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ARTIGO ORIGINAL

Efeitos da ginástica laboral em funcionários de teleatendimento

Effects of work gymnastics on teleassistance employees

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RESUMO

Introdução: A ginástica laboral (GL), definida como a prática orientada de exercícios físicos dentro do próprio local de trabalho, com duração de 15 a 20 minutos, visa a prevenção de dores corporais e vícios posturais, aumenta a disposição para o trabalho e promove uma maior integração no ambiente de trabalho. Sendo assim, o objetivo desse estudo foi avaliar os efeitos da GL sobre as queixas dos trabalhadores quando a mesma é aplicada por fisioterapeutas ou por monitores (funcionários). Método: Para este estudo foram utilizados três instrumentos: Questionário de Topografia e Intensidade da dor; questionário de avaliação da GL junto aos trabalhadores e o de identificação formulado especificamente para este estudo. A amostra foi composta por 24 funcionários de um teleatendimento, divididos em dois grupos: turno manhã (n=10) e turno tarde (n=14). A prática orientada tinha duração de 15 minutos, 4 vezes semanais, em um período de 4 meses, perfazendo um total de 68 sessões de GL. Para análise estatística foi utilizado o Wilcoxon Signed Based Ranks e o Microsoft Excel. Resultado: Foi constatada uma melhora significante na percepção de dor do grupo de funcionários orientados pelo fisioterapeuta (p=0,034), além da melhora da disposição para o trabalho, da interação com os colegas e satisfação com a empresa, diminuição do estresse e do cansaço. Conclusão: O programa de GL pode ser visto como mais uma ferramenta para o beneficio da saúde e bem-estar dos trabalhadores atuando em um nível de prevenção primária.

PALAVRAS-CHAVE

saúde ocupacional, saúde do trabalhador, trabalho, riscos ocupacionais, ambiente de trabalho, ginástica

ABSTRACT

Introduction: Work gymnastics (WG) is defined as the guided practice of physical exercises at the workplace, aiming at preventing body pains and posture weaknesses, increasing disposition to work, and promoting a greater integration among employees. Thus, the purposes of this study were to evaluate the WG effects on teleassistance employees of a health care insurance service, contributing to the reduction of these employees' muscular pains and to investigate the difference of WG results when applied by either monitors or physical therapists. Methods: Three questionnaires were employed: Identification; Pain Topography and Intensity; and WG Evaluation, together with employees. Wilcoxon Signed Based Ranks was used for statistical analysis and Microsoft Excel, 2001 was used for the descriptive analysis. Guided practice lasted 15 minutes, 4 times a week for 4 months. The sample consisted of 24 teleassistance employees divided into two groups: morning shift, guided by a monitor (n=10) and afternoon shift, guided by a physical therapist (n=14). Results: Results have shown a significant improvement in pain perception only in the physical therapist-guided group (p=0.034); improvement regarding disposition to work, interaction with coworkers and satisfaction with the company, as well as stress and fatigue reduction were observed in both groups. Conclusion: We conclude that the WG program may be considered an easily implemented low-cost tool with apparently positive results on the health of employees, acting at the primary prevention level.

KEYWORDS

occupational health, work, occupational risks, working environment, gymnastics

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INTRODUCTION

The Industrial Revolution that took place in Europe gave rise to the industrialization process, which has been perpetuated to date. Since then, the increase of mechanized, automated, repetitive, competitive work has been observed, with long hours of work and inadequate working environments. The results of this process generated major consequences to the workers' health, leading to a series of illnesses, complaints and work absenteeism[1].

The increase of work globalization and the fast advancement of technologies result in the emergence of new professions, and among them, it is worth mentioning the teleassistance service, which is based on an organizational structure that comprehends workstations for assisting the client, through the use of a computer terminal and a telephone[2].

