48 - PHYSICAL AND MENTAL STRESS OF PROFESSIONALS OF BODYBUILDING IN FORTALEZA (BRAZIL)

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INTRODUCTION

Physical activity has been more and more intensely wanted due to the increased obesity rate, a very common aspect of current individuals, who do not have time for the regular practice of exercises. In accordance with Neto (1994), this search comes from the imposition of sedentary modern life, from the current, often unreachable standards of beauty and also from the will to spend idle hours in a pleasant way.

The consequence of this can be seen in the increased number of pupils in fitness clubs. These in turn offer several advantages, such as supervised activity, comfort (proximity to residence or work place), different activities among which a pupil can choose the one that pleases him or her the most, social interaction-which is of big interest to aged people and to children-, and security.

Given the power of body image at the beginning of the 21st century, one of the preferred and most commonly offered modalities in fitness clubs has been bodybuilding.

Having goals ranging from simply physical conditioning or improvement of physical quality up to the search for a body worthy of a professional weightlifter, clients have been overcrowding fitness clubs that offer this modality. According to Fleck (2006), bodybuilding or weight training is an excellent way to produce strength rise, increase of lean mass, decrease of body fat, and improvement of physical performance in sports activities and in daily life.

It is not difficult to observe trainees working in bodybuilding clubs as if they were graduate teachers, responsible for monitoring pupils and elaborating training programs. Often lacking preparation and knowledge, as well as intending to earn some money for small expenses or even to in part pay for college, these young people subject themselves to a 4 to 8 hours daily work routine and obtain lowest wage, since they are considered by fitness clubs to be a cheap work force.

Moreover, there is a problem about stress, caused by the lack of adequate work conditions, such as the great amount of pupils in relation to the amount of working hours, the excessively heavy burdens placed by the employers, intense physical wearing-out in result of lifting and carrying weights (in the bodybuilding room), mental wearing-out in result of the great responsibility for the pupils' welfare/health, and finally heavy burdens placed by the pupils themselves, who want fast outcomes. Such a stress is one of the biggest causes of work quitting (CATALDI, 2002) and, in the long run, sets the individual suffering it in a clinical frame where stress and bone-joint injuries (DORT' s) are associated.

Thus, this research has the objectives of, first, surveying the level of stress perceived by these professionals and, second, contributing to alert not only people of health area, but particularly the ones involved with bodybuilding clubs.

1. BODYBUILDING CLUBS: A CURRENT PICTURE

It is outstanding that people have come to worry a lot about their physical aspect, the quality of their lives, health and welfare. The valuing of body and the prevention of diseases (healthful aging) have been in rise in recent years and have become central in our culture. In searching either stereotypes of perfect bodies or the “formula of youth”, people have been more and more clearly looking for fitness clubs, once these places, according to Neto (1994), offer a monitored, safe, systematic and efficient physical activity in a comfortable, safe and healthy environment.

For Pereira (1996), the fall of outdoors activities and consequently the intensified search for fitness clubs are due to the fact that, first, squares and parks have turned scarcer and scarcer and, second, these places have become overcrowded because of the rise of demographic density, which hinders free motion.

According to Bergalo (2004), a survey done for the Brazilian Association of Fitness Clubs (ACAD) in 2000 estimates that about 7,000 fitness clubs exist all over the country and have about 120,000 employees. There are currently around 40,000 Physical Education professionals registered in the Regional Council. We see thus a number of fitness clubs much greater than the number of Physical Education teachers with professional credentials.

Amongst the modalities offered in fitness clubs, bodybuilding is one of the most often searched. Gonçalves (19??) justifies this search by regarding it as the fruit of an immediatist trend of contemporary society. According to him, modern man gets engaged in activities with results being attained in a short term, and bodybuilding has shown to be a fast solution for different yearnings of different individuals.

It is known that weight training can be applied to almost any person, but for rare exceptions, provided the activity with weights, as Rodrigues (2001) claims, is planned, guided and directed by a qualified and competent professional.

Since then, bodybuilding has been looked for by very different sorts of people, ranging from 10 to 12-year-old children up to 70 to 80-year-old people with some level of impairment, whether a muscle, joint, or psychological one. The search for bodybuilding by individuals with restrictions surpasses that for other activities, for it is a matter of extremely personalized training, taking into consideration the biological individuality of each human being.

