


## Health promotion of hospital workers through workplace gymnastics based on the pilates method

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### ABSTRACT

The growth of work-related illnesses has aroused the interest of researchers in quality of life at work, with a strong relationship between worker - work environment and work - illness. In this context, Occupational Gymnastics (OGS) has been an alternative in reducing and/or preventing illness and the Pilates method has emerged as an effective tool with possibilities for practicing exercises with an approach and appreciation of the integration of mind and body, improving well-being and quality of life. Considering the study carried out with members of the multi-professional teams at a public teaching hospital in the state of Pará, with favorable results, the construction of a program of care for the civil servant with physical activities related to guided practices, subsidized the elaboration of an educational tool through a guide to workplace gymnastics with guided exercises based on the pilates method, aiming to reduce daily stress, sedentary lifestyle and improve the general functionality and integration of the work team.

**Keywords:** Occupational gymnastics, Pilates, Workers' health.

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## INTRODUCTION

The increase in work-related injuries has aroused the interest of researchers in quality of life at work, with a strong relationship between worker – work environment and work – illness, in this context, Workplace Gymnastics (LG) has been an alternative in the reduction and/or prevention of illness and the pilates method emerges as an effective tool with possibilities of practicing exercises with an approach and appreciation of integration of mind and body, improving well-being and quality of life.

According to the World Health Organization (WHO), the Quality of Life Index (QOL) describes how the human being demonstrates himself in relation to the objectives and cultural standards and values, in addition to the issue of health with good conditions and the ability to live comfortably and not have diseases, maintain vitality by integrating body and mind and live with social well-being, physical and emotional. Practicing physical activities has shown positive results in improving well-being, causing biomechanical and physiological changes that are directly linked to physical and mental health (BERTOLDI, 2016; COUTO, 2017; CORRÊA, 2017).

Currently, the search for physical activities that can reduce disease factors has been arousing the interest of more and more workers, Pilates is a method of physical, mental and emotional conditioning that has been an important ally in the reduction of musculoskeletal pain and has been gaining followers all over the world.

In 2018, the studies by Neves et al, contextualized in a panoramic review of labor gl in Brazil from 2006 to 2016, lead us to a universe of research on the importance of labor gymnastics. In 2019, Ferreira et al, bring us a study showing the importance of workplace gymnastics associated with the Pilates method, pointing out the effectiveness of a physical therapy protocol aligning the principles of GL with the Pilates Method. In 2020, Cordeiro et al, in their integrative review, show us the influence of the pilates method on the improvement in QOL.

Considering the study carried out with the members of the multidisciplinary teams of the conventional neonatal intermediate care unit and kangaroo care in the neonatology sector of a public teaching hospital in the State of Pará, with favorable results, the construction of a program of care for the server with physical activities related to oriented practices, subsidized the elaboration of an educational tool through a protocol of occupational gymnastics with exercises oriented with based on the Pilates method.

## OBJECTIVES

- Reduce sedentary lifestyle;
- Improve body awareness;



- Prevent injuries and diseases due to cumulative trauma, such as RSI (Repetitive Strain Injuries) and WMSD (Work-Related Musculoskeletal Disorders);
- Reduce visual, bodily and mental fatigue through exercise breaks;
- Relieve stress;
- They increase the willingness to work;
- Improve professional performance;
- Increase social integration.

## METHODOLOGY

The exercise program that is part of workplace gymnastics does not need to be restricted to the traditional model, and can associate numerous techniques, including Pilates, also called Labor Pilates. The proposed exercises are based on the Pilates method, which was designed to promote body awareness, myofascial release, stretching, strengthening and widening the range of joint movements, ending with a series of relaxations to improve the body's mobility. Floor exercises are performed through the use of the body's own strength connecting the two centers of movement: the abdomen (Power House) and the spine.