According to the Brazilian Classification of Professions:

"*Teleassistance employees or telemarketing operators are those individuals who assist users, offer products and services, give specialized technical assistance, conduct polls, perform debt collecting services and collect clients' information, always through the teleassistance service, according to planned and controlled guidelines and scripts, to acquire, retain or recover clients. The number of working hours of these employees varies greatly, divided in day and night-shifts, rotating shifts, and irregular, non-fixed working hours. The activities are developed under permanent supervision, in a closed, indoor environment. They work under pressure when the assistance demand (waiting list) for that service increases*"[3].

As described by Silva[4], several studies have been able to demonstrate and point out physical and psychological symptoms among these workers, with the psychoaffective and relationship-related aspects receiving a differentiated approach. The main negative effects of teleassistance work are: visual fatigue, sleep disturbances, general digestive symptoms, personality and relationship disorders, which also interfere with the employee's life outside the work environment.

The search for the necessity of more humanized changes in the working processes and the exercise of a multidisciplinary and intersectorial approach of the workers' health has given rise to the several programs of quality of life and disease prevention in the work environment of teleassistance employees[5].

Among these programs is the Work Gymnastics (WG) Program, which has been shown to be easily implemented, low-cost and to yield apparently positive results on the workers exercising this function.

As stated by Mendes & Leite[8], WG is a quality of life and leisure support program, even if carried out by workers during working hours and aims at improving the posture, promote the general well-being of workers, decrease occupational stress as well as seeking to decrease labor accidents, increase productivity, prevent occupational diseases and reduce absenteeism.

WG must be carried out daily at the workplace during a short period of time (15-20 minutes) and must contain specific exercises that respect the characteristics of the population and take into account the workers' complaints, thus favoring the interaction among different hierarchic levels inside the company[6]. According to Alves[7], the relationship and the communication among the different hierarchic levels and the different work organizations to which the workers belong, directly influence the protocol of WG to be adopted in each company. When used without criteria or previous knowledge of the population to which it will be applied, WG can aggravate or accelerate the onset of new cases of work-related illnesses.

Mendes & Leite[8] state that WG has two classifications: regarding the time of its performance and regarding its objective. Regarding the performance, WG is subdivided into Preparatory (at the start of the workday); Compensatory (in the middle of the workday) and Relaxing (at the end of the workday). Regarding the objective, it is subdivided in Preparatory or Postural (prepares the workers for strength, velocity or endurance activities); Compensation (prevents the onset of postural vices); Corrective (re-establishes the muscular and joint balance) and Conservation or Maintenance (maintains the physiomorphological balance).

Logen[9] reports that seeing WG as a mandatory activity was perceived by the workers as an extra duty and this impaired the desired objective. Therefore, the author suggests that the WG be presented as an optional activity and that the exercises be performed during the working hours, without compromising the existing resting breaks, thus promoting an improvement in the workers' symptoms without decreasing productivity. As reported by Martins & Duarte[6] and Pommeerenck & Esther[10], the workers' participation must be of their own free will, differently from their monotonous work routine.

Some companies use one of their own employees, previously trained, to supervise the exercise performance, as they believe that in doing so, the WG program costs will be decreased, while maintaining the quality of service similar to that of a professional. However, a study carried out by Soares & Assunçao[11] shows that the use of monitors, who are trained employees, instead of specialized professionals, contributes to the lack of success of the programs that choose such approach.

It is understood, therefore, that a WG program can have a positive impact in a teleassistance company, as the company will be investing on the improvement of their workers' health, by implementing resting breaks at non-pre-established times, promoting the cessation of possible postural vices and the stressful working pace, as well as visual and auditory rest and a casualness environment at work[8].

OBJECTIVES

The present study aims at assessing the influence of a WG program on the complaints of the employees of a teleassistance company and comparing the results of WG when applied by trained monitors (employee) and when applied by a specialized professional (physical therapist).

METHODS

Sample

The sample consisted initially of the 27 employees that worked the day shift of the company; however, 3 of these employees were excluded from the study because they participated only in the two final months. Of the 24 remaining employees, 10 worked the day shift and 14 the afternoon shift, with a workload of 6 hours a day. The night-shift employees were not included in this study, as their workload is different from that of the day and afternoon shifts (12 hours of work followed by 36 hours of rest).

