objective through them is to promote mental and social aspects such as self-knowledge, self-esteem and better relationships among co-workers.¹⁷

These pauses to perform physical exercises, according to researches, can be done in three moments, they are: a) warm-up or preparatory gymnastics, which is performed before the workday and aims to prepare the individual for his work activities; b) pause or compensatory gymnastics, which is carried out in the middle of the work and has as main objective to promote specific exercises that compensate repetitive efforts, overloaded structures or postures requested during the work; and c) relaxation gymnastics, which is performed at the end of the day and is intended to provide muscular and mental relaxation to employees.^{10,16}

WPAP brings benefits to the company and employees. For the company it is possible to emphasize the influence in the increase of the productivity, in the reduction of the incidence of occupational diseases and in the smaller expenses with medical expenses. On the other hand, employees perceive improvement in self-esteem, reduction of pain and stress, improvement in interpersonal relationships, increased disposition, reduction of central and peripheral fatigue, and improvement of physical, mental and emotional health.¹⁸

Recent studies point to health-related benefits of WPAP participants, such as reduced physical inactivity in leisure time,¹⁹ decreased intensity and frequency of muscle pain and improved posture in the sitting position,²⁰ In a study in which only the stretching exercise was used, similar to WPAP, it was observed that this type of activity is efficient for the reduction of tension in the neck region, as well as the importance of social support as a way to reduce absences at work by medical certificates.²¹

The physical exercise in the company ends up transforming the way of life of employees, reducing absenteeism and increasing productivity.²² However, these benefits are not only in the health-oriented aspects, but also in the motor elements, such as global motricity and reaction time, which indirectly may also affect the quality of life.^{1,9,23}

It should be pointed out that for WPAPs to bring the various benefits derived from their practice, it is necessary that their planning and implementation be done by trained and qualified persons.^{9,10,16} Pereira¹⁶ highlights that the planning of these programs must follow elaboration criteria such as work and work environment analysis, general and specific objectives, content, teaching-learning strategies, materials and assessment. But only the planning and organization of classes is not enough, lectures or other means need to be promoted to make employees aware of the importance of the program and posture in everyday life.²⁴

In this perspective of supporting and sustaining WPAP, the objective of this study is to elaborate a proposal of intervention through physical movements to be applied in the work environment, contemplating the physical, mental and social aspects of the worker.

Proposal of a workplace physical activity program

Before beginning WPAP classes, it is necessary to elaborate an action plan where the professional of physical education will have to:

a) Assess the work environment and characteristics of the employees:

the evaluation is composed by the physical work environment analysis to verify if the classes of the program will be carried out individually, by sector or in groups with several sectors. When choosing the activities and exercises of the classes the professional must observe the routine of the company, the uniforms or clothes used by the workers, the workstations to identify muscular and articular overloads, the medical records of the employees with information on the state of health and diagnose the muscle and joint pain or discomfort through a subjective evaluation. (Figure 1)

b) Elaborate the program objectives:

the general objective of the program and the specific objectives of each class should take into account the evaluation carried out and the goal of the contracting institution of the program. The results found in the evaluation of the work environment and the characteristics of the employees will, for example, bring information to elaborate goals for the compensation of identified muscular loads and decrease of the pain report. On the other hand, the purpose that the institution seeks with the implementation of the program can have other objectives, such as, the increase of the physical practice of the employees, the decrease of absenteeism and the improvement in the interpersonal relations.

c) Publicize it:

after evaluating the work environment and elaborating the objectives, the program should be disseminated to the employees through lectures, conversations, e-mails or posters, as the contracting institution deems appropriate. In this contact, the worker will receive information about the importance of the program, its objectives and the benefits it will bring to the work and daily life.

d) Carry out the classes:

only in this moment the classes of the program should start, because the physical education professional will already have all the necessary information to prepare and deliver the classes of the program.

e) Evaluate it:

the evaluation of the program should re-evaluate the work environment and characteristics of the employees and the objectives of the program, as well as to verify specific items of this program