For the development of pilates exercises, we will take into account a physiological and biomechanical approach to the movements to be performed, as well as breathing, so it is extremely important to observe the factors listed below:

- Neuromuscular control, where a deficient Power House may result in injury and fatigue of abdominal muscles, and which may result in changes in body posture;
- Joint care, avoiding excessive forces that may generate vectorial results of joint compressive forces;
- Focus on segmental stabilization, enabling dynamic stabilization of the spine, reprogramming muscle motor control;
- The movements are performed in a global way, obeying the principles of the method and the association of breathing.

## BASIC PRINCIPLES: CONTROL, FLUID MOVEMENT, PRECISION, CONCENTRATION, CENTER OF MOVEMENT, AND BREATHING

- Control: refers to the mastery over the movements performed, the more one practices the greater the performance and control,
- Fluid movement – refers to the continuity of movements, Joseph considered the beginning, middle, and end of movement integrating mind and body.

- Precision is what differentiates pilates from other types of exercises by referring to the exact way in which a movement is performed, observing the muscle groups that are in action and taking into account all the learning of the movement to be performed.
- Concentration – it is the focus on the goal to be achieved, it is what you want to learn to improve performance during activities with pilates,
- Center – also described as POWER HOUSE or CORE, is located between the rib cage and the pelvis, composed of the muscles: transverse abdominis, internal and external obliques, multifidus, diaphragm, glutes and pelvic floor muscles.
- Breathing – the movements must be connected with the breath to favor adequate oxygenation and working as fuel for the center of the movements. Breathing, according to Joseph, is the common thread that runs through all the principles of the method.

Figure 1: Basic principles of the pilates method



Source : Google (2022)

- During the first contact with the Pilates method, it is necessary for the instructor to approach the principles and objectives of the method, promote the teaching of respiratory control and the activation of the Power House.
- The movements will be described and applied according to the needs of the audience.
- The exercises are performed in different positions (bench press, prone, lateral decubitus, quadruped, sitting, kneeling or standing), for this protocol some adaptations are necessary.
- Guidance on the importance of synchronizing movements with breathing and axial growth;

- The accessories used in the practice of Pilates at Work allow you to simulate functional movements.
- The number of repetitions for each movement will not exceed 10 repetitions with a maximum time of 10 to 15 minutes to finish the proposed series of exercises.
- Possibility of participation of a maximum of 04 students in the pilates work group.
- Application in the work environment two to three times a week in the work shifts of each team with guidance for the safe development of the technique in their homes.
- The construction of the exercises presented in this protocol was organized based on the most discussed movements and from these images and illustrations were made for better visualization and learning.

Figure 2: Respiratory guidance and activation of the Power house.



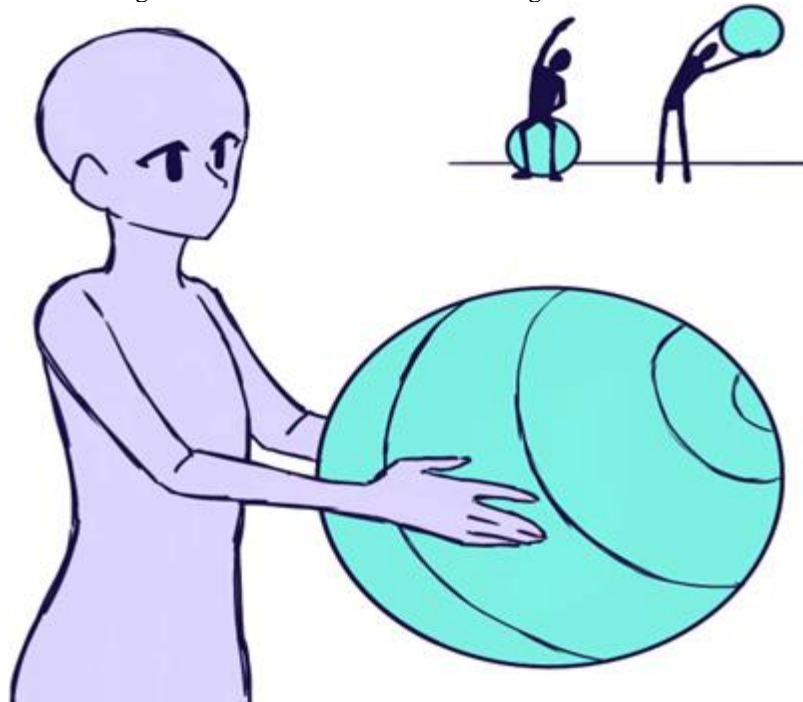
Source: Images produced by the author (2022)

