

THE IMPORTANCE OF LABOR GYMNASTICS IN WORKERS' QUALITY OF LIFE: PERCEPTIONS AND ANALYSIS IN A COMPANY IN THE CITY OF MANAUS

Maria das Dores Lima de Aguiar¹, Kemel Jose Fonseca Barbosa²

¹*University of Amazonas (UFAM), Department of Production Engineering, street General Rodrigo Otávio Jordão Ramos, No. 6200, Manaus, Brazil*

²*University of Amazonas (UFAM), Faculdade de Educação Física e Fisioterapia, street General Rodrigo Otávio Jordão Ramos, No. 6200, Manaus, Brazil*

¹mdoris.aguiar@gmail.com

²kemel@ufam.edu.br

Abstract-This study aims to investigate the quality of life at work related to the continuous practice of gymnastics and to analyze the point of view on the part of the employees of a company. For this purpose a questionnaire was used to mediate the perceptions of the interviewees and to analyze the perceptions of two groups: group 1 with professionals working in the administrative part of the company and group 2 with professionals working in the operational area. The results show that there are different perceptions among the interviewees and that the adoption of labor gymnastics tends to benefit the health of the employees and consequently the productivity of the organization. It concludes that labor gymnastics benefited the employees of this company.

Keywords- gymnastics, health, exercise, occupational diseases.

INTRODUCTION

Competitiveness of organizations has provided a fairly accelerated pace in working practices, requiring employees to do activities increasingly intense and precise (DA SILVA et al, 2016). This form of work according to John & Kezic (2017) causes the use of increasingly repetitive and excessive movements, causing employees to feel pain in the workplace.

The first debates on occupational diseases in enterprises and the health hazards of workers began in Japan during the 19th century. The new era of the protection of workers according to Smith & Takahashi (2016) gained strength after the Second World War with the various measures created to protect the workers who placed Japan on the route of growth. Industrial accidents increased dramatically during the onset of the high-growth era and the shoulder-arm-neck syndrome increased among Japanese workers. Consequently, in 1964 the administration issued a notification in an effort to prevent shoulder-arm-neck syndrome. Labor gymnastics was pre-established. (TAKAHASHI & ISHII, 2016).

Currently work is becoming increasingly repetitive according to Kawamura (2017), due to the methods of production and management of work and the development of new machinery and equipment from the innovation of process, which at first favors the economic system of organizations to provide cost reduction and the increase in product quality. (JAUMANDREU & MAIRESSE, 2017).

In the long term the exaggerated repeatability generates occupational diseases that cause cascade injuries, affecting all directly involved. For example, organizations according to Jarolímek (2017) loses highly specialized labor and sees its image as a compromised corporation, the government according to, also loses with pension payments and, as a consequence, sees the effect of its policies frustrated by the Allocation of funds for payment of pensions and early retirements (SONG et al 2014). However, nothing compares to the damages suffered by workers and their families, which according to Mehrdad et al (2014) translates to the form of income reduction, job

cessation, spending on household accommodation in other locations for treatment, in addition to physical and psychological pain and wounded stigma.

A form of intervention in these problems is physical activity. Through such, Langlois (2013) highlights that workers can recover their strength and relax. Although essential, it finds an obstacle to practice, time. With the increase in the consumer market, there has been an increase in production and consequently workers face long work journeys, not leaving time to go to a gym, a club or even for a walk.

This research is based on the beneficial effects that continued labor gymnastics applied in a continuous manner has provided in a company that renders services in the healthcare sector called SESI (Social Service of Industry), located in Brazil, in the city of Manaus. SESI has the following mission: contribute to the strengthening, competitiveness and sustainable development of the Amazonian industry, promoting education and quality of life for workers and their dependents. SESI contributes to the development and regional integration, quality of life and welfare of workers, dependent and public in general of the Industrial Polo of Manaus (PIM), being a model company in promoting safe and healthy environments. In the year 2017, two model programs of labor gymnastics were developed with SESI workers and will subsequently be applied in PIM enterprises, which so far has not been measured the perception and positive results of that investment, reason why it is of interest to seek alternatives to the exposed problem.

