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Poniższy artykuł ukazał się w Sport Training In Interdisciplinary Scientific Researches, scientific editorial J. Szopa, T. Gabryś, Faculty of Management, Technical University of Częstochowa, Częstochowa 2004, 274-278.

HATHA YOGA EXERCISES EFFECT ON SELECTED ASPECTS OF PHYSICAL AND MENTAL FUNCTIONING IN OPINION OF CZĘSTOCHOWA UNIVERSITY OF TECHNOLOGY STUDENTS

Introduction

The literature studies indicate that people of different age and profession living in this day look for effective ways of coping negative consequences of unsettled balance between individual abilities and environment requirements. The interest in the methods of improving physical and mental immunity is common because most people have to live and act in stress conditions. It concerns not only employees but also students. One of the possible means of improving physical and mental functioning is hatha yoga. Its important element is the psychosomatic discipline, which comes with exercises of incomparable effectiveness. Those exercises affect not only the body structure, but also internal organs, glands and nerves, and that way keep the whole organism healthy. Moreover, the mind calms down, mainly because it receives more harmonious impulses from the body. Hatha yoga is a system of static physical exercises, which stretch and tone up muscles, joints, spine and the whole skeleton.

Individuals who undertake hatha yoga exercises declare their desire to support one's activity, deadline pressure resistance, but also they want the relaxation, the recreation, or self-attractiveness improvement. Those motives are complementary in most of the cases.

Selected aspects of physical and mental functioning in opinion of hatha yoga practicing students

Research problem, investigated sample, data, methods

The problem of this paper is the effect of hatha yoga exercises on selected aspects of functioning, such as: overall state of mind, concentration ability, self-attractiveness perception, stress resistance. The purpose is to present a part of results from the research on the group of hatha yoga practicing students.

The fundamental question concerns the relationship between the activity defined as hatha yoga and the changes in some aspects of physical and mental functioning. The research was focused on finding the answer to the question: what changes in functioning are observed by individuals who practice hatha yoga.

It is assumed from the literature studies and former research that the positive state of mind changes comprise of following categories: overall state of mind, spine aches decrease, self-attractiveness perception, concentration and self-control.

The research was carried out amongst 87 students of Czestochowa University of Technology. The group included individuals of similar age with average of 20,98 years (SD 0,37 years), practicing hatha yoga usually twice a week.

Results

Categories of changes brought about by hatha yoga exercises

Particular dimensions, where the changes for individuals practicing hatha yoga occurred are listed below.

Table 1. Categories of changes brought about by hatha yoga exercises for 87 practicing individuals (in scale 0-5)

Category of changes brought about by hatha yoga exercises	Average Positive state of mind changes	Standard deviation
A. Day and night's regularity normalization - better sleep	2,41	1,12
B. Overall state of mind improvement	2,67	0,87
C. Resistance to problems increase	2,02	1,06
D. Spine functioning improvement	2,90	0,90
E. Erotic attractiveness perception increase	2,18	1,22
F. Interpersonal attractiveness perception increase	2,26	1,05
G. Interpersonal relations improvement	4,31	0,67

source: own elaboration.

Table 2. Minimum and maximum values of investigated variables (in scale 0-5)

Values	A	B	C	D	E	F	G
MINIMUM	0	0	0	0	0	0	3
MAXIMUM	4	4	4	4	4	4	5
25% cases	2	2	1	2	1	2	4
75% cases	3	3	3	4	3	3	5

source: own elaboration.

A Day and night's regularity normalization - better sleep

B Overall state of mind improvement

C Problems resistance increase

D Spine functioning improvement

E Erotic attractiveness perception increase

F Interpersonal attractiveness perception increase

G Interpersonal relations improvement

Observed changes in following dimensions: interpersonal attractiveness (Figure 1) and spine functioning improvement (Figure 2) for hatha yoga practicing students are presented below in the graphic form.