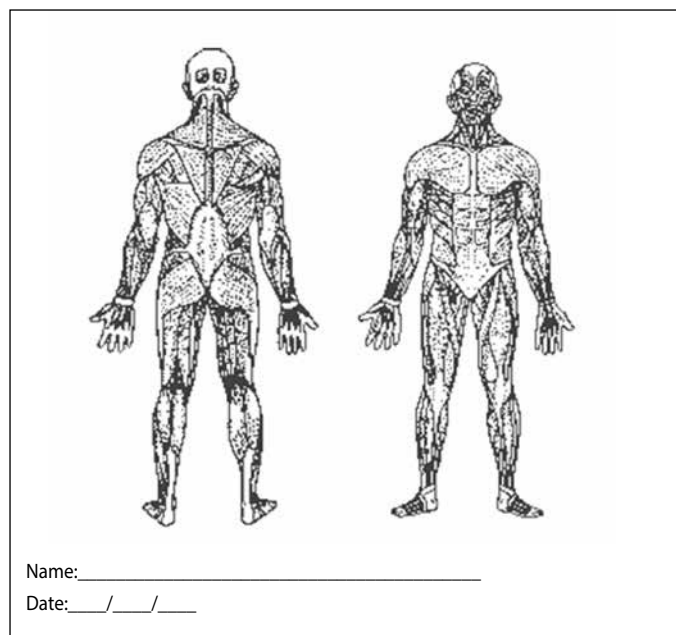


Figure 1. Subjective assessment of muscle or joint pain or discomfort.

(level of interest and satisfaction with the program), the classes (how they are feeling after the classes, exercises, activities and songs) and the professional who is applying the program (posture and vocabulary used during classes).

f) Readjust it: readjustments in the program should take into account possible changes in the work environment and characteristics of the employees, the proposed objectives and the results of the evaluation carried out.

It should be noted in the action plan that some items should be continuously evaluated so that the program achieves the desired goals, such as the preparation and start of classes, assessment and readjustments. (Figure 2) The contracting institution should receive from the practitioner implementing the program the action plan and periodically a report with the results of the proposed evaluations together with the frequency of the staff and suggestions for improvement of the program.

Among the items of the action plan, the preparation and the beginning of the classes is the part that needs more attention and knowledge of the professional who is implementing the program. In order to elaborate the classes of the same one we can use classic methodologies, as of Figueiredo and Mont'Alvão¹⁰ or the one of Pereira,¹⁶ that divide three basic types of classes: preparatory gymnastics, compensatory gymnastics and relaxation gymnastics. However, with the modernization of the work environment it becomes almost impossible to apply the program three times a day, being necessary to choose only one of the types of classes or to switch between them, trying not to lose its benefits.

A proposed "modernization" of WPAP was the methodology used by Laux et al.,²⁵ who divided the class into three moments, initial part with warm-up exercises, main part with compensatory exercises and final part with relaxation exercises, and obtained a reduction of 51.52% of the participants' medical certificates (43.48% for systemic diseases and 55.56% for musculoskeletal diseases). With the new intervention protocol for WPAP, more freedom is obtained in the elaboration of the lesson, besides contemplating activities and exercises that develop physical, mental and social aspects of the workers, as well as leave the class time flexible (8 to 15 minutes) according to the need verified in the evaluation and the time provided by the institution for this practice. (Figure 3)

Organization and development of classes of workplace physical activity programs (WPAP)

This topic presents the structuring of the classes, the suggestions of their organization, the choice of activities and exercises, and some activities and exercises to elaborate the classes of the program. (Table 1)

1. Initial part (3 to 5 minutes): In the initial part, warm-up exercises with play activities are emphasized, with the purpose of increasing the

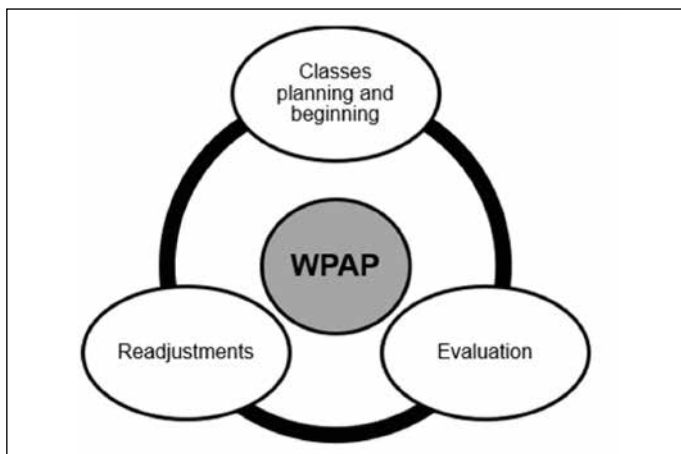


Figure 2. Continuous evaluation cycle of the action plan.