2. WORK MARKET

Facing these activities, there is the bodybuilding professional. In accordance with Pereira (1996), the appearance of fitness clubs in Brazil took place around 1970. In the beginning they were small and installed in houses and mezzanines, with only one teacher, who was usually the owner of the place.

That is, as it was an activity still in rise, it did not take a large number of professionals. Also, there were no deep scientific studies on the training area indicating the necessity for a qualified professional to act inside fitness clubs

What nowadays occurs is an emergent market of fitness clubs/companies, which often try to surpass competition in rendering service at low cost and using either trainees or even people without the minimum qualification to perform the role of teachers, as it was evidenced by a CREF-5 recent inspection of some fitness clubs in Fortaleza.

The professional, whether qualified or not, suffers a series from aggravations: the non-restriction of the amount of pupils per teacher, the physical wearing-out related to lifting and carrying weights, as well as the demonstration of exercises. The convergence of all these factors diminishes the quality of the service rendered by the professional, who is overloaded physically and psychologically.

3. THE STRESS

Cataldi (2002) defines the term 'stress' as the set of reactions that a mechanism develops when submitted to a situation that demands an adaptation effort. That is, when an organism is submitted to a stimulus that threatens its homostasis (organic balance), it tends to react in such a way as to restore the balance.

In contrast to what many think, stress is not necessarily something maleficent. France & Rodrigues (1996) claim that it can be an important and useful resource for a person to face up to the different situations of his or her everyday. They also affirm, first, that the reply to stress is activated by the organism, which puts in motion resources that make it possible to face up to situations that are perceived as difficult and that demand an effort, and second that life without stress would be monotonous and boring, so that there would be no scientific or personal development.

For Weiss (1991), nobody can eliminate or prevent stress completely, since it is a way of the body's preparing to protect itself against danger, whether fighting against or running away from it.

A situation of tension can in certain way even be beneficial to a human being, when he or she prepares for or adapts to that situation. In this case, what is in focus is known as “eustress”. On the other hand, when we are assailed by the same tension, but we do not have time or any favorable conditions to reestablish the balance and the normal conditions of our body, and furthermore there is a loss for the organism, then the stress in focus is known as “distress” (CATALDI, 2002).

Castro (2002), Cataldi (2002), France & Rodrigues (1996), Lipp et al. (1998), and Weiss (1991) divide stress in three phases: alarm (or emergency), resistance and exhaustion. The alarm phase is characterized by the first reply of the organism to the stressing stimulus and by its preparing itself for fight or escape. The resistance in turn occurs when the stressing agent keeps its action and already represents a process of organic suffering, bringing about reactions as sleeplessness, changes in mood and ulcerations in the digestive system. The last phase-the most dangerous-is the exhaustion, characterized by a failure of the adaptation mechanisms, a brief return to the alarm phase, and exhaustion originated from psychological overload. If the stressing stimulus remains strong, it can motivate serious sequels or even death of the organism.

More specifically, work stress is best characterized by the concept of *burnout*, which was developed by Devaux in 1980. He discusses exhaustion in function of an extreme effort that the person makes in order to answer the constant requests of energy, force and resources (FRANCE & RODRIGUES, 1996).

In some circumstances, it is difficult for a professional to diagnose or even to admit a picture of stress. A lot of people view the term 'stress' as a synonymous one for 'weakness'. According to Arroba & James (1988), pressures in some work places are seen and accepted in a receptive way, however any symptom of stress is unacceptable.

These aspects make it difficult or even impracticable the diagnosis and treatment of stress, leading the individual suffering it to a more and more serious stage of the illness.

4. PHYSICAL WEARING-OUT

The physical wearing-out of bodybuilding professionals originates mainly from their handling of weight plates at the machines.

Weight plates weigh differently, being found with weights that vary between 0,5 kg and 25 kg.

Lifting and carrying these weights is very common during a professional's working hours, and it is done repeated times, together with the demonstration of some exercises.

Since any and all external loads applied to our body are reflected directly in the backbone (HALL, 2005), this is what we are going to explain a little in this section, pointing out how handling and carrying objects incorrectly or excessively can harm it.