Although some Brazilian companies already present data proving the effectiveness of labor gymnastics, there are still unknown results that respond to certain questions, such as: has the relationship with the co-workers increased after the implantation of labor gymnastics? Has their eating habits improved with the practice of labor gymnastics? Did labor gymnastics lessons improve functional performance? Does work performance have a link with gymnastics lessons? Does the practice of labor gymnastics contribute to improving the state of humor?

The purpose of this article is explore factors that influence in the appreciation of the work and for

this is conducted a study with a group of people from SESI where the results of labor gymnastics are presented. For this, was conducted a revision of the literature on labor gymnastics. Thus, this study examines the relationship of SESI employees who practice labor gymnastics and the competitive advantages that they have brought to the organization. Finally, we concludes on the consequences of the use of labor gymnastics.

METHODOLOGY

In this work will be conducted a bibliographical survey based on targeted books for each situation. Scientific articles indexed in periodicals will contribute to broadening knowledge about the problem and will serve as guiding for the proposed solutions. The methodological procedure consists of the case study followed by the following steps as shown in Picture 01:

Picture 1 –

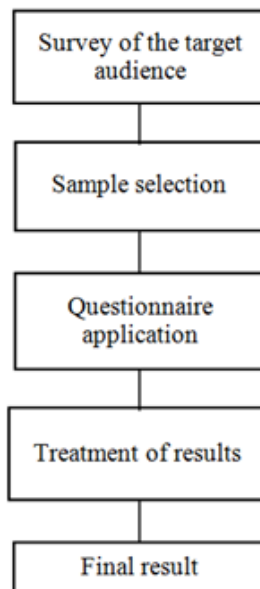


Figure 1: Stages of the methodological procedure and research development

Sources: data produced by the author (2017)

Survey of the target audience – the data withdrawn for this survey were held in August 2017 in

two SESI units located in the city of Manaus: the first unit is SESI Worker's Club that meets more than 2000 people per week offering sports modalities. The second unit is SESI Health; unit specialized in health promotion through the provision of medical consultation in 11 modes, besides laboratory and image exams. The survey was carried out of all the collaborators who have participated or are participating in the labor gymnastics lessons. This data served as a starting point for selecting a sample because the population of people who participated in classes and then left is still uncertain.

Sample Selection – Two groups of professionals were selected in the month of September 2017. Group 1 consists of professionals working in the administrative sector of the three units. This group consists of people who work daily with customer service, providing various services requiring repetitive activities with high attention and concern. Group 2 is composed of professionals working in the operational sector. This sector is divided into several areas exclusively of supporting, working with physical efforts.

Questionnaire applications – were applied during the months of September and October 2017, obtaining 85 responses to the treatment of results. The method chosen for the survey of data was the cross-sectional study that aims to collect information in a given period of time. The questions contained are of the enclosed type, where group 1 and 2 collaborators mark the ones that fit their preferences. The questions were developed to capture the current perception in the two different groups searched. The questions were directed to three contexts: 1) Organizational context – questions that measure the perceptions of employees in relation to the environment where labor gymnastics lessons happen, the physical space, the support of managers and the duration of the lessons; 2) Professional Context – questions that measure perception in relation to improving or not quality of life in personal and professional life after entering and continuous practice of labor gymnastics; 3) Identification Context – questions that allow the identification of the sample, enabling a better preview of the participants of the class.

Treatment of results – the Biostatt version 5.3 program was used to perform the descriptive statistics

on the results presented in the research. In the descriptive statistic was analyzed the percentage of responses in each surveyed group.

RESULTS AND DISCUSSIONS

Eighty-five questionnaires were applied to SESI collaborators belonging to the two groups in order to diagnose perceptions as to the quality of life after the practice of labor gymnastics.

ORGANIZATIONAL CONTEXT

Picture 02 shows the results in relation to the scale regime adopted so that employees can participate in labor gymnastics classes within their normal working hours.

