



# The level of mood regulation in practicing hatha yoga in the background of people who do not practice this physical activity

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## Abstract

**Introduction:** The aim of the study was to analyze mood regulation in people practicing hatha yoga in the background of people who do not practice this sport activity. **Materials and Methods:** 96 Respondents from the Slaskie and Kujawsko-Pomorskie province took part in the research. The subjects were divided into two groups: practicing hatha yoga (N = 46) and control (N = 49). The analysis was carried out by means of a diagnostic survey using the standardized tool: Mood Control Scales. During the tests, the age and sex of the respondents were taken into account. **Results:** The average results of males and females exercising and not exercising hatha yoga in the Elevated Mood Scale are very similar to each other and range from 3.91 to 3.97 in women and from 3.87 to 3.91 in men. The results of men in the Depressed Mood Scale, as in the Elevated Mood Scale, differ slightly. However, a large difference, up to 0%, can be noticed by observing the results of women, 2.22 for exercising women and 2.79 for non-exercising women. **Conclusions:** Practicing hatha yoga has a beneficial effect on the level of mood regulation, contributing to the improvement of the mental state, the implementation of vital tasks and life goals and, consequently, reducing the negative mood and proper social functioning. Decreasing the level of low mood positively affects the quality of life. People with the ability to regulate the mood are less subject to mechanisms exacerbating the negative mood and, consequently, do not undertake the procedures leading to this mood. It can therefore be assumed that a bad mood is not treated in the category of failure, life catastrophe or a state without a way out. The conducted research allowed to show a greater tendency to reduce the level of low mood in women practicing hatha yoga. In the analysis, there were dependencies between the tendencies of mood regulation and gender. These dependencies were seen in women, whereas with men this did not play a significant role. However, there was no negative effect of the hatha yoga exercise on the level of mood.

**Keywords:** mood, mood regulation, hatha yoga, emotions, physical recreation.

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## INTRODUCTION

Mood is one of the essential elements of mental health, allowing for creative development, achieving life satisfaction, self-fulfillment and increasing self-esteem. During the course of a life, a person experiences various affective states that affect well-being, however it is important to distinguish emotions from mood. Emotions are short-term, intense, preceded by specific situations requiring action, with the activity of the autonomic nervous system with a clear beginning and ending, having cause and object [1]. This is a momentary confusion that appears quickly and without warning against the background of mood [2].

The mood, in turn, is an affective state of moderate intensity, blurred nature, devoid of an intense element of physiological arousal, arises slowly, and affects our perception of world [3,4]. Moods, as research shows, lower the threshold of stimulation of the accompanying emotions. A person in irritation will fall into anger faster because he interprets the situation in a way that leads to the survival of anger; he is also less able to graduate in reaction than a person in a neutral mood [5]. Negative mood makes us more attentive, less prejudiced, stereotype and more often in persuasion we choose arguments stronger than weaker ones, we issue negative opinions.

Being in a good mood, we are willing to help others, the quality of life is improved, we recall information about the positive charge more quickly, we treat the environment as favorable and do not pose difficulties, we often give positive opinions [6]. In addition, we more easily undergo the heuristic of accessibility by making decisions based on facts, experience, more often we start stereotypes, prejudices [7,8]. Mood plays a significant role in human life, decides about behavior, issued judgments, affects the provision of mental well-being and thus provides a sense of happiness exerting a significant impact on the quality of life and one of which is physical activity.

Physical activity affects not only physical development, but strengthens the nervous system [9], increases the ability to work mentally, allows to get rid of negative emotions, anxiety or depression, releases energy to take on new tasks [10-13]. One of the forms of physical activity taken regardless of age and physical fitness is hatha yoga. Yoga is an Old Indian educational, hygienic and healing system, which includes physical and breathing exercises, relaxation and hygiene recommendations [14].

Physical exercises of hatha yoga consisting in a slow entry into a given position (asana), a comfortable, stable duration in it and then on a slow, calm exit, positively affect the psychophysical functioning and coping with stress [15]. Based on symmetrical muscle work, they strengthen it, restore elasticity, elasticity, agility, thus ensuring proper posture, greater mobility in joints [16,17]. Asanas improve the human being by improving mental and emotional condition, increasing the awareness of own body, resistance to stress [18], that's why yoga has been very popular both in Western and Polish culture countries for years. Often it is preferred as a supplement to professional training in various sports and also recommended to people with various illnesses such as depression [19,20]. It is beneficial for mental health in older people [21].

There have been many publications about the impact of hatha yoga on the body. It is difficult to find information on individual tendencies to regulate the mood [22] and considerations connecting them with taking up the practice of hatha yoga, which is treated as sport activity available for everyone. Thus, the main goal of the study was to analyze the issue of the impact of hatha yoga exercise on the level of mood regulation in exercising people and compare the results with a control group that does not practice hatha yoga. The following research questions were posed: Do practitioners of hatha yoga have a greater tendency to regulate mood in comparison with non-exercisers? Is sex a factor that influences mood tendency? The hypothesis was assumed for the above research questions: The tendency of mood regulation is greater in people practicing hatha yoga. There are dependencies between the tendencies of mood regulation and gender.