The backbone is formed of 24 free and 09 fused vertebrae. 7 of the free ones are cervical, 12 thoracic, and 5 lumbar; 5 of the fused ones are sacral and 4 coccygeal. Its main function is to sustain all other components of our body. The backbone is the structural pillar of the organism.

Its movements are inflection, extension, hiperextension, lateral rotation and lateral inflection, according to Hamill & Knutzen (1999).

Merino (1996 apud GRANDJEAN, 1982) also points out that handling and moving loads has as major risks backbone problems, which are painful and reduce the mobility and the vitality of workers. The incidence of these problems is responsible for the high rates of absenteeism, for the precocious incapacity and extreme wearing-out of workers, because the most common way to raise a load is by using the back muscles, which increases about 17 times the weight of the load in the paravertebral set of muscles (COUTO, 1995).

As an illustration, the following chart presents examples of loads suffered by the L-3 vertebral disc in a 70-kg individual:

Load suffered by the L-3 vertebral disc in a 70-kg individual

Activity	Load on the disc (N)
Lying	294
Standing	686
Sitting upright	980
Leaning sideward	931
Leaping	1078
Lifting 20 kg with the backbone upright and the knees inflected	2058
Lifting 20 kg with the backbone bended and the knees extended	3332

(Adapted from HAMILL & KNUTZEN, 1999, apud NACHEMSON, 1976)

The highest compression of the disc occurs when the person lifts something with the backbone bending and the knees extended, which is an example of the method most commonly used in lifting loads.

The correct position for lifting loads would have to be squatting, as well as keeping the inferior members inflected and the load to be raised in a distance as small as possible from the gravity center, that is, next to the body.

5. FIELD STUDY

With the purpose to observe the prevalence of mental-physical stress of bodybuilding professionals, visits have been made to some fitness clubs in Fortaleza, between May and August of 2007. For the application of the study, professionals were chosen randomly, 45 in sum, and they were submitted to a direct, predefined questionnaire adapted from the Inventory of Symptoms of Stress (LIPP et al., 1998). Also an inquiry about prevalence of body pains caused by work was done, together with a

collection of some personal and professional data of each person interviewed.

Among the people researched, 38 of them were men and 7 were women. They were asked if they found their job stressing. 25 of the total (55.5%) did found it so, and 20 of them (44.5%) answered no. Among the ones that answered no, only 1 was not identified with any of the symptoms of stress displayed in the questionnaire.

Among the interviewed ones that described themselves as "stressed" and were analyzed in accordance with parameters of Lipp et al. (1998), 52% were at the beginning of a picture of stress, i.e. in the alarm phase, 24% of them already showed stress in the second stage, i.e. resistance, and 12% were classified as in the final phase of stress: exhaustion. In all the phases of stress the symptoms were predominantly manifested in the cognitive and emotional realms-68%-, whereas only 20% were related to the somatic realm.

Concerning the most frequent symptoms, 28 of the 45 people interviewed said they had felt tense muscles as an outcome/a result of their job.

It could be observed that, depending on the academic level of the individual, 7 in each 10 graduated professionals considered themselves stressed, whereas only 4 of each 10 trainees did.

Relating to organizational factors of the job, it was observed that for professionals who did not deem their work stressing the amount of pupils in relation to the amount of working hours of each professional was on an average of 33 pupils to 5 hours, whereas for those who did consider themselves stressed the numbers increased to 45 pupils against 6 hours and 25 minutes daily.

In relation to the wage and the working hours, the graduated teachers were in the first rank with 6h 25min and R$ 985,00 on an average, whereas the trainees had on an average 4h 25min of daily working hours and R$ 380,00 of monthly wage.

When asked about body pains caused by work, 82.2% of the interviewed professionals answered positively. Among the most affected areas, the lumbar region is in the first place (86.6%), the neck in the second (56.7%), and the knees in the third (40%).