## ACCESSORIES

To perform the exercises we can use some accessories in order to make them more pleasant, reduce the degree of difficulty with adaptations to facilitate the execution of the movements, making them more varied. To assist in the application of pilates at work, we have selected some possibilities of accessories.

- Swiss ball: its use began around the 70's as a stability instrument for rehabilitation exercises for postural and neurological problems. It is widely used in the fitness field and by the pilates method.

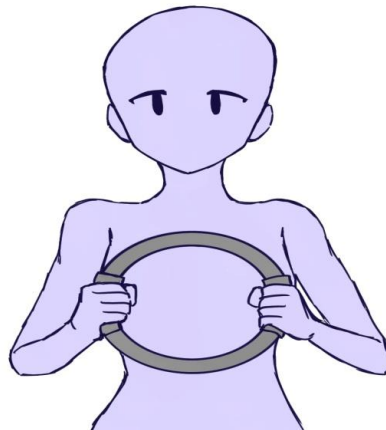
Figure 3: Illustrations of exercises using the Swiss ball.



Source: Illustrations and Art; Maria Eduarda A. M. Batista (2022).

- Magic Circle: used to promote activation of different muscle groups with proprioceptive feedback aiding the search for body awareness. For use in labor pilates we will need to make some adaptations.

Figure 4: Magic Circle Exercise Illustrations



Source: Illustrations and Art; Maria Eduarda A. M. Batista (2022).

- ✓ To carry out the work exercises, we use the principles of the use of the Magic circle with adaptations.



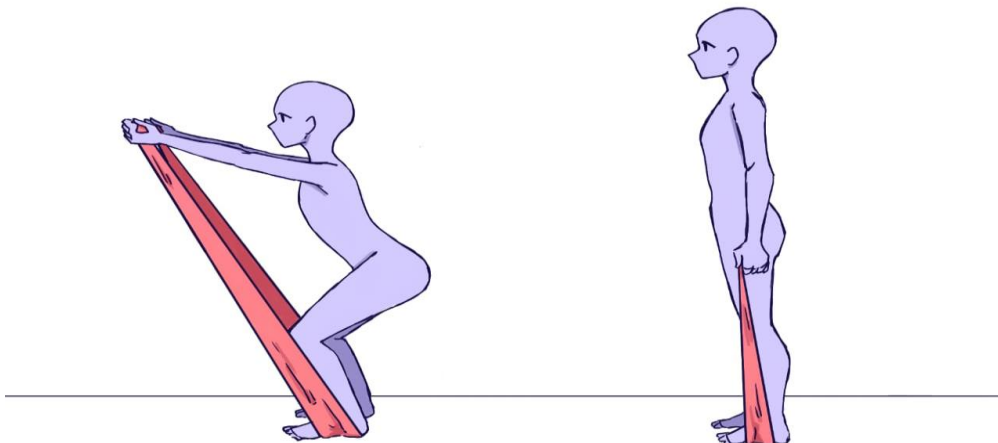
Figure 5: Demonstration of exercises with Magic circle principles.



Source: Images produced by the author.

