14 - PHYSICAL THERAPIST EVALUATION IN FITNESS CENTER: ANALYSIS OF MOST COMMON INJURED CORPORAL SEGMENT.

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INTRODUCTION

It is increasingly evident the importance of physical exercises in people's lives, for the maintenance of a good health and as prevention of illnesses. The regular practice stimulates the promotion of quality of life, presents an inverse relation regarding the risk of chronic-degenerative illnesses and is already considered to be allied with public health[1,2,3].

Among the many benefits of physical exercises, if maintained with frequency, the reduction of cardiovascular diseases, diabetes and hypertension can be mentioned, besides the general strengthening of muscles, bones and joints. Moreover, the practice associated with diet improves the lipid profile in the long term[1,4].

The low levels of physical activity and physical exercises of western populations, including in developing countries, are possibly explained by changes in lifestyle, employment, purchasing common products in the technology and information technology era, such as televisions and computers, leading the population to spend many hours a day sitting and relatively inactive. In Brazil, data from the Brazilian Institute of Geography and Statistics show 80.8% of sedentary adults[3].

In a guide to public health and physical activity published in 1995, the American College of Sports Medicine (ACSM) with the Centers for Disease Control and Prevention (CDCP) recommended that all adults should practice exercises of moderate intensity, totaling at least 30 minutes a day, or at least, almost every day of the week[5].

Despite the evident benefits of the physical exercises, some people still have some resistance or do not accept such recommendations regarding this practice[5].

Individuals with injuries or restrictions in the musculoskeletal system encourage health professionals to create adaptations to exercises at fitness centers, in an attempt to minimize the sedentary lifestyle or even prevent the evasion of those who injure themselves during the practice[6].

The role of the physiotherapist in fitness center with the professionals of physical education appears to be crucial, since some disorders of the locomotor system might get worse with the practice of exercises and methods without their proper precautions[7].

For these professionals, it is important to understand the musculoskeletal system (composed of striated muscles, many types of connective tissue - ligaments, aponeurosis, fascias, tendons - and the skeleton) and their injuries, in view of the individual intentions to start a physical exercise program and present restrictions. The particularities of each gender and age group related to these also are interesting[8].

Therefore, the aim of this study was to analyze the body segments affected through records of physical therapist evaluation and its relations to the gender and age of individuals who have been submitted to a physical therapy department evaluation in a fitness center.

MATERIALS AND METHODS

In 2007, 106 students were submitted to the department of physiotherapy at Wave Fitness Center, in Balneário Camboriú - SC. This department's main functions are to evaluate, prescribe and guide the students who have diseases or injuries, with regard to more convenient and beneficial modalities and exercises.

This study was carried out with the consent of the fitness center's owner, who has signed a term to perform the survey by the department of physical therapy.

As criteria for inclusion in the study, students should be duly enrolled at the fitness center, submit medical reports to the practice of physical activities, or even sign a responsibility form by making it responsible for any complications arising. Four students who were submitted to physiotherapist evaluation were excluded, but had no diseases or injuries in the musculoskeletal system, totaling 102 students.

Individuals of both sexes participated in the survey, being submitted to physiotherapist evaluation during the period from January 01 to December 31, 2007, with ages ranging from 14 to 78 years old, who were being admitted to the fitness center, or who presented similar evidences during the practice of modalities offered. Their data were attached to the protocol of evaluation and subsequently analyzed, showing their current clinical condition.

The analysis of records was carried out during June and July / 2008 by the same professional who evaluated the individuals, containing the following topics: Identification data, Main complaint, History and current history of the disease, Pain, Performed Treatments, Investigations, Risk factors, Life habits, General Inspection (specific tests for injuries evaluation), Palpation, Posture analysis, Activities concerning the fitness center and Academy Aims and Prescription of activities.

