60 - EFFECT OF A PHYSICAL EXERCISES PROGRAM AND COGNITIVE BEHAVIORAL AND SOMATIC TECHNIQUES ABOUT THE INTENSITY OF PAIN IN UNIVERSITY STUDENTS

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Introduction

A great number of people suffer of some type of pain in different intensities and frequencies. The effect of pain interferes in the daily routines of the affected people varying with its intensity, in some cases it can harm one in the daily activities linked with work, study and leisure, causing suffering until one's incapacity. Even in lower intensity pain influences in one's quality of life, in the case of university students' it could interfere in their academic efficiency.

According to Matheny et al. (2002) the adaptation process to the university life happens in an individual way, it could be a difficult task for some adolescents and young adults. The more and more demanding and competitive academic environment and the distance from the family for some are added up matters to the youths' daily tasks that need to be overcome. The students have different ways of adapting to these stress factors. While some adjust themselves actively to the daily academic pressures, making out of them opportunities of personal development, others show difficulties in this process, developing physical and emotional problems, using drugs and even abandoning the studies in the university. The way how each person adapts himself to a certain stress pattern is an individual process and it will depend on factors related to the overcoming resources that each person developed.

The overcoming resources of emotional, physical or financial order contribute in the adaptation process of the stressful factors imposed by the academic routine to some students. According to Diener (2000) the dissatisfaction with life can be an indicative symptom of stress, on the other hand the sensation contrary to the satisfaction towards life works as an important component for the well being. For Winkelman (1994) low standards of sleep, high anxiety degrees and somatic manifestations of pain are common symptoms in stress bearers.

The lack of mechanisms adaptable to stress can generate in the university students physical and mental exhaustion. These symptoms may cause the development of acute and chronic illnesses (HIROKAWA et al. 2002).

One of the most common somatic manifestations produced by the stress besides the insomnia is pain that can happen together with other symptoms. This problem affects several university students that feel different intensities of pain, sharp or chronic, in several parts of the body (BECKER JÚNIOR, 2003).

Pain is a complex problem that involves physiological mechanisms, behavioral and social factors, manifesting itself in different ways in each person. The pain perception, for instance, is more significant in the female gender, being a consensus the differences between men and women in the experience with pain. According to Berkley et al. (1999) women have a larger number of pain frequency and also in more corporal areas. Studies demonstrate differences among gender, pain and analgesia due to the gonadic hormones. For Fillingin (2004) the psychosocial aspects will also influence it, suggesting differentiated treatments for the treatment of pain according to the gender and psychosocial condition.

The physical exercises have demonstrated excellent results in the prevention, promotion and rehabilitation of health. Their effects on the organism have been more and more related in the scientific literature, although their association with the promotion of health was already for a long time recognized, since before the scientific and technological development in the western and oriental cultures, in the management of pain as well. They could even be considered an important non-pharmacological resource of proven action (HUARD, 1990; SHERMAN, K, 2005; LLACQUA, G. E., 1994; SMETTS et al. 2006). In the psychobiological aspect, we can point out the effect of exercises in the improvement of the sleep, humor upsets, memory, drug addiction, anxiety and depression (SAINTS, 2004). According to Mello et al. (2005) exercise promotes biochemical, physiologic and psychological alterations acting in the improvement of health.

The cognitive and behavioral techniques base their action in the modification or adjustment of the main determinant of behavior, that are the thought, perception, memory, affection and language. In the same way that all the patterns can be learned, forgotten and changed, the cognitive factors can also be modified. In the other hand the somatic techniques are concentrated interventions in the adjustment of corporal reactions as the muscular tension, heart frequency and breathing frequency. Also known as "techniques of relaxation" it is a component common in most of the programs of psychological preparation that seek the control of stress, of anxiety and the motor improvement (BECKER JÚNIOR & SAMULSKI, 2002).

Several studies reveal the applicability of the cognitive behavioral and somatic techniques in the management and decrease of the pain levels mainly in the chronic pain (HAYDEN et al. 2005; COOK, 2003; HIROKAWA et al. 2002). The main advantages are the easiness of its application, the expressive positive results in the treatment of chronic pain and the fact that it does not have common side effects as those of the medicated treatment.

Methodology

This study is an almost experimental research whose objective is to verify the effect of a program of physical exercises and cognitive behavioral and somatic techniques in university students. The sample was selected randomly from groups of students of a university, not taking into account their course. One was chosen as control and the other as experimental. The experimental group was submitted to the program of sixteen sessions that happened twice a week during two months. They had duration of fifteen minutes, being ten minutes of articulate mobility exercises in the several corporal segments and five minutes of cognitive behavioral and somatic techniques. The session happened in the classroom before the beginning of the class period. In the articulate mobility exercises breathing, posture and corporal conscience were emphasized. The cognitive behavioral and somatic techniques were of the nature of corporal relaxation, mental images of muscular tensions relief and an internal monologue to modify or to adjust cognitive aspects of thought, perception, memory and affection.