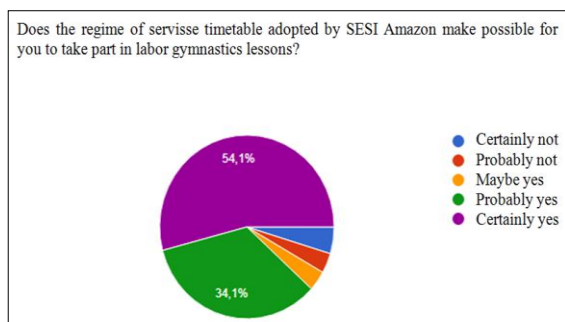


Figure 2: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

The figures in Picture 02 reveal that the vast majority of employees assessed in this survey participating in labor gymnastics understands that SESI distributes the time between work and practice of labor gymnastics correctly. According to Paula et al (2016) every year the managers of organizations are raising awareness and offering employees opportunities to integrate new methods that help boost the service.

Another research data is in relation to the environment/space provided by the institution for the correct practice of labor gymnastics.

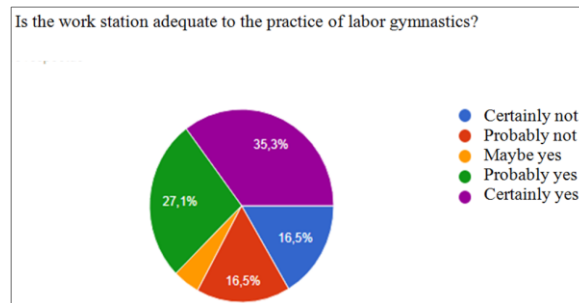


Figure 3: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

Picture 03 allows assessing that, although a larger number of collaborators agree the work is adequate, it is still evident that the workstation needs interventions that will bring further improvements to a peaceful practice and healthy labor gymnastics. For Money et al (2017), the healthy practice of any kind of gymnastics, whether in the workplace or not, is directly connected to the interaction space where gymnastics is being taught. Liberality of employees to take part in the sessions was portrayed in the research through Picture 04.

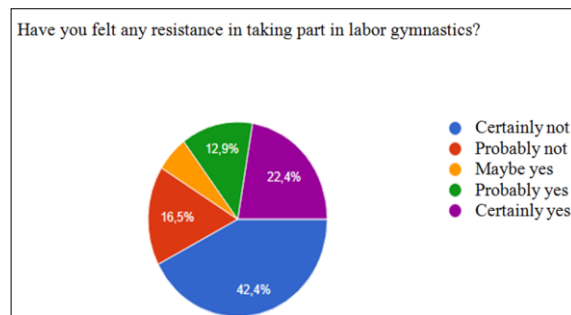


Figure 4: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

It is be noted that less than half (42.4%) of respondents claimed that they had no difficulty in being released to take part in labor gymnastic sessions. About 22.4%, practically 1/4 of the respondents, mentioned that at some point they felt resistance by parts of the superiors to take part in the lessons. For Mark and Grosch (2016), the relationship between employers and employees in the era of globalization is still turbulent, much in virtue of the singularities present day to day.

Labor gymnastics lessons happen every week, once, for 1 hour. As shown in Picture 05, research on the level of satisfaction and the importance of this time with collaborators was needed.

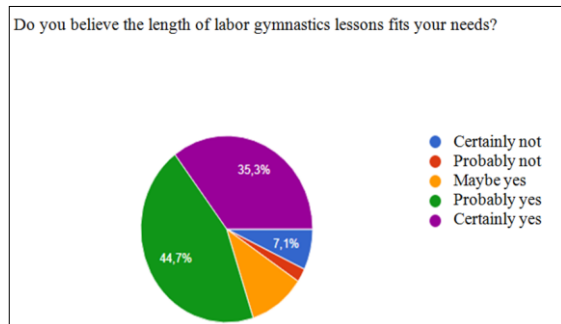


Figure 5: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

An expressive number of employees attests positive for the duration of classes by approving the average time of the activities supply their needs. This response from employees is accordingly to Carvalho (2014), which states in his research that the practice of any activity is not measured by time but by intensity. The benefits are felt not by the time spent but rather by the quality of the exercises practiced.

PROFESSIONAL CONTEXT

In relation to the professional context, Picture 06 presents the data obtained after the labor gymnastics lessons, where the employee has already mature enough to perceive and analyze the improvements or not in his body.