Instruments of Assessment

The data were collected through three questionnaires: Identification, Pain Topography and Intensity[12] and WG Assessment by the employees[13]. The first questionnaire was devised by the researchers of this study and aimed at identifying the profile of the studied sample. It contained 25 closed questions with information related to the individuals' sociodemographic, occupational personal characteristics and their quality of life. The second questionnaire evaluated the presence of pain and its location through a schematic drawing of the human body in its anterior and posterior views. The employee was advised to identify the place of the symptom in the drawing and immediately below it, to give a score to the intensity of the pain he or she felt at that place through a visual analogical scale (VAS), with 0 being "complete absence of pain" and 10, "extreme pain"[12].

The WG assessment questionnaire by the employees aimed at raising data on WG and the results it yields for the company and for the employees, as seen by the latter[8]. It has 22 closed questions, divided into the following domains: characteristics of the employee and the company; characteristics of the WG; results and changes after the implementation of WG. In this questionnaire, the assessment of the results is given as frequency and means of the answers, with no final score.

For the guided physical exercise practice, additional items such as balls, balloons, hula hoops and cushion seats were used, aiming at creating an adequate environment for the WG program.

Procedures

After the approval of the WG program by the National Research Ethics Committee of the Pontifícia Universidade Católica de Minas Gerais, it was initiated with informative lectures on the gymnastics and its implementation in the teleassistance sector. The lectures lasted 20 minutes, being presented to the employees divided in 3 groups.

The employees who accepted to participate in the program and the company manager signed an informed consent form, where they were informed on the research and received the guarantee of confidentiality of the data and identification of each employee.

The intervention consisted in the guided physical exercise practice started on April 4, 2005, which ended on July 28, 2005, with a duration of 4 (four) months and a frequency of 4 (four) weekly sessions (on Mondays, Tuesdays, Wednesdays and Thursdays), totaling 68 sessions.

After receiving information on the instruments, the participants filled out the questionnaires, individually and in a private place, in order to guarantee privacy and the absence of distress, being applied by a single non-blinded researcher, who had been previously trained for it.

The Employee Identification and Pain Topography and Intensity questionnaires were filled out before the start of the WG program and after its end, whereas the WG Evaluation questionnaire was filled out only at the end of the program.

The devised exercises considered different parts of the body, prioritizing a different segment in each month: cervical region, upper limbs, trunk and lower limbs, respectively.

Each WG session lasted 15 minutes divided in 5 (five) minutes of body stretching, 5 (five) minutes of muscular strengthening exercises and 5 (five) minutes of relaxation; on the last day of each month, a ludic activity was included. The WG activities were performed in a quiet environment, close to the teleassistance sector.

In the morning shift, the exercises were supervised by an employee who had been previously trained by the physical therapist, who from now on will be called "monitor". The monitor was voluntarily chosen during the informative lectures, i.e., the group of researchers explained to the employees the necessity of a monitor for the morning shift and one of the employees offered to be the volunteer, being supported by all the colleagues.

In the afternoon shift, the exercises were supervised by the physical therapist and during the first two months, one physical therapist supervised the exercises while another observed the employees' compensations during the performance of the activities, in order to better devise the following series. From the third month on, only one physical therapist supervised the exercises in the afternoon shift.

The training given by the physical therapist to the monitor was carried out in the first week of WG program implementation and at the last week of each month, before the change of exercise series. The training was carried out inside the company, in a private space where the exercises and ludic activities were carried out. At this moment, the monitor learned the exercises, clarified the doubts and then applied the exercise series to the physical therapist, in order to ensure the correct performance of the exercises.

The roll was taken at the beginning of each session and at the end of each day, the activities and occurrences were recorded in a logbook by the monitor as well as by the physical therapist, with the logbook remaining in the company at all times. The logbook was also used to record the attendance and motivation of the monitor and the morning-shift employees, aiming at supporting the monitor whenever necessary.

Statistical Analysis

Due to the small sample size, the Wilcoxon Signed Ranks Test (non-parametric test) was chosen to evaluate pain perception ($\alpha = 0.05$). For the remaining variables, Microsoft Excel (Microsoft Corporate XP, version 2001) was used for calculation of percentages and arithmetic means.