6. FINAL CONSIDERATIONS

Fitness clubs became excellent places for practicing physical activities in the present time, because of such factors as security and supervised as well as efficient activity. Bodybuilding has been more and more intensely searched, because it serves almost all individuals and offers them an individualized activity, in accordance with the necessities and yearnings of each practitioner. In face of it there are the bodybuilding professionals, who must be technically prepared to provide their pupils with a qualified and safe activity. On the other hand, it is important to pay attention to some organizational aspects of the work that fitness clubs must respect so they can provide professionals with an environment of favorable work and so they, as a consequence, can render service of higher quality. To restrict the number of pupils per professional and his or her amount of working hours can be a good start, since we saw how these factors can interfere in the development of stress of the professional, who in turn goes through a reduction of his or her capacity to work. Another aspect that unchains stress-one of physical order-is the handling of weights in a bodybuilding room. This second aspect can be minimized with the pupils' re-education concerning the use of the weights. It must be clear that, not the teacher, but the pupil, is in charge of organizing the weights in use, and that it is up to the professional to assist the pupil in a casual necessity.

It is also important for the professional to pay attention to his or her correct body position in lifting and carrying weights, in order to minimize loads imposed on his or her backbone. The professional must understand and know this very clearly so it can be of benefit to him or herself and also to the pupils.

This article will perhaps be an important means to create guidelines for conducting the work of and in bodybuilding rooms. Therewith it is possible to outline a profile of the professionals who act in the modality in focus, to observe their difficulties, as well as the importance of adopting measures that assure the professionals' welfare and, consequently, to offer quality in the rendering of services.

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PHYSICAL AND MENTAL STRESS OF PROFESSIONALS OF BODYBUILDING IN FORTALEZA (BRAZIL)
ABSTRACT

This study aims at showing an evaluation of the strong presence of physical and mental stress in professionals of bodybuilding in Fortaleza, capital city of Ceará State, in Brazil. The sample consisted of 45 bodybuilding professionals of both sexes and of different technical levels (trainees, graduate teachers). For the collection of data, a questionnaire was adopted which was based on the Inventory of Symptoms of Stress. It had questions concerning the physical wearing-out as well as some personal and professional data. The results have indicated that stress prevailed in the graduate individuals (75%). Among the individuals suffering stress, 52% of them were circumscribed in the first phase of stress (the alert phase), and generally speaking stress was manifested more significantly in the cognitive and emotional realms of the persons interviewed, with 68% of prevalence of symptoms. Relating to the physical wearing-out, 82.2% of the sample had body pains caused by work, which were predominant in the back (86.5%) and neck (56.7%) regions. The major factors observed as responsible for the development of stress were associated with work organization, since the stressed individuals worked on an average 6 hours and 25 minutes daily and had about 45 pupils a day, whereas the nonstressed ones worked 5 hours and had 33 pupils a day. It turns out that work guidelines for bodybuilding clubs should be adopted which take into consideration such organizational aspects as working hours and number of pupils per teacher. Those aspects should be viewed as aiming at the professional's welfare so that he or she can have conditions to perform his ou her job in a fair and competent way.

WORD-KEYS: stress, bodybuilding professionals, physical wearing-out.

LE STRESS PHYSIQUE ET MENTAL DES PROFESSIONNELS DE MUSCULATION
RÉSUMÉ

Le présent étude a eu l'objectif d'évaluer la prévalence du stress physique et mental en professionnels de musculation à Fortaleza-Ce. L'échantillon s'est constitué de 45 professionnels de musculation des deux sexes et de différents niveaux téchniques (estagiaires, gradués et provisionnés). Le questionaire, avec l'iventaire de symptômes de stress, questions référentes à l'épuise physique et quelques informations personnelles et professionnelles, a été adopté au recueil des données.Les résultats obtenus ont indiqué que le stress prévalait aux individus provisionnés et gradués (70% et 75% respectivement). Parmi les individus qui ont fait preuve du stress, 53% ont été encadrés à la première phase du stress (alerte), et, d'une manière générale, le stress s'est manifesté plus à la sphère cognitive et émotionnel des interviewés, avec 68% de prévalence des symptômes.Par rapport à l'épuise physique 82,2% du recueil a fait preuve de douleurs par le corps à cause du travail avec la prévalence de la région lombaire (86,5%) et du cou (56,7%). Le facteur principal observé comme responsable par le developpement du stress ont été les organisationnels du travail, car les individus stressés avaient une charge horaire de, en moyen, 6 heures et 5 minutes tous les jours et environ 45 élèves par jour pendant que pour les non-interviewés étaient de 5 heures avec 33 élèves par jour. On constate que c'est nécessaire l'adoption de directrices de travail pour les classes de musculation qui prennent en considération les aspects organisationnels comme la journée de travail et le nombre d'éléves par professeur. Ces aspects doivent être considérés en visant le bien-être du professionnel pour qu'il ait de moyens pour exercer de façon pleine et capable son travail.