Picture 6 – Stages of the methodological procedure and research development

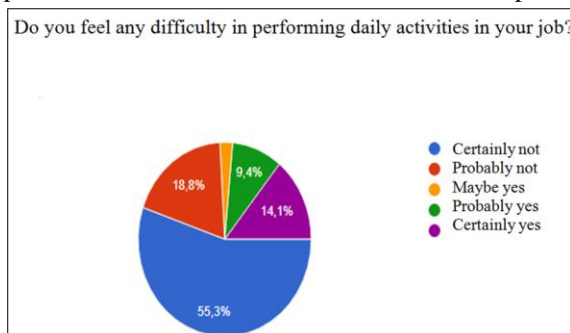


Figure 6: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

According to picture 06, about 55.3% of SESI's interviewed employees do not feel difficulties in performing their daily work activities. Buckley (2015) highlights that the practice of physical and labor activities reduces stress and consequently the employee feels less difficulties to carry on work activities.

The practice of labor gymnastics has already begun to take effect, favoring these workers positively. It is noted that this percentage covers the administrative and operational personnel groups. It is possible to verify that fewer than 15% remain with some difficulty in carrying on the work, which Krug et al (2015) explains stating that many people have different metabolism and begin to develop improvements later than others do.

Picture 07 presents the results that have verified whether the continuous practice of labor gymnastics has altered to better the emotional state of humor.

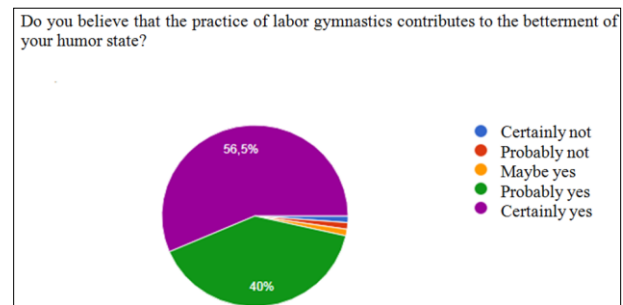


Figure 7: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

The measured perception demonstrates that about 96.5% of respondents perceive their humor had significant improvements within the organizational environment. Humor improvement is in line with Tudor-Locke et al (2014), where he states that the main benefits of gymnastics practice is the change in the state of humor. Still in relation to this, Carvalho (2016) emphasizes that the body releases several hormones causing the sensation of joy and well-being, making the employee come back happier to work.

In addition to humor, as shown in Picture 08, another point measured in the research was the power

of concentration acquired and developed by the employees.

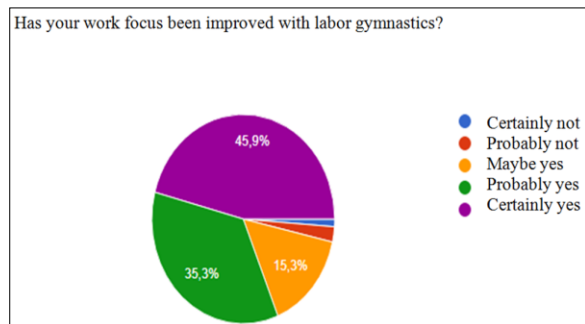


Figure 8: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

Once again, the percentage affirms that continuous practice favors ones level of fitness and concentration to carry on work activities. For Phillips et al (2014), physical and labor activities increase the power of the brain, promoting the rationale and concentration of individuals. For this reason, SESI employees feel such improvement in the concentration level after activities.

Health preservation for employees is directly linked to the labor gymnastics classes. As shown in Picture 09, the vast majority of 57.6% and 36.5% affirm that the exercises performed correctly during the lessons contribute to a balance and preservation in health. This prevalence of research is linked to the research conducted by Smith and Popkin (2014) describing that health maintenance is activated from the moment when people begin to leave the sedentary lifestyle, defining for themselves the labor activities as one of the means to exercise.