RESULTS

Twenty-four employees who worked in the teleassistance sector of a healthcare insurance company in the city of Belo Horizonte, Minas Gerais, Brazil, participated in the study from April to July 2005. Of these, 10 worked the morning shift and 14 the afternoon shift, being 64% females and 36% males, with a mean age of 22 years. Regarding schooling, 75% of the employees had finished High School, 21% had some College education and 4% had finished College. None of them had another job.

When asked about how long they had been working in teleassistance, the employees reported periods that varied from 1 to 18 months in the job, with a mean time of the equivalent sample of 7.8 months. There was an association between the work shift and time of work (p=0.002), as 60% of the morning shift employees had been working for more than 12 months, whereas none of the afternoon shift employees had been more than 1 year in the job.

Table 1 shows separately some of the characteristics of the employees in the morning and afternoon shifts, regarding age, gender, schooling and mean time in the job.

The work organization structure (management, rules, mean teleassistance time, script, service assessment) in the morning and afternoon shifts were the same. The number of employees determined for each shift was calculated by the sector management based on the call demand, preventing overwork/underwork of some of the employees at peak times as well as low-demand times.

A total of 13 employees reported pain in the beginning and the location that was most depicted in the schematic drawing of the human body was the lumbar column region, with 6 employees from the morning shift and 7 in the afternoon shift. The pain questionnaire applied before the start of the WG showed that, in the morning shift, the employees reported scores that varied from absence of pain (0) to score 8 (eight), whereas the afternoon shift reported scores that varied from 0 to 10 (ten).

Table 2 shows the variables that represent the results expressed through the pain score before and after the WG program, considering a significant result of p<0.05. This statistical analysis was carried out by the Wilcoxon Signed Ranks Test and showed that the result was statistically significant only in the afternoon shift group (p=0.034). This shows that the pain improvement reported by the employees in the beginning of the WG program was only significant for the group where the WG was administered by the physical therapist.

Additionally, when asked about the perception of changes in their own bodies after the 4 months of WG, 24% of the morning shift and 22% of the afternoon shift employees reported a decrease in the fatigue; 17% of the morning shift and 22% of the afternoon shift employees reported a decrease in body pain; and 24% of the morning and afternoon shifts reported a decrease in stress. These were the most frequent answers among the 10 options that the employee had as available responses.

Before the WG, 50% of the morning shift employees were satisfied with their health and at the end of the program, this percentage increased to 60%. Regarding the afternoon shift employees, 29% were initially satisfied with their health, which increased to 57% at the end of the 4 months (Fig. 1). Regarding satisfaction with their work before WG, 40% of the morning shift and 43% of the afternoon shift employees reported being satisfied, which increased to 50% each at the end of this program.

The employees were also asked about changes that took place in the work environment, or in the company, after the implementation of the WG program, with the employee choosing 5 among the possible 14 available options. The results showed that 29% of the morning shift and 16% of the afternoon shift employees reported that the interaction among the colleagues improved; 12% of the morning shift and 16% of the afternoon shift employees reported that they felt more willing to work; and 26% of the morning shift and 11% of the afternoon shift employees reported that their satisfaction with the company also increased.

Despite the fact that the WG was carried out during working hours, 80% of the morning shift and 93% of the afternoon shift employees considered the WG as part of their leisure activities and almost 100% of them would recommend WG to a colleague.

Table 1
Characteristics of teleassistance employees in the morning and afternoon shifts.

	Morning		Afternoon	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Age (yrs)				
18 to 21	5	50%	5	36%
22 to 25	5	50%	7	50%
> 26	0	0%	2	14%
Schooling				
Finished High School	9	90%	9	64%
Some College	1	10%	4	29%
Finished College	0	0%	1	7%
Sex				
Female	6	60%	9	64%
Male	4	40%	5	36%
Time in the job (months)				
01 to 06	4	40%	9	64%
07 to 12	0	0%	5	36%
13 to 18	6	60%	0	0%
Total	10	100%	14	100%

Table 2
Statistical analysis of the perception of pain by teleassistance employees.