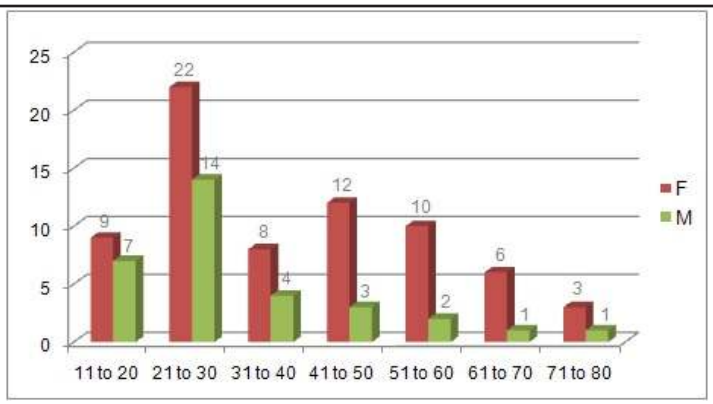
The data collected were stored in Microsoft Excel spreadsheets. This was an initial descriptive analysis (measures of frequency and percentage distribution) of the variables above and subsequently, there was a test to check the body segment affected according to gender (male and female) and age group.

RESULTS

Of the 102 medical records evaluated, 70 were female and 32 male. The ages ranged from 14 to 78 years, and the average age of 46 years was obtained.

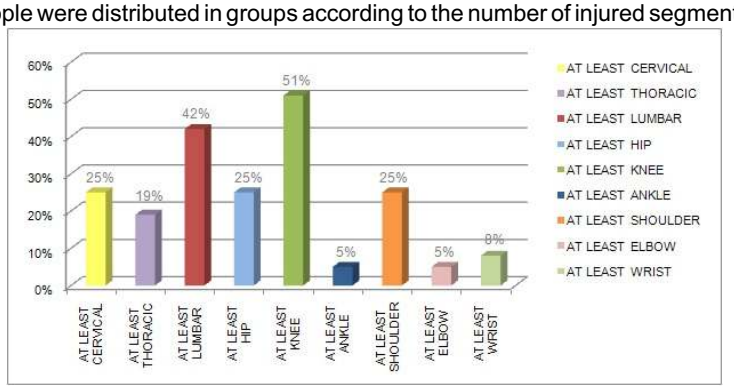
For the registration of these 102 records analyzed, it was considered discomfort, injuries or diseases of individuals in any body segments divided into: the cervical spine, thoracic spine, lumbar spine, hip, knee, ankle, shoulder, elbow and wrist.

The distribution of students by age groups was performed considering periods of 10 years each, shown in Graphic 1. The subdivision that was presented was more expressive with individuals from 21 to 30 years, totaling 36 people (35%).



Graphic 1. Number of individuals of each gender in each age group.

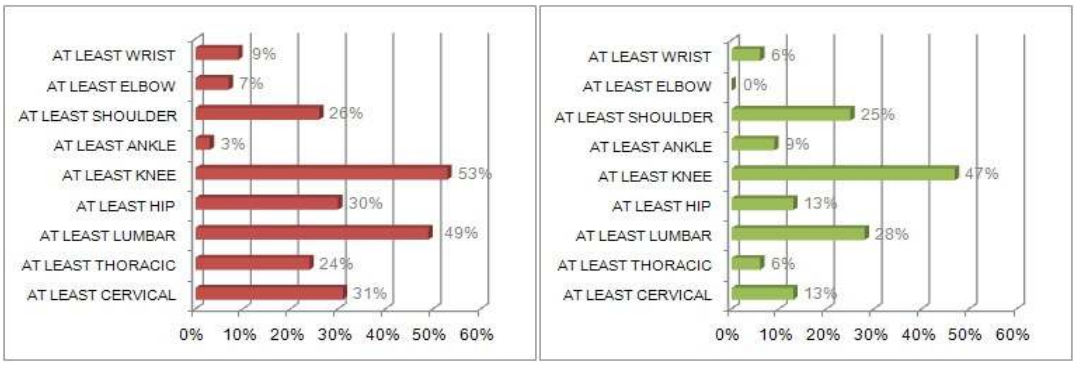
More than half of the individuals (51%) reported involvement in at least knee, 42% in the lumbar spine followed by 25% in the cervical spine, the same frequency in hip and shoulder (Figure 2). It should be considered that in the analysis of body segments, the analyzed people were distributed in groups according to the number of injured segments.