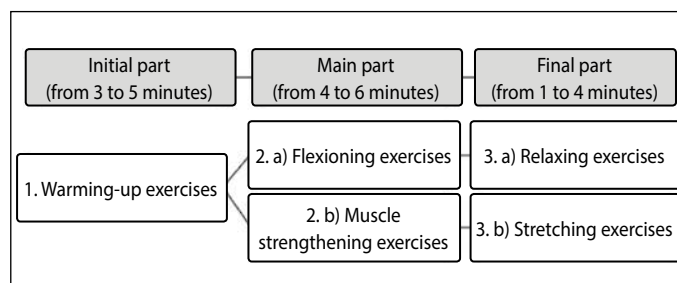


Figure 3. Structure of the Workplace Physical Activity Program.

heart rate and preparing the musculoskeletal system for the main part of the lesson, reducing the risk of injury.²⁶ In addition to providing moments of relaxation and social interaction, which will enable socialization among the subjects involved. The activities used in this part of the class can be simple couplings with cones, to more elaborate activities that can be found in recreation and leisure books. It is important to emphasize the care to avoid accidents during the practice and to provide motor experiences to all participants.

2. Main part (4 to 6 minutes): The main goal is to compensate the efforts and postures that occur during the working day. This part can be composed of exercises of flexion or muscular reinforcement according to the specific purpose of the lesson. The proportion of classes of muscle strengthening and flexion will depend on the evaluation of the work environment and the type of service performed, it is suggested to intercalate the sessions that develop these physical capacities.

2. a) Flexing exercises: flexing exercises should follow a logical sequence to facilitate the application by the teacher and the execution of the proposed by the student. The exercises can start in the cephalopathic or near-distal direction, can be performed individually or in pairs, statically or dynamically depending on the objective (emphasis on the joint capsule or muscle) and with or without the use of materials. The amount of exercise for each muscle group should be chosen according to the results of the evaluation of the work environment and the characteristics of the employees, always emphasizing the regions with the greatest pain or overload.

2. b) Muscle reinforcement exercises: Muscle reinforcement exercises should be chosen emphasizing the evaluation of the work environment and the characteristics of the employees. They can be carried out individually or in pairs, with or without use of materials and dynamically or statically. For example, one can perform static or dynamic exercises of arm abduction or elbow flexion with or without the use of rods.

3. Final part (1 to 4 minutes): in the final part the objective is to decrease the heart rate and provide a moment for the subject to relax so that he can return to work. If flexion exercises were used in the main part, the final option will be relaxation exercises, but if muscle strengthening exercises were used in the main part, the next choice should be stretching exercises.

3. a) Relaxation exercises: Relaxation exercises can be done individually, in pairs or in groups. In this part of the lesson breathing exercises can be performed, for example, in the orthostatic position with eyes closed and with hands on top of the abdomen, the subject will breathe through the nose counting to five, hold the air for three seconds, slow it down for five seconds. Or, meditation exercises, massage and group dynamics.

3. b) Stretching exercises: Stretching exercises should be chosen to lengthen and relax the muscle groups that participated in muscle strengthening exercises. They can be done individually or in pairs, either statically or dynamically.

Table 1. Suggestions for activities and exercises for WPAP classes.