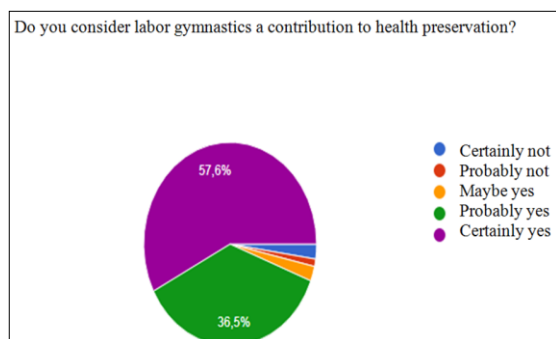


Figure 9: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

Professional relationship, as shown in Picture 10, was also assessed as one of the benefits of labor gymnastics.

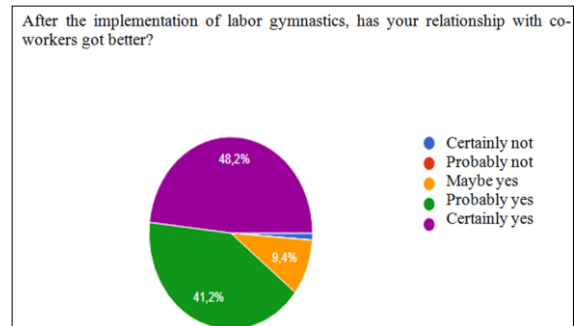


Figure 10: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

According to the data presented, 89.4% of employees respond positively, that is to say labor gymnastics has influenced the professional relationship among co-workers.

Picture 11 introduces another important point that has been researched, the flexibility of the main parts of the body, especially those required during the working day in the administrative sector as in the operational sector.

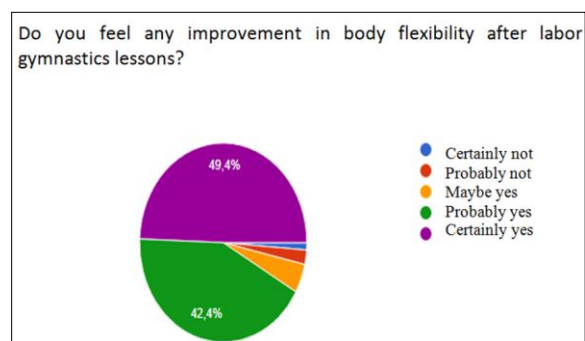


Figure 11: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

According to Picture 11, employees have stated that they already feel the improvement of lessons in various parts of the body. About 91.8% highlight that their bodies show greater and better

flexibility after labor gymnastics lessons. According to Rasotto et al (2014), physical and labor activities allow the elongation of several limbs, improving flexibility, and the mobility of these members is extremely useful for the complete functioning of the entire body. One of the main points regarding labor gymnastics being used by SESI is presented in Picture 12 where a direct question is asked to the participating employees.

According to Picture 12, the vast majority of respondents 91.8% responded positively, that is to say the increase in professional performance is attributed to continuous practice of labor gymnastics. With regard to this, Chopp-Hurley et al (2017) highlight that labor activities are focal elements for the productivity of organizations.

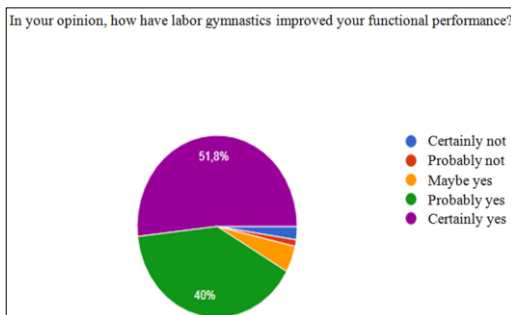


Figure 12: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

It is not advantageous to have an unproductive, tired and stressed employee, especially if he or she has to have direct contact with the customer. For Van Vilsteren et al (2017), labor and physical exercise favor all the physical and mental functioning of our body.

IDENTIFICATION CONTEXT

The first identification data according to Picture 13 is the distinction of SESI employees in the categories concerning administrative functions with 42.4% and operational with 56.5%.