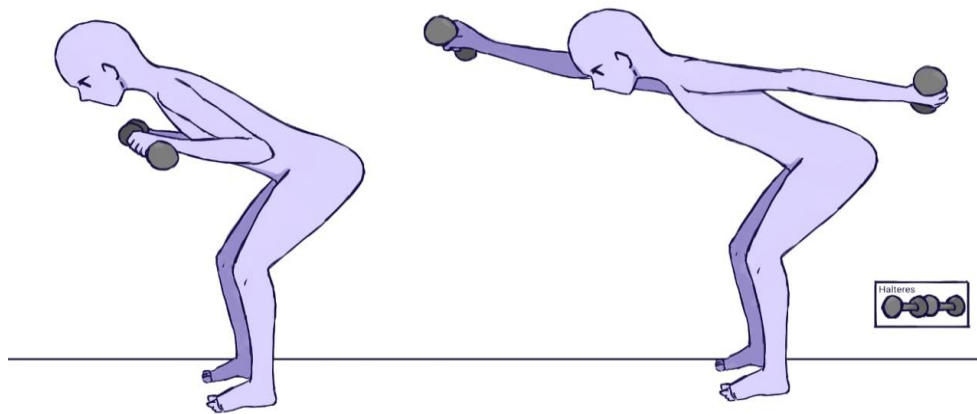
- Therabands or resistance bands: made in a variety of colors they were initially used only in rehabilitation, currently it has gained space in the fitness world. It aims to promote stretching and gain muscle strength, and can help in labor pilates exercises.

Figure 6: Illustrations of exercises using Theraband



Source: Illustrations and Art; Maria Eduarda A. M. Batista (2022).

Figure 7: Illustrations with dumbbell exercises.



Source: Illustrations and Art; Maria Eduarda A. M. Batista (2022).

## MODALITY OF EXERCISES WITH PILATES

- Pilates exercises can be performed using machines or without the use of them. We will demonstrate a sequence with exercises with and without the use of accessories and with necessary adaptations. It is worth noting that the nomenclature of pilates movements are mostly in English.
- Series of stretches and mobilizations.
- **SPINE STRETCH FORWARD**

Figure 8: Forward stretching and mobilization of the spine and abdominal strengthening.



Source: Illustrations and Art; Maria Eduarda A.M. Batista (2022).

Adaptation with the student seated in a chair.

Description: Student sitting on the sit bones, align the spine and shoulders at 90°, continue with the inclination of the spine on the trunk and return to the initial position, favoring the stretching of the posterior muscle chain and mobilization of the spine.



Figure 9: stretching and mobilization of the spine with adaptations.



Source: Images produced by the author (2022)

- SITE ARM SIT- stretching of the vertebral lateral muscle chain

Adaptation: student sitting in a chair.

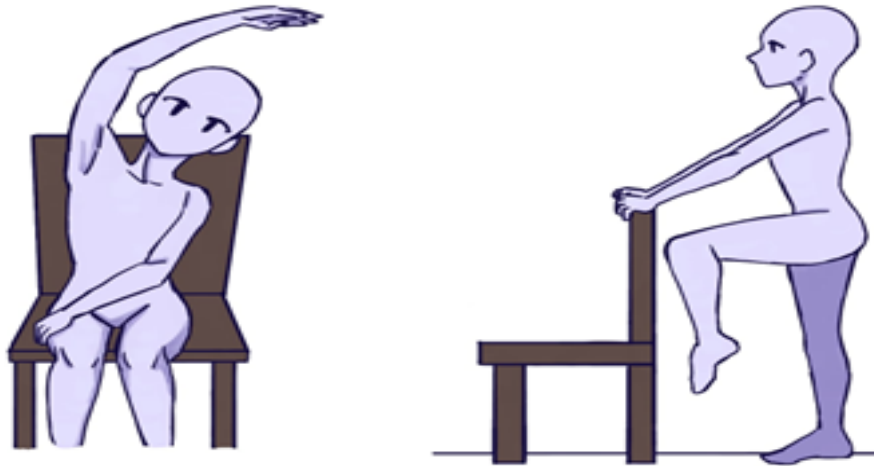
Description: Student sitting on sit bones. Spine aligned, upper limbs abducted at 90°, perform the rotation movement with lateral inclination of the trunk to the same side. It can be adapted with the use of therabands, Magic circle or with the Swiss ball.