Description	n	mean	Minimum pain	Maximum pain	p
Morning – initial pain	10	2,9	0,0	8,0	
Afternoon –initial pain	14	3,1	0,0	10,0	
Morning –final pain	10	2,5	0,0	6,0	0,684
Afternoon –final pain	14	1,2	0,0	9,0	0,034

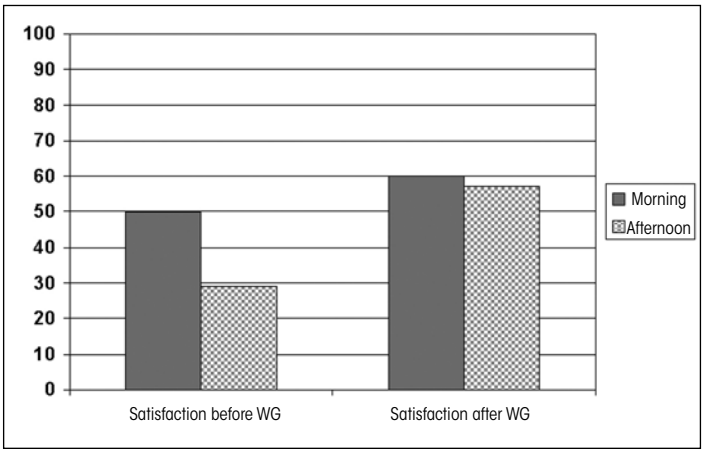

Figure 1
Percentage of teleassistance employees satisfied with their own health status before and after participating in the work gymnastics (WG) program.

In addition to the questions presented, it was also asked to the employees to evaluate the WG program and the person who supervised the exercises, by assigning a grade to both. The grading system attributed 0 to a "very bad" concept, 5 to "regular" and 10 to "excellent". Regarding the grade attributed to WG in the morning shift, the lowest grade was 5, whereas the highest was 10 and 20% of the employees attributed grade 10 to the program.

In the afternoon shift, the grades varied between 7 and 10 and 43% of the employees attributed grade 10 to the program.

Regarding the grades attributed to the people who supervised the exercises (monitor and physical therapist), in the morning shift the lowest grade was 3 whereas the highest was 10 and 40% of the employees attributed grade 10 to the monitor. In the afternoon shift, 21% of the employees attributed grade 9 and 79% attributed grade 10 to the physical therapist.

When asked about the practice of physical activity, 13 employees answered that they practiced physical exercises before the WG program, with 6 of them from the morning shift and 7 from the afternoon shift; only 1 employee from the afternoon shift started practicing physical activities because of the WG program. There were no extra questions about other situations that might have interfered in the occurrence of pain.

DISCUSSION

The results showed that the sample had a predominance of females (64.2%) within a young age range, with a mean age of 22 years, and that most of them (75) had finished High School. In a study by Vilela[2], carried out in a teleassistance company with the objective of analyzing work situations in regard to the complaints of 2,285 teleassistance employees, the author also describes a population with a predominance of females (70%) within an age range < 30 years (90%) and who had finished High School (72%). This demonstrates that, despite the fact that this is a small sample size, it is equivalent to that of the general teleassistance population in the city of Belo Horizonte.

The analysis of pain perception by the employees before and after the WG program shows that when the exercises are supervised by a physical therapist, there is a significant difference in the results, pointing to an improvement of the initial pain status. However, when the employees are supervised by the monitor, the difference found was not significant. It is accepted that this result might have been influenced by the presence of a second physical therapist in the afternoon shift in the two first months of the program and by the fact that the group of employees in the morning shift had had more time in the job. However, these results are still comparable to those by Soares and Assunçao[11], who stated that an important factor of lack of success in WG programs is the supervision being carried out by a monitor and not by a professional. The authors discuss the lack of trust on the part of the employees when the WG is supervised by the monitor and the monitor's lack of skill when dealing with unexpected facts and body compensations that can influence the effectiveness of the exercises.