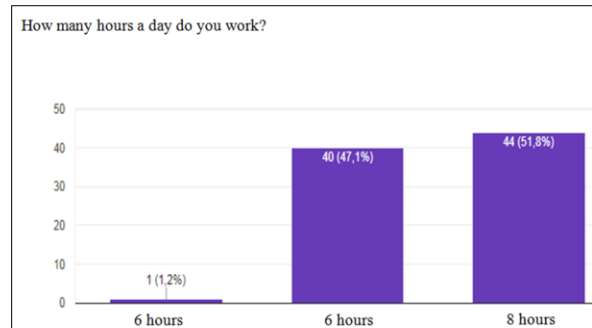


Figure 13: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

Picture 14 addresses the number of hours worked by SESI employees. There is a differentiation between the working days according to the group. The administrative group works 6 hours daily and the operational group works 8 hours.

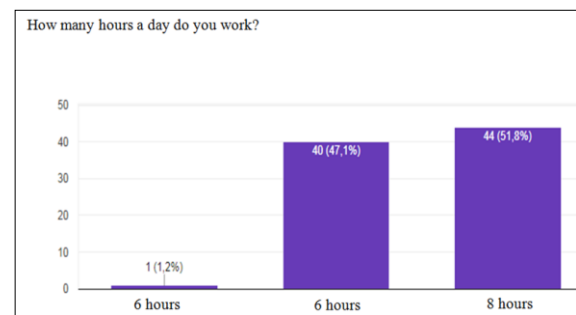


Figure 14: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

The participation time is presented in Picture 15, where the vast majority (about 60%) of respondents have been practicing labor gymnastics lessons for over a year. The number of participants practicing for over six months is also considered high, with 29.4%. According to Stevenson et al (2017) the bodily and mental benefits are united to continuous practice. Therefore, employees who have been practicing physical and labor activities continuously, for several years, feel faster the improvements brought by the physical activities.

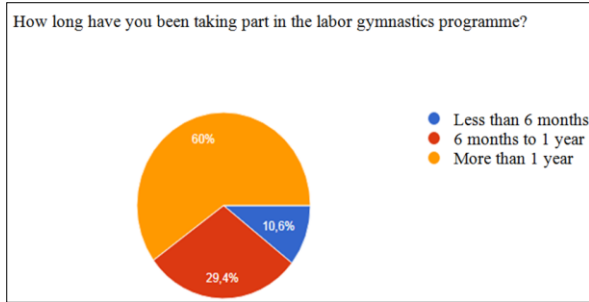


Figure 15: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

The age group of the respondents is given in Picture 16, where it is possible to visualize that the participating audience is variable age. All categories have been listed, with employees from 20 to more than 50 years. Most 23.5% is in the range of 30 to 34 years of age.

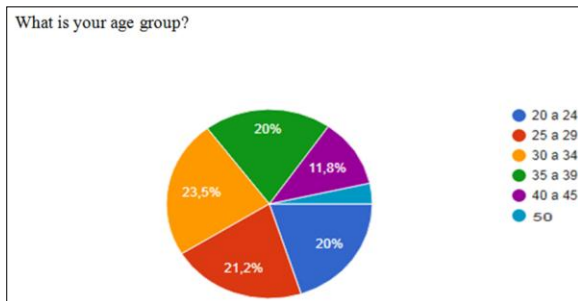


Figure 16: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

Picture 17 presents the distinction of employees participating in the lessons. It is seen that there is a balance between employees, but the male audience with 55.3% is still a majority.

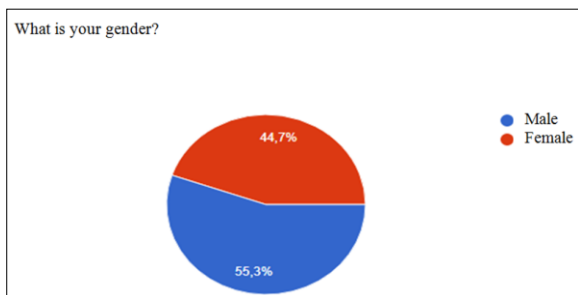


Figure 16: Stages of the methodological procedure and research development

Sources: Data produced by the author (2017)

According to Emerson et al (2017) there is no ideal age range or a variation on the genre to begin physical activities in the workplace. There is no age limit for that either. All employees of any age and any gender can and must practice activities continuously to benefit from such programs.