Figure 10: Stretching of the vertebral lateral muscle chain.



Source: Images produced by the author (2022).  
Note: repeat the movement to the opposite side.

Figure 11: illustrations with exercises for the lower limbs and lateral stretching of the spine muscles.



Source: illustrations and art by Maria Eduarda de A.M Batista (2022).

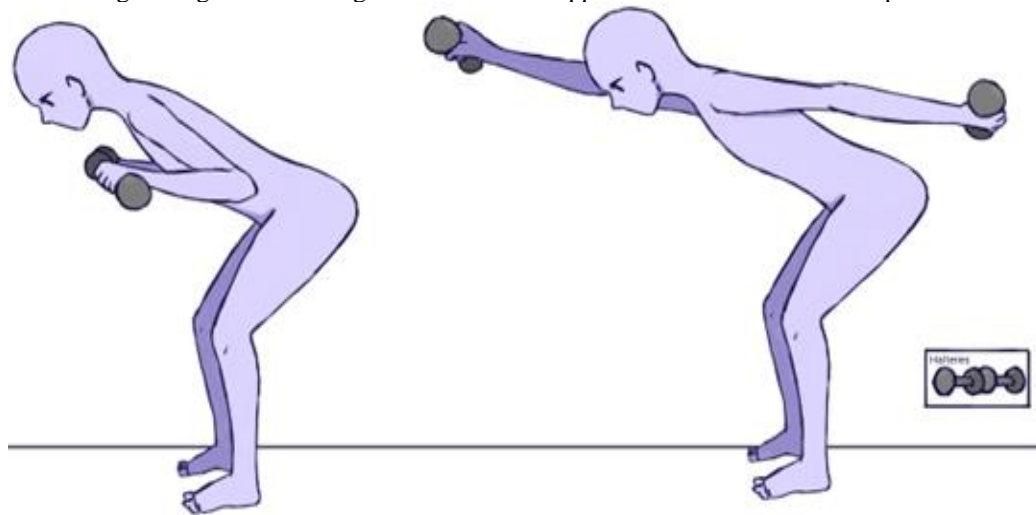
Figure 12: Strengthen lower limbs.



Source: Images produced by the author (2022).

Movement performed with the student standing, holding the upper back of a chair (calf strengthening adaptation performed in the Chair), available in the scope of work, keeping the abdominal muscles in contraction and associating breathing with the movements, performing body elevation on the supporting leg with the foot in plantar flexion.

Figure 13: Strengthening and stretching exercises for the upper and lateral limbs of the spine with dumbbells.



Source: illustrations and art by Maria Eduarda de A.M. Batista (2022).

Figure 14: Moment of integration and relaxation.



Source: images produced by the author (2022).

Note: perform the movements alternating the arms and lateralizing the body to one side and to the other side, all at the same time.

After a series of exercises, it is very important that we end with a moment of relaxation.



Note: The images used in the construction of this protocol were made within the scope of the work with the target audience involved in the research. To this end, we seek to obey the safety protocols against Covid-19, specifically with the use of masks and hand hygiene with 70% alcohol.

## **MONITORING**

It will take place through the use of the satisfaction survey with the target audience to be carried out every three months, for this we will use the forms available from Google Forms and the results obtained will enable the extension of the survey.

## **RESPONSIBLE**

Physiotherapist - to follow the evolution of the protocol in action.

Quality advice to enable the validation and institutionalization of the protocol.

## **VALIDATION FLOW**

The protocol will go through the FSCMP validation flow (Appendix 1).

## **CONCLUSION**

A workplace pilates protocol can consist of a variety of pilates exercises, which can be adapted, we use some possibilities here. With the protocol in action, creativity will be part of our context, in the expectation of obtaining a high rate of adherence that can favor the applicability and extension of this protocol.



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