Graphic 2. Distribution of the injured body segments.

In a general way, the knee joint was the most mentioned in both sexes when it was observed the relation among the body segments by gender (Graphic 3). It is valid to note that the percentage of each body segment was related to the number of individuals of each gender (female and male = 70 **= 32).**

Female **Male**



Graphic 3. Distribution of body segments affected by gender.

The occurrence of the predominant injury in each age group was shown in Table 1, verifying the percentage according to the body segment affected by the number that occurred in each age group. Out of the 209 disease, injury or discomfort records, in body segments of 102 individuals, the most frequent age group was from 21 to 30 years old (56 times).

AGE GROUPS	MOST COMMON INJURED CORPORAL SEGMENT	% ABOUT N
11 to 20	KNEE	36% of 28
21 to 30	KNEE	38% of 56
31 to 40	LUMBAR	21% of 24
41 to 50	LUMBAR	24% of 41
51 to 60	LUMBAR	19% of 37
61 to 70	KNEE	29% of 14
71 to 80	LUMBAR	33% of 09

Table 1. Most common injured corporal segment by age groups.

DISCUSSION

Based on our material we report the cases of 102 individuals who, in 2007, were searching health improvements, quality of life and aesthetics in a fitness center. Meanwhile, they showed some restrictions in the musculoskeletal system that did

not make them give up the practice.

As criteria for including each injured segment, medical diagnosis, pain or discomfort on palpation or reports of painful episodes for some movement were considered. The International Association for Study of Pain defines the pain as an event with unpleasant sensation and emotional, with current or progressive tissue injury[7].

According to our findings, women are always in greater numbers and especially among individuals from 21 to 30 years, 41 to 50 years and 51 to 60, showing an average in these three age groups of approximately nine more women in each group. This shows a significant increase in physical activity performed by this group because, "the current woman is increasingly independent, not forgetting the aesthetic factors leading the society. The woman was placed in the labor market and did not leave aside their vanity, the concern with the body and their health "[9,10].

The most significant number of individuals from 21 to 30 years in the study, in general, shows that this age group is the most active within the fitness centers and due to this they have larger number of records from disease, injury or discomfort in any body segment.

The age group that that has been the least significant in the study was composed of individuals between 71 and 80 years old, perhaps by the low grip of this group to exercise in relation to younger people or diseases associated with old age. Meanwhile, the physical exercises are extremely important for this group since the loss of muscle mass associated with age can be caused by the aging, lack of physical exercise or both. During maturity, the muscles still have the ability to adapt in response to training and that significant improvements in physiological characteristics, structural and performance can be obtained with appropriate programs of exercises in fitness centers[11].

In both genders, the most affected body segment was the knee. Many of the diseases that are related to the joint are related to the individual's profession, age and sex. The gender is also related to sports activities and activities of domestic life and its posture vices, always harmful for locomotor system.

The knee is not maintained by a bone structure, but by ligaments and muscles. Therefore, we believe that the frequent occurrence in the study is mainly to excessive daily use and essential in the human body as this linkage is often exposed to large stretching and tensions13. Some pain in the knee syndromes are related mainly to young adults (21 to 30 years old), a consistent finding to our study[12].

Hewett et al. (1999) and Pasanen et al. (2008) concluded in their studies that programs of neuromuscular exercises, when well targeted and practiced, help prevent some injuries in female athletes and physical exercises practitioners[14,15].

Many programs of rehabilitation and physical exercises have been developed for individuals who present restrictions in the knee joint.

The adjustments to certain exercises have great importance until the articulation is with its role fully in harmony, or adapted to the practice[16]. It is essential that the joints that support the body weight get relieved of part of this weight, that in the march is increased in the lower limbs in two, three or even four times. The decreases in overweight, the use of appropriate footwear for the practice of physical exercises or even reduction of daily activities, in some cases, provide positive effects[12].

In relation to the injury occurrence by each age group, it was noted the prevalence of injuries in the lumbar spine that appeared in 4 groups, followed by the knee injury that was predominant in other 3 groups.