CONCLUSION

In this research, after the study of responses brought by the questionnaire, it is evident that labor gymnastics favors working conditions, both in the administrative and operational sector, unleashing an increase in productivity. We can also conclude:

1. Labor gymnastics proved to be beneficial to all employees in the administrative and operational sector, especially those linked to tasks requiring repetition of movements.

2. Investment in the practice of labor gymnastics brought results to the company. The use of labor gymnastics as a health maintenance tool points to improving the workplace.

3. Labor gymnastics improved the state of humor, concentration and empathy of SESI employees during working hours.

4. The improvement acquired by labor gymnastics begins to be noticeable after six months of practice, being indispensable to have an appropriate, suitable, clean and organized environment for the practice of labor gymnastics lessons.

6. Regardless of the amount of hours worked by SESI employees, labor gymnastics still provide stable and excellent yields for each employee.

With the result of the implantation of labor gymnastics by SESI, it is seen that employees are satisfied, and consequently have better results for efficient work, thereby ensuring in an excellent tool that can be deployed in other companies.

REFERENCES:

- [1] ANSARY, M. A., & BARUA, U. Workplace safety compliance of RMG industry in Bangladesh: Structural assessment of RMG factory buildings. **International Journal of Disaster Risk Reduction**, 14, 424-437, 2015.
- [2] BUCKLEY, J. P., HEDGE, A., YATES, T., COPELAND, R. J., LOOSEMORE, M., HAMER, M., & DUNSTAN, D. W. The sedentary office: a growing case for change towards better health and productivity. **Expert statement commissioned by Public Health England and the Active Working Community Interest Company**. *Br J Sports Med*, bjsports, 2015.
- [3] CARVALHO, J. Pode o exercício físico ser um bom medicamento para o envelhecimento saudável? **Acta Farmacêutica Portuguesa**, v. 3, n. 2, p. 125-133, 2014.
- [4] CARVALHO, Maiara Lene. Qualidade de vida no trabalho versus Condições psicossomáticas advindas do mercado de trabalho. **REGRAD-Revista Eletrônica de Graduação do UNIVEM-ISSN 1984-7866**, v. 9, n. 1, p. 67-84, 2016.
- [5] CHOPP-HURLEY, J. N., BRENNEMAN, E. C., WIEBENGA, E. G., BULBROOK, B., KEIR, P. J., & MALY, M. R. Randomized Controlled Trial Investigating the Role of Exercise in the Workplace to Improve Work Ability, Performance, and Patient-Reported Symptoms Among Older Workers With Osteoarthritis. **Journal of Occupational and Environmental Medicine**, 59(6), 550-556, 2017.
- [6] Da Silva, Davi N, Vieira, Raimundo K, Vieira, Adalena K, & de Santiago, Miriam. (2016). Optimización del Proceso de Innovación para Proyectos Internos en las Empresas. **Información tecnológica**, 27(3), 119-130.
- [7] DE PAULA, Alessandra; HAIDUKE, Ivonete Ferreira; MARQUES, Inês Astreia Almeida. Ergonomia e Gestão: complementaridade para a redução dos afastamentos e do stress, visando melhoria da qualidade de vida do trabalhador. **Revista Conbrad [ISSN 2525-6815] Qualis B5**, v. 1, n. 1, p. 121-136, 2016.
- [8] EMERSON, N. D., MERRILL, D. A., SHEDD, K., BILDER, R. M., & SIDDARTH, P. Effects of an employee exercise programme on mental health. **Occupational Medicine**, 67(2), 128-134, 2017
- [9] JAISWAL, A. A case control study among carpet thread factory workers in Uttar Pradesh, India: occupational injury and its deteriorating factors. **Global Journal of Human-Social Science Research**, 12(10-D), 2012.
- [10] JAUMANDREU, J., & MAIRESSE, J. Disentangling the effects of process and product innovation on cost and demand. **Economics of Innovation and New Technology**, 26(1-2), 150-167, 2017.
- [11] JAROLÍMEK, J., URBAN, P., PAVLÍNEK, P., & DZUROVA, D. Occupational diseases in the automotive industry in Czechia—Geographic and medical context. **International Journal of Occupational Medicine and Environmental Health**, 30(3), 455-468, 2017.
- [12] JOHN, S. M., & KEZIC, S. Occupational skin diseases—Development and Implementation of European Standards on Prevention of Occupational Skin Diseases. **Journal of the European Academy of Dermatology and Venereology**, 31(S4), 3-4, 2017.
- [13] KAWAMURA, Y. Alternative development from fordism to nichism for asian agriculture in globalizing era. **Journal of Asian Rural Studies**, 1(1), 1-12, 2017.
- [14] KRUG, Rodrigo de Rosso; MAZO, Giovana Zarpellon; LOPES, Marize Amorim. Barreiras e facilitadores para a prática da atividade física de longevas inativas fisicamente. **Rev. bras. med. esporte**, v. 21, n. 1, p. 57-64, 2015.
- [15] LANGLOIS, F., Vu, T. T. M., CHASSÉ, K., DUPUIS, G., KERGOAT, M. J., & BHERER, L.. Benefits of physical exercise training on cognition and quality of life in frail older adults. **The Journals of Gerontology: Series B**, 68(3), 400-404, 2013.
- [16] MEHRDAD, R., SEIFMANESH, S., CHAVOSHI, F., AMINIAN, O., & IZADI, N. Epidemiology of occupational accidents in Iran based on social security organization database. **Iranian Red Crescent Medical Journal**, 16(1), 2014.
- [17] MENEGHELLI, Leocádio; GROSCH, Maria Selma. O ambiente das organizações na era da globalização. v. 30, 2016.
- [18] MONEY, J., KIRBY, G., PARRY, G., HESFORD, R., & MOONEY, C. Gymnastics: collaborative CPD-what has the impact been on pupils' learning. **Innovations in Practice**, 1(2), 29-40, 2017.
- [19] SONG, J., KIM, I., & CHOI, B. S. The scope and specific criteria of compensation for occupational diseases in Korea. **Journal of Korean medical science**, 29(Suppl), S32-S39, 2014.
- [20] TAKAHASHI, K., & ISHII, Y. Historical developments of administrative measures for occupational diseases in Japan. **International Labour Organization (ILO)**. [Online], 2016.
- [21] TUDOR-LOCKE, C., SCHUNA Jr, J. M., FRENHAM, L. J., & PROENCA, M. Changing the way we work: elevating energy expenditure with workstation alternatives. **International journal of obesity**, 38(6), 755, 2014.
- [22] PHILLIPS, C., BAKTIR, M. A., SRIVATSAN, M., & SALEHI, A. Neuroprotective effects of physical activity on