MOTS-CLES: Stress, professionnel de musculation, l'épuise physique.

EL ESTRÉS FíSICO Y MENTAL DE LOS PROFESIONALES DE MUSCULACIÓN EN FORTALEZA
RESUMEN

El presente estudio tuvo como objetivo evaluar la prevalencia del estrés físico y mental en profesionales de musculación en Fortaleza-CE. La muestra constituye de 45 profesionales de musculación de ambos los sexos y de diferentes niveles técnicos (con prácticas, graduados y provisionados). El cuestionário, con Inventário de Síntomas de Estrés, preguntas referentes al desgaste físico y algunos datos personales y profesionales, fue adoptado en la colecta de datos. Los resultados obtenidos indicaran que el estrés prevalecía en personas provisionadas y graduadas (70% e 75%, respectivamente). De los indivíduos que presentaron estrés, 52% se encontraban en la primera fase del estréss (alerta), y, de una manera general, el estrés se manifestó más en la esfera cognitiva y emocional de los entrevistados, con 68% de prevalencia de sintomas. Con relación al desgaste físico, 82,2% de la muestra presentó dolores en al cuerpo decorrientes del trabajo, con la prevalencia en las regiones lombar (86,5%) y del cuello (56,7%). El principal fator observado como responsable por el desarrollo del estrés fueron factores organizacionales del trabajo, pues los indivíduos estresados tenían una carga horaria de, en média, 6 horas y 25 minutos diárias, con cerca de 45 alumnos/día, encuanto que los no estresados eran de 5 horas, con 33 alumnos por jornada. Se Constata que es necesária la adopción de diretrices del trabajo para las clases de musculación, que lleven en consideración los aspectos organizacionales como jornada de trabalho y número de alumnos por profesor. Esos aspectos debem ser considerados para el bien estar del profesional para que el mismo tenga condiciones de ejercer de forma íntegra y capaz su trabajo.

PALABRAS-CLAVE: estrés, profesional de musculación, desgaste físico.

O STRESS FíSICO E MENTAL DE PROFISSIONAIS DE MUSCULAçãO EM FORTALEZA
RESUMO

O presente estudo teve como objetivo avaliar a prevalência de stress físico e mental em profissionais de musculação de Fortaleza-CE. A amostra constitui-se de 45 profissionais de musculação de ambos os sexos e de diferentes níveis técnicos (estagiários, graduados e provisionados). O questionário, com Inventário de Sintomas de Stress, perguntas referentes ao desgaste físico e alguns dados pessoais e profissionais, foi adotado na coleta de dados. Os resultados obtidos indicaram que o stress prevalecia nos indivíduos provisionados e graduados (70% e 75%, respectivamente). Dos indivíduos que apresentaram stress, 52% foram enquadrados na primeira fase do stress (alerta), e, de uma maneira geral, o stress manifestou-se mais na esfera cognitiva e emocional dos entrevistados, com 68% de prevalência de sintomas. Em relação ao desgaste físico, 82,2% da amostra apresentou dores no corpo decorrentes do trabalho, com a prevalência nas regiões lombar (86,5%) e do pescoço (56,7%). O principal fator observado como responsável pelo desenvolvimento do stress foram os fatores organizacionais do trabalho, pois os indivíduos estressados tinham uma carga horária de, em média, 6 horas e 25 minutos diárias, com cerca de 45 alunos/dia, enquanto os não estressados eram de 5 horas, com 33 alunos por jornada. Constata-se que é necessária a adoção de diretrizes de trabalho para as salas de musculação, que levem em consideração os aspectos organizacionais como jornada de trabalho e número de alunos por professor. Esses aspectos devem ser considerados visando o bem estar do profissional para que o mesmo tenha condições de exercer de forma íntegra e capaz o seu trabalho.

PALAVRAS-CHAVES: stress, profissional de musculação, desgaste físico.