Figure 1. Interpersonal attractiveness perception increase for hatha yoga practicing students (87 individuals)

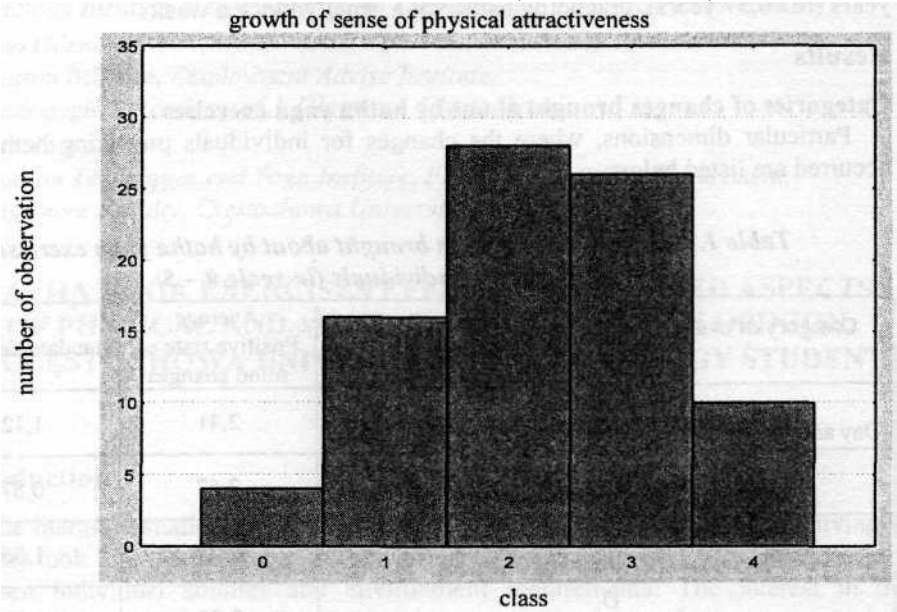
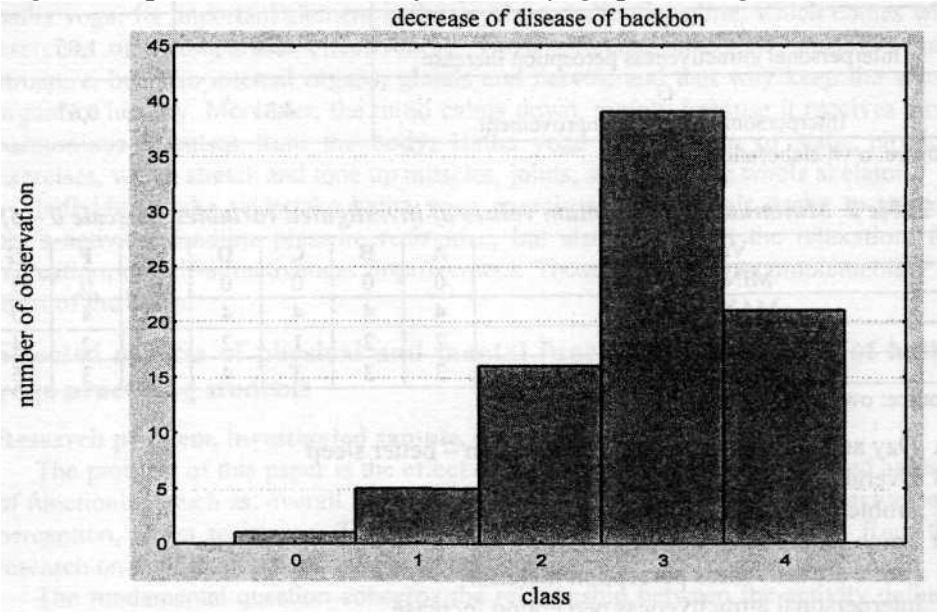


Figure 2. Spine aches decrease for hatha yoga practicing students (87 individuals)



Changes supporting better study and sport achievements brought about by hatha yoga exercises.