the brain: a closer look at trophic factor signaling. **Frontiers in cellular neuroscience**, **8**, 2014.

[23] RASOTTO, C., BERGAMIN, M., SIMONETTI, A., MASO, S., BARTOLUCCI, G. B., ERMOLAO, A., & ZACCARIA, M. Tailored exercise program reduces symptoms of upper limb work-related musculoskeletal disorders in a group of metalworkers: A randomized controlled trial. **Manual therapy**, *20*(1), 56-62, 2015.

[24] SMITH, D. R., & TAKAHASHI, K. The Journal of Occupational Health from 1959 to 2016. **Journal of occupational health**, *58*(2), 135-137, 2016.

[25] SMITH, L. P., NG, S. W., & POPKIN, B. M. No time for the gym? Housework and other non-labor market time use patterns are associated with meeting physical activity recommendations among adults in full-time, sedentary jobs. **Social Science & Medicine**, **120**, 126-134, 2014.

[26] STEVENSON, M. D., SMIGIELSKI, E. M., NAIFEH, M. M., ABRAMSON, E. L., TODD, C., & LI, S. T. T. Increasing scholarly activity productivity during residency: a systematic review. **Academic Medicine**, *92*(2), 250-266, 2017.

[27] VAN VILSTEREN, M., BOOT, C. R. L., TWISK, J. W. R., STEENBEEK, R., VOSKUYL, A. E., VAN SCHAARDENBURG, D., & ANEMA, J. R. One year effects of a workplace integrated care intervention for workers with rheumatoid arthritis: results of a randomized controlled trial. **Journal of occupational rehabilitation**, *27*(1), 128-136, 2017.