The control group was constituted of sixteen students and the applied of seventeen, the same instrument, the Inventory of Evaluation of Pain- IAD, validated by Becker Júnior (2002), was applied to both groups in two moments: before and after the application of the program. After the gathering of the data the same students were submitted to the non-parametric test of Wilcoxon and the groups were compared with each other in the periods before and after the test in order to verify the effect of the program.

Discussion of the results

The result of the statistical analysis of the data showed that there was no significant difference in the reduction of the intensity of pain in the group control between the periods before and after test, but the experimental group, represented in the table below, demonstrated significant reduction in the pain level.

Variable	Comparison	No. casos	%	Z	p
Intensity of Pain	**Before < After**	**10**	**66,7**	-2,695	0,007**
	Before > After	1	6,7		
	Before = After	4	26,7		
	Total	15	100,0		

Table 1. Comparison of the variable study among the periods before and after: Experimental Group.

Through the results of the non-parametric test of Wilcoxon for the experimental group it is verified that there is a significant difference among the results obtained in the moments before and after, only in the variable Intensity of Pain. It is observed that, in the experimental group, the intensity of Pain in the period after the test was inferior, in other words, there was a significant reduction in the degree of pain after the accomplishment of the program. (Z=-2,695;p=0,007)

This result demonstrates the positive effect of the program in the reduction of pain in university students, proving the possibility of this non-pharmacological intervention in the management of pain. It presented also the relationship between the practice of exercises and a smaller pain occurrence, confirming previous studies. Petroianu et al. (2000), while investigating a group with 100 diabetics, concluded that the practice of physical exercise was associated with a smaller headache frequency. Exercises of low intensity, as the ones applied in the study, and recreational physical activities helped to reduce the psychological stress and the pain in university students (HURWITZ et al. 2005). The duration and intensity of the physical exercises developed in the program, low intensity and short duration contradict the study developed by NETO MAGALHÃES & FRANÇA (2002), in which the experience with exercises in sessions of one hour twice a week is reported.

The results obtained are due to the combination between the exercises and the cognitive behavioral and somatic techniques, whose effects are not separately analyzed. The duration of the sessions together with the easiness of its application, as in the place, as in the period, turn the program into a low cost intervention modality that can improve the quality of the students' life.

Conclusions and recommendations

Through the results presented in the study one can conclude that the planned hypothesis was proven by the significant reduction of the intensity of pain in the experimental group. The decrease of pain can collaborate to the improvement of the university students' life quality as well as in possible repercussions in other spheres such as the academic efficiency, social integration and maybe the most important, the human development.

The implantation of programs that promote the life quality of university students' can be a profitable way of low cost for the development of a new university culture that seeks the valorization of one's condition of health in the overcoming of the daily difficulties.

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EFFECT OF A PHYSICAL EXERCISES PROGRAM AND COGNITIVE BEHAVIORAL AND SOMATIC TECHNIQUES ABOUT THE INTENSITY OF PAIN IN UNIVERSITY STUDENTS

ABSTRACT

The effects of physical exercises in the prevention, promotion and rehabilitation of health have been described by the scientific literature as an important factor in the promotion of people's life quality. The cognitive, behavioral and somatic techniques - TCCS, can also be a factor for the quality of human life. This study had as objective to verify the effect of a program of physical exercises and of TCCS about the intensity of university students' pain. Two groups took part in the investigation: a control group, with sixteen students and the other, an experimental group, with seventeen students. The groups were chosen randomly among the several divisions of students' of the university courses. The program consisted of two weekly sessions, with fifteen minutes each, of which ten minutes were of articulate mobility exercises and five minutes of TCCS, in a period of two months time, making a total of sixteen sessions. As an instrument of the research a questionnaire was applied in both groups in order to verify the existent relationships. This questionnaire evaluated the frequency and the intensity of pain before and after the application of the program. For the experimental group, through the results of the non-parametric test of Wilcoxon, it was verified that significant difference exists among the results obtained in the moments before and after the test in the variable Intensity of Pain. It is observed that, in the experimental group, the intensity of pain in the period after the program was inferior, in other words, there was a significant reduction in the intensity of pain after the accomplishment of the program. (Z=-2,695;p=0,007). The final results suggest a relationship between the program and the decrease of the pain intensity in the experimental group.

KEY WORDS: pain, exercise, university students.

EFFET D`UN PROGRAMME D`EXERCICIES PHYSIQUES ET TECHNIQUES COGNITIVE DE COMPORTEMENT SUR L`INTENSITE DE DOULER AUX ÉTUDIANTS UNIVERSITAIRES