According to Martins & Duarte[6], in addition to supervising the exercises, the physical therapist must also dedicate some minutes after the sessions to answer the questions of the employees regarding physical activity and health, in order to give them security to perform the exercises at home or at work, or even disseminate the acquired knowledge. During this short time, the physical therapist can also detect unforeseen difficulties and restructure the WG sessions in order to better suit the group, which is an important point in the WG dynamics for the success of the program.

As the monitor does not have such qualification, this could also be one of the reasons for the difference observed in the results on the perception of pain by the employees when they were supervised by the monitor or by the physical therapist in the present study.

Several authors found a positive impact of WG on the employees' health status and/or work environment[8,14,15]. According to Rocha[16], most of the employees who participated in a WG program presented improvement in back pain, muscular pain and fatigue. As stated by Miyamoto *et al*[17], the exercises carried out during the working hours, even if a for a short period of time, can also contribute to minimize stress, improve posture and relaxation among the participating employees.

After researching work leaves caused by Repetitive Strain Injury (RSI) in a group of 44 systems analysts and systems programmers, Pereira[18] implemented the WG program at the beginning of the workday and after 4 months the author attained a decrease of the initial complaints of RSI in 72% of the symptomatic employees.

In the present study, the teleassistance employees also reported improvement in the fatigue, body pains and stress, as well as better disposition to work, more satisfaction with the company and better interaction with the colleagues after the 4 months of exercises.

Another positive finding was the perception of most of the teleassistance employees (around 90%) of WG as part of their leisure time and not of their work schedule. Additionally, only one of the 24 participating employees would not recommend WG to a colleague, which shows a broad acceptance of the program by the employees.

However, the benefits of the WG are not a general consensus. A study carried out by Mendonça[19] showed that there was no statistically significant difference in the pain scales through the SF36 questionnaire when the group of the WG participants was compared to the control group. The author affirms that the exercise recommendation is an important aspect for health and quality of life, but if it is applied with disregard of the aspects of work environment modifications, it can lead to musculoskeletal pain persistence and lack of success in overcoming the problem.

Logen[9] followed for two years the employees from a food company that presented a critical situation regarding RSI/WROD (Work-Related Osteomuscular Disorder). The results show a great reduction in case reports, mainly three months after the program implementation, which progressively grew again along two years. The author attributes this phenomenon to WG implementation as the only form of prevention in the company and states that the WG programs must not be omnipotent measures of prevention, but must be associated to changes in the work organization and physical environment. However, the same author states that after the implementation of WG, there was a large increase in the regular practice of physical exercises by the employees, going from 7% at the start of the program to 44% after two years, and associates this result to the health-promoting proposal of the WG program.

Therefore, the WG program must not be understood only as a physical activity, but as an opportunity for establishing a lifestyle reeducation program that contributes to increase the capacity for work activities while maintaining enough energy reserves to face the daily routine.

Pinto & Souza[20] state that "with a minimum of physical activity one can attain a large benefit for the health". Despite the scarcity of epidemiological studies analyzing the efficacy of WG programs, there are concrete correlations about the benefits of practicing physical exercises on the employees' health[21,22].

It is noteworthy that, for the development of a WG protocol that is adequate for each group of employees, it is necessary to answer questionnaires and be interviewed, providing the information on employees' health, expectations and perceptions to the professionals in charge of the program[6]. The search for effective actions on the employees' health-disease process must always take the employees' active participation into account, "as their own life and health subjects, capable of contributing with their knowledge for the advancement of the understanding of the work impact on this process"[23].

CONCLUSION

The WG Program seems to have beneficial effects on the workers' health, decreasing the reports of fatigue and stress, increasing work motivation and the interaction among colleagues, in addition to decreasing the pain complaints. In order to achieve such benefits, the companies and the employees must be careful regarding the individual in charge of administering the WG. Professionals who are capacitated for the programming and correct supervision of the exercises, such as physical therapists, can successfully achieve such results, differently from trained employees (monitors). Additionally, WG must be understood as an additional prevention tool for promoting workers' health, not the only one.

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