Presented results are of initial character, nevertheless they deserve an attention as they refer to mental realms, which are crucial for achieving goals both in study and sport.

The elements of functioning that were improved in opinion of investigated students include among other things the ability to concentrate on undertaken tasks.

Table 3. Category of changes by doing hatha yoga exercises

Category of changes brought about by hatha yoga exercises	Average Positive state of mind changes	Standard deviation
Concentration	3,02	0,88
Problem resistance	1,35	0,48
Emotional self-control	1,43	0,50
Self-observation	1,52	0,51
Daily scheduling	1,28	0,45
Self needs identification	1,34	0,47

source: own elaboration

The research indicates that the hatha yoga practice should be perceived as an important element of psychological processes of coping the stress, through the reduction and control of reactions. One of the effects noticed by hatha yoga practicing individuals is the greater internal stability perception and the lower unease experienced. It is followed by the concentration improvement and the ability to focus on the undertaken actions. It can be claimed, that this is the right attitude to achieve better results in different dimensions of activity, including study and sport. What the "right attitude" means in this context? To answer this question it is best to refer to the psychoneuroimmunology theory, which give the positive effect of physical activity the base of exact bilateral relationship between the mental life and somatics. This relationship is stated in the holistic approach to the human organism.

The values of correlation factors among those elements of functioning that were improved in opinion of hatha yoga practicing students are listed in the table below.

Table 4. Correlations of individual elements of functioning that were improved with hatha yoga exercises. Estimated correlation factors are material for $p < 0,05$

Variable	calm	concentration	problem resistance	self-control	self-observation	daily scheduling	needs identificatio
Calm	1,00	1,00	-0,07	-0,09	0,11	-0,07	0,15
Concentration	1,00	1,00	-0,07	-0,09	0,11	-0,06	0,15
Problem resistance	-0,07	-0,07	1,00	0,35	0,31	0,25	0,15
Self-control	-0,09	-0,09	0,35	1,00	0,12	0,35	0,27
Self-observation	0,11	0,11	0,31	0,12	1,00	0,07	0,24
Daily scheduling	-0,07	-0,06	0,25	0,35	0,07	1,00	0,10
Needs identification	0,15	0,15	0,15	0,27	0,24	0,10	1,00

source: own elaboration.

The observed changes towards greater emotional stability, that were brought about by hatha yoga exercises, can be described as a safety buffer for people, who suffer intensive distress in competitive environment. So called "undefined distress" is a symptom many people face, even without an external impulse, and apart from environment conditions and

undertaken tasks. For those individuals the activity that supports the keeping of internal stability is also a method of increasing the professional and scientific effectiveness.

According to the research done, students practicing hatha yoga notice its positive effect on various crucial elements of functioning. The advantageous changes refer to the very important cognitive process - concentration, which is a fundament of knowledge and skills gathering. Another change indicated by students is the improvement of interpersonal relations.

The effect of exercises, that was also pointed out by investigated individuals, is the better emotional self-control and the emotional stability support. Bearing in mind the literature studies, it has to be seen as a significant factor of the adaptation to changing environment and to new challenges.

The research, that was partly presented in this paper, is carried on with a greater sample of individuals. Initial results show that the empirical studies in this field are promising, yet difficult. For the interpretation of both already gathered results, and those of further research, the most proper method seems to be the cognitive-behavioural stress and coping theory of Lazarus. Two main types of coping processes results are mentioned there: first are immediate, and second, more distant in time, are called adaptive.

Among the adaptive results of stress coping there are: satisfaction, somatic health and remedial means for future [1, 4, 5]. This type of results is especially interesting for studying the hatha yoga exercises effect on selected elements of functioning, because it allows to carry on the research procedure (post hoc), leading to the outcome of empirical data.

Conclusion

On the basis of the gained results, it can be put into words that in opinion of Czestochowa University of Technology students the hatha yoga practice supports their physical and mental abilities and allows them to turn the personal potential talents into a good account.

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