RESUMÉ

L'action des exercices physiques avec un objectif préventif et dans le but de promouvoir et réhabiliter la santé ont été décrits par la literature scientifique comme un facteur important dan la promotion de la qualité de vie des personnes. Les techniques cognitives et de comportement et somatiques peut etre un facteur, aussi, un facteur pour la qualité de vie humaine. Cette étude a eu comme objectif vérifier l'effet d'un programme d'exercices physiques et des techniques cognitives et de comportement et somatiques dans le intensité de douleur des étudiants universitaires. Deux groupes ont été pris pour ce travail: celui de controle, composé de seize étudiants et celui composé de dix-sept étudiants, avec lequel le programme a été appliqué. Les groupes ont été choisis aléatoirement parmi les groupes d'éléves des différents cours de l'université. Le programme est composé de deux scéances par semaine avec la dureé de quinze minutes, dont dix minutes étaient destinés aux exercices de mobilité articulaire et cinq minutes de techniques cognitive, de comportement et somatiques dans une période de deux mois, em result seize scéances au total. Comme instrument de recherche les deux groupes ont répondu à un questionnaire por évaluer la fréquence et l'intensité de douleur avant et après l'application du programme pour vérifier les rapports existants. Pour le groupe d'experience, on a verifié, par les résultats du test non-parametrique de Wilcoxon, qu'il existe une diférence significative entre les résultats obtenus avant et aprés le test dans la variante Intensité de Douler. On a observé que dans le groupe experimental, l'intensité de douler dans la période post a été inférieur, c'est-à-dire, il y a eu une réduction très importante dans le intensité de douler, après l'accomplissement du programme (Z= 2,695; p= 0,007). Les résultats obtenus suggerent um rapport entre le programme et la diminution de l'intensité de douler dans le groupe experimental.

MOTS-CLE: douler, exercices, universitaires.

EFECTO DE UN PROGRAMA DE EJERCICIOS FÍSICOS E TÉCNICAS COGNITIVAS COMPORTAMENTALES Y SOMÁTICAS SOBRE LA INTENSIDAD DEL DOLOR EN ESTUDIANTES UNIVERSITÁRIOS

RESUMEN

El efecto de ejercicios físicos en la prevención de enfermedades, promoción y rehabilitación de la salud ha sido descrito por la literatura científica como un factor importante para la calidad de vida de las personas. Las técnicas cognitivas, comportamentales y somáti cas - TCCS, también, pueden ser un factor para la calidad de vida humana. Este estudio tuvo el objetivo de verificar el efecto de un programa de ejercicios físicos y técnicas cognitivas comportamentales y somáticas sobre la intensidad de dolor de estudiantes universitarios. Participaron de la investigación dos grupos: uno control, con dieciseis estudiantes y otro experimental, con diecisiete estudiantes. Los grupos fueron elegidos de modo aleatorio entre los distintos grupos de alumnos de los cursos de la universidad. El programa fue estructurado por dos sesiones semanales de quince minutos cada una, siendo diez minutos de ejercicios de movilidad articular y cinco minutos de TCCS, durante dos meses, con un total de dieciséis sesiones. Como instrumento de evaluación fue aplicado a los grupos un cuestionario que evaluaba la frecuencia y la intensidad del dolor antes y después de la realización del programa. Para el grupo experimental, a través de los resultados de la prueba noparametrica de Wilcoxon, se ha verificado que existe diferencia significativa entre los momentos pre y post test en la variable intensidad del dolor. Se puede observar, en el grupo experimental, que la intensidad del dolor ,después de programa, fue inferior, o sea, hubo una reducción significativa (Z=-2,695;p=0,007). Los resultados obtenidos sugieren la relación entre el programa y la disminución de la intensidad del dolor en el grupo experimental.

PALABRAS CLAVES: dolor, ejercicio, universitários.

EFEITO DE UM PROGRAMA DE EXERCÍCIOS FÍSICOS E TÉCNICAS GONITIVAS COMPORTAMENTAIS E SOMÁTICAS SOBRE A INTENSIDADE DE DOR EM ESTUDANTES UNIVERSITÁRIOS

RESUMO

O efeito de exercícios físicos na prevenção, promoção e reabilitação da saúde têm sido descrito pela literatura cientifica com um fator importante na promoção da qualidade de vida das pessoas. As técnicas cognitivas, comportamentais e somáticas - TCCS, também, podem ser um fator para a qualidade de vida humana. Este estudo teve como objetivo verificar o efeito de um programa de exercícios físicos e de TCCS sobre a intensidade de dor de estudantes universitários. Participaram da investigação dois grupos: um controle, com dezesseis estudantes e outro experimental, com dezessete estudantes. Os grupos foram escolhidos aleatoriamente entre as diversas turmas de alunos dos cursos da universidade. O programa consistia em duas sessões semanais, com quinze minutos cada, dos quais dez minutos eram de exercícios de mobilidade articular e cinco minutos de TCCS, num período de dois meses, totalizando dezesseis sessões. Como instrumento da pesquisa foi aplicado a ambos os grupos um questionário avaliando a freqüência e a intensidade da dor antes e após a aplicação do programa a fim de verificar as relações existentes. Para o grupo experimental, através dos resultados do teste não-paramétrico de Wilcoxon, verificou-se que existe diferença significativa entre os resultados obtidos nos momentos pré e pós teste na variável Intensidade da Dor. Observa-se que, no grupo experimental, a intensidade da dor no período após o programa foi inferior, ou seja, houve uma redução significativa na intensidade da dor após a realização do programa. (Z=-2,695;p=0,007). Os resultados obtidos sugerem uma relação entre o programa e a diminuição da intensidade da dor no grupo experimental.

PALAVRAS CHAVES: dor, exercício, universitários.