Part of the class	Activities or Exercises	Execution
1. Initial part Type of Exercise: Warming-up Time: From 3 to 5 minutes.	Monkey with no tail (1) ²⁷ ; dribbling the cones (2); warming-up in the same place (3) ²⁸ ; and in the rhythm of music (4).	1. A newspaper sheet will be given to each participant and will be used as if it were the "monkey's tail"; at the teacher's signal, the participants should circulate in the determined space, trying to catch the "tail" of their colleagues and to protect theirs. They can win either the one who gets more "tails" or the one who can stay with his/her "tail" ²⁷ . 2. The subjects will be arranged in a column, the first one will pick up a rubber ball and will bounce it in a zigzag between the cones, come back and hand the ball to the next colleague to perform the task, and so on. 3. Arranged in a circle, the subjects will perform movements intercalating several repetitions of knee elevation and knee flexion ²⁸ . 4. The subjects will be freely arranged around the room and will perform abduction and leg adduction movements in the rhythm of the music (step opens and closes), the teacher will add more elements when the individuals demonstrate some mastery of the previous step. Some elements that can be added are: clapping and front raising of arms.
2.a) Main part Type of exercise: Flexioning. Time: From 4 to 6 minutes.	Cervical region (1); shoulder region (2); region of column (3); and lower limb (4). ²⁹	1. Standing up, the subject will perform flexion, head extension and cervical movements. 2. In the same position of the previous exercise, the subject will horizontally adduct an arm. 3. The subject with the trunk flexed forward will perform a lateral rotation movement. 4. Standing up, the subject will do an extension of the thigh with the flexed leg (all exercises with a maximum work intensity). ²⁹
2.b) Main Part Type of exercise: Muscle strengthening. Time: From 4 to 6 minutes.	Curved rowing (1), reverse crucifix (2), lateral lifting (3), and squatting (4). ³⁰	1. The subject will keep his/her feet apart laterally, with his/her knees semi-flexed, and the trunk bent forward in this position, he/she will pull the stick in the direction of the umbilical scar and return to the original position. 2. Same position of the previous exercise, the subject will perform a horizontal shoulder extension movement. 3. The subject will stay up with knees slightly flexed, arms along body and with a stick in hand (or other material), perform a shoulder abduction movement until the subject's arm is horizontal. 4. In the standing up position, the subject will maintain a spacing of the lower limbs slightly larger than the width of the shoulder, start one by projecting the gluteus posteriorly until reaching a 90° angle and return to the original position. ³⁰
3.a) Final part Type of exercise: Relaxing. Time: From 1 to 4 minutes.	Sitting massage (1), meditation (2) and balloon play (group dynamics) (3).	1. In pairs, one of the subjects will be seated while the other will perform massage movements on the shoulder and back. 2. The subjects seated, with closed eyes, will receive commands to be able to enter into a state of relaxation. 3. The subjects will be arranged freely in the room and should avoid that their balloon and those of the colleagues fall ground using only the head as a "racket".
3.b) Final part Type of exercise: Stretching. Time: From 1 to 4 minutes.	Cervical region (1); shoulder region (2); region of the wrists (3); region of the column (4); lower limb (5).	1. Standing up, the subject will perform the rotating movement of the head. 2. In the same position of the previous exercise, the subject will do a horizontal upper arm abduction. 3. With the arm extended, the subject will make the extension and flexion movement of the wrist with the help of the other hand. 4. Standing up, the subject will project his/her torso back, making an extension to lengthen the lumbar. 5. In the same position of the previous exercise, the individual will perform an adduction of the thigh with the flexed leg (submaximal work intensity). ²⁹

Final considerations on the application of WPAP

The use of playfulness and music should always be present in WPAP classes because of its great motivating power, as well as providing the worker with a pleasant and different environment from their routine. Another factor that influences the employee's adherence to the program is the use of different colored materials, such as the use of rubber balls, bows, rods and cones, which can be done by the physical education professional himself/herself. One of the aspects that should be considered is the realization of the classes in the work environment and with the clothes used in the day-to-day life, not interfering in the structure and logistics of the work institution.

This essay was designed to guide these interventions with physical exercise in the workplace in a structural way (how to set up the program and the classes), but it should be emphasized that the choice or creation of exercises and activities should be carried out by the professional responsible for the program. WPAPs are physical practices, and like any other program of activity or physical exercise, they must be elaborated, applied, evaluated, executed and supervised by physical education professionals, as described in Law 9,696 of September 1, 1998.³¹

The benefits of the WPAP proposal are related to the technical aspects of the implementation and maintenance of the program,

such as the short intervention time, the small amount of material needed and the minimal interference in the logistics of the company. Regarding the physiological aspects, there is an improvement in basic physical capacities such as flexibility and muscular strength, which according to Nobrega et al.²⁶ are important in the execution of daily activities and the life quality of the individuals. Another benefit is the reduction of medical certificates for osteo-musculoskeletal and systemic diseases.²⁵

With the theoretical assumptions raised and the study that has been used of the proposed intervention, it is considered that these types of programs with an emphasis on workers' quality of life should be the focus of investments, since their return can be presented in innumerable ways, in a short, a medium or a long term.

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