Seventy to eighty-eight percent of the population, suffer or will suffer from back pain at some point in their lives10. Some factors are identified and related to back pain as the heavy physical work, static postures at work, stress of lumbar curvature (hyperlordosis), among others[17,18].

According to Tsukimoto et al. (2006), the term back pain refers to all categories of pain, with or without stiffness, which are located on the lower back of the arc between the costal and gluteal area. Usually caused by a number of causes such as age, sex, sedentary lifestyle, among others[19].

When related to the age groups, the pain proved to be expressive in groups between 31 to 40, 41 to 50, 51 and 60 and between 71 to 80 years old.

The physical exercises can prevent, if practiced in the long term, the CLBP. In acute lumbar pain, it appears to be beneficial according to Vuori (2001)[20].

Meanwhile, Malmivaara et al. (1995) concluded in their study that individuals with acute low back pain who practice continuous exercises, within the limits allowed by the pain, show a faster recovery than those who remained at rest for medical prescription[21].

While connecting the most affected body segments in each age group, the knee is often presented in groups of 11 to 20, 21 and 30 and 61 to 70 years old. One possible reason for the results with this group of individuals between 11 to 20 years, are some specific common diseases of the age.

A predisposition to a particular type of injury added to the lack of care during the practice of physical exercises can cause pain or diseases in that segment[22].

The second last group divided by age (61 to 70 years), injury or discomfort may occur due to degeneration and physiological changes that occur in the aging process[23].

CONCLUSION

The results of this study show that the age group between 21 and 30 years old received more records of involvement in any body segment, as well as the knee joint was the most reported when it was considered the body segment in both sexes.

The knee had also become more evident in ages 11 to 20, 21 and 30 and 61 to 70 years old and lumbar spine was predominant in age other groups.

It would be interesting to relate these most frequent segments in the study to some features like most common gender, age group most frequently involved in analysis of protocols for a period over a year. For this reason, future studies with a more expressive number of individuals in each age group and gender are important.

It is expected that, with this study, health professionals working in fitness centers give greater emphasis to evaluation of individuals wishing to start programs of physical exercise, specially to those who have injuries or restrictions in the musculoskeletal system.

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ABSTRACT

It is increasingly evident the importance of physical exercises in people's lives for the maintenance of a good health and as prevention of illnesses. If carried out regularly, they stimulate the promotion of quality of life and present an inverse relation regarding the risk of chronic-degenerative illnesses. Even so, some people still present certain resistance or do not accept such recommendations regarding this practice. Individuals with injuries or restrictions in the musculoskeletal system stimulate professionals of the health area to create adaptations for physical exercises in fitness centers. The aim of this study is to analyze the most common injured corporal segments in a fitness center through records of physical therapist evaluation and its relations to the gender and age. It was carried out through the analysis of 102 records, since the knee joint and the lumbar spine, in a general way, had been the most damaged corporal segments, and the most expressive age group was shown to be among individuals from 21 to 30 years old. One expects that, with this study, the operating professionals of health area in fitness center give greater emphasis to the procedures of evaluation of individuals that intend to initiate physical exercises programs, and that present injuries or restrictions in the musculoskeletal system.

Key-Words: physical therapist evaluation, fitness center, injuries.

ÉVALUATION PHYSIOTHÉRAPEUTIQUE DANS ACADÉMIE DE GYMNASTIQUE : ANALYSE DES SEGMENTS CORPORELS PLUS ATTAQUÉS.

RÉSUMÉ

Est de plus en plus évidente l'importance des exercices physiques dans la vie des personnes, pour manutention d'une bonne santé et mange prévention de maladies. Si réalisée régulièrement, il assiste dans la promotion de la qualité de vie et présente une relation inverse avec risque de maladies crônico-degenerativas. Néanmoins, quelques personnes encore présentent certaine résistance ou n'acceptent pas telles recommandations concernant cette pratique. Des personnes avec des blessures ou des restrictions dans le système musculoesquelético stimulent les professionnels de la santé à créer des adaptations aux exercices physiques dans des académies de gymnastique. Cette étude il a eu comme objectif analyser les segments corporels plus attaqués dans une académie de gymnastique à travers des manuels d'évaluation physiothérapeutique et leurs relations avec le type et âge. Il a été réalisé moyennant l'analyse de 102 manuels, en étant que le joint du genou et la colonne lombaire, d'une manière générale, ont été les segments corporels plus attaqués, et le strate étaire plus expressif s'est révélé entre des personnes de 21 à 30 ans d'âge. Il s'attend que, avec cette étude, les professionnels de la santé opérants dans des académies de gymnastique, donnent plus grand accent aux procédures d'évaluation de personnes elles lesquelles prétendent initier des programmes d'exercices physiques, et qui présentent des blessures ou des restrictions dans le système musculoesqulético.

Mots-clés: évaluation physiothérapeutique, académie de gymnastique, blessure.

EVALUACIóN FISIOTERAPéUTICA EN GIMNASIO: ANáLISIS DE LOS SEGMENTOS CORPORALES MáS ACOMETIDOS.

RESUMEN

Es cada vez más evidente la importancia de los ejercicios físicos en la vida de las personas, para mantenimiento de una buena salud y como prevención de enfermedades. Si realizados regularmente, auxilia en la promoción de la calidad de vida y presenta una relación inversa con el riesgo de enfermedades crónico-degenerativas. No obstante, algunas personas todavía presentan cierta resistencia o no aceptan tales recomendaciones a respecto de esa práctica. Individuos con lesiones o restricciones en el sistema músculo esquelético estimulan a los profesionales de la salud a crear adaptaciones a los ejercicios físicos en gimnasios. Ese estudio tuvo como objetivo analizar los segmentos corporales más acometidos en un gimnasio a través de prontuarios de evaluación fisioterapéutica y sus relaciones con el género y edad. Fue realizado mediante la análisis de 102 prontuarios, siendo que la articulación de la rodilla y columna lumbar, de una forma general, fueron los segmentos corporales más acometidos, y el estrato etario más expresivo se reveló se entre individuos de 21 a 30 años de edad. Se espera que, con este estudio, los profesionales de la salud actuantes en gimnasios, den mayor énfasis a los procedimientos de evaluación de individuos que pretenden iniciar programas de ejercicios físicos, y que presentan lesiones o restricciones en el sistema músculo esqulético.

Palabras clave: evaluación fisioterapéutica, gimnasio, lesiones.

AVALIAÇÃO FISIOTERAPÊUTICA EM ACADEMIA DE GINÁSTICA: ANÁLISE DOS SEGMENTOS CORPORAIS MAIS ACOMETIDOS.

RESUMO

É cada vez mais evidente a importância dos exercícios físicos na vida das pessoas, para manutenção de uma boa saúde e como prevenção de doenças. Se realizados regularmente, auxiliam na promoção da qualidade de vida e apresentam uma relação inversa com risco de doenças crônico-degenerativas. Mesmo assim, algumas pessoas ainda apresentam certa resistência ou não aceitam tais recomendações a respeito dessa prática. Indivíduos com lesões ou restrições no sistema musculoesquelético estimulam os profissionais da saúde a criar adaptações aos exercícios físicos em academias de ginástica. Esse estudo teve como objetivo analisar os segmentos corporais mais acometidos em uma academia de ginástica através de prontuários de avaliação fisioterapêutica e suas relações com o gênero e idade. Foi realizado mediante a análise de 102 prontuários, sendo que a articulação do joelho e coluna lombar, de uma maneira geral, foram os segmentos corporais mais acometidos, e o estrato etário mais expressivo revelou-se entre indivíduos de 21 a 30 anos de idade. Espera-se que, com este estudo, os profissionais da saúde atuantes em academias de ginástica, dêem maior ênfase aos procedimentos de avaliação de indivíduos que pretendem iniciar programas de exercícios físicos, e que apresentam lesões ou restrições no sistema musculoesqulético.

Palavras-chave: avaliação fisioterapêutica, academia de ginástica, lesões.