## MATERIAL AND METHODS

### *Subject*

A total of 96 respondents took part in the survey. The subjects were divided into two groups: practicing hatha yoga (YG) (N = 46) and control (N = 49)(CG). During the tests, the age and sex of the respondents were taken into account. In the group practicing hatha yoga (N = 46), women (N = 33) accounted for 71.74%, and men (N = 13) accounted for 28.26%. The average age in the exercise group was 34.5 years, in women 35.5 years and in men 32.5 years. In the reference group (N = 49), women (N = 27) accounted for 55.10%, and men (N = 22) accounted for 45.90%. The average age in the non-exercise group was 26.5 years, in women 25 years and in men 28 years. The study was conducted in 2019 in the Slaskie and Kujawsko-Pomorskie provinces. All subjects in the study were informed of the testing procedures and voluntarily participated in the data collection.

### *Protocol*

The analysis was carried out by means of a diagnostic survey using a standardized tool: Mood Control Scales [23]. This tool is used to describe ways of thinking and acting in people experiencing pleasant or unpleasant feelings. It consists of 30 statements, 15 for the Mood Raising Scale (MRS) and another 15 for the Mood Depression Scale (MDS) using the 5-point Likert scale, in which the respondents indicated how often each of the treatments presented in the individual claims. The Likert scale included the following elements: 1-never, 2-rarely, 3-sometimes, 4-often, 5-very often. The questionnaire also includes an age and gender record.

### *Statistical Analysis*

For the registered indicators the following were determined: the average, and the standard deviation (SD). For statistical analysis, to verify difference between groups, t-test, Wilcoxon pair test and ANOVA method were used. For correlation analysis, the Spearman's test was used. The statistical significance was at the level of  $p < 0.05$ . All the calculations were done using Statistica 12.00.

## RESULTS

Split and comparison of the age of tested participants revealed that there were significant differences between the age of group of females that practice yoga and the control group, as well as for the two genders together. There were no significant differences between male groups (Table 1.)

Results of Mood Rising Scale (MRS) and Mood Depressed Scale (MDS) revealed similar tendency in the mean values for MRS and MDS scores in different groups, despite different numbers of participants grouped by gender. In case of control group (CG), there were noted maximal scores in MRS for female, so also in control group in general, which was not present in yoga practitioners group (YG). The highest values of standard deviation could be observed in control group of females and all participants for MDS (Table 2).

Analysis of participants results of both used scales by a categorical factor of being yoga practitioner or not, revealed that there are no significant differences between used scales for both male groups and all participant groups. However, significant differences were observed between results of female participants, comparing YG and CG ( $p = 0.01$ ), with special emphasis on difference in MDS. Male group statistical significance was far from the desirable value ( $p = 0.968$ ), but comparing all participants together, obtained p-value were closer to being significant ( $p = 0.103$ ) (Figures 1-3).

Participants from the male group, as well as the two genders together revealed negative correlation between their age and results of MRS. There were no significant differences for MDS and for female participants (Table 3).

Table 1. Differences in age of participants for each gender and both of them.

	YG mean age	CG mean age	t-value	df	p
male	32.46	28.00	1.206	33	0.2363
female	35.54	25.074	3.823	58	0.0003*
all	34.67	26.387	3.828	93	0.0002*

\* statistical significant difference at  $p < 0.05$

Table 2. Descriptive statistics for each gender and both of them for Mood Rising Scale (MRS) and Mood Depressed Scale (MDS).

Variable	Valid N	Mean	Minimum	Maximum	SD
YG female MRS	33	3.91	2.67	4.67	0.48
YG female MDS	33	2.22	1.40	3.87	0.60
YG male MRS	13	3.91	2.60	4.73	0.60
YG male MDS	13	2.44	1.67	3.67	0.69
CG female MRS	27	3.97	2.20	5.00	0.62
CG female MDS	27	2.79	1.67	4.47	0.80
CG male MRS	22	3.87	2.80	4.93	0.49
CG male MDS	22	2.42	1.20	4.20	0.93
YG MRS	46	3.91	2.60	4.73	0.51
YG MDS	46	2.28	1.40	3.87	0.63
CG MRS	49	3.92	2.20	5.00	0.56
CG MDS	49	2.62	1.20	4.47	0.87

Table 3. Results of Spearman Rank Correlation Test between age of participants and results of MRS and MDS. \* - statistical significance at  $p < 0.05$ .

gender	variable	age	MRS	MDS
males	age	-	-0.513*	0.100
	MRS	-0.513*	-	0.031
	MDS	0.100	0.031	-
females	age	-	-0.163	-0.006
	MRS	-0.163	-	0.014
	MDS	-0.006	0.014	-
all	age	-	-0.286*	0.022
	MRS	-0.286*	-	0.031
	MDS	0.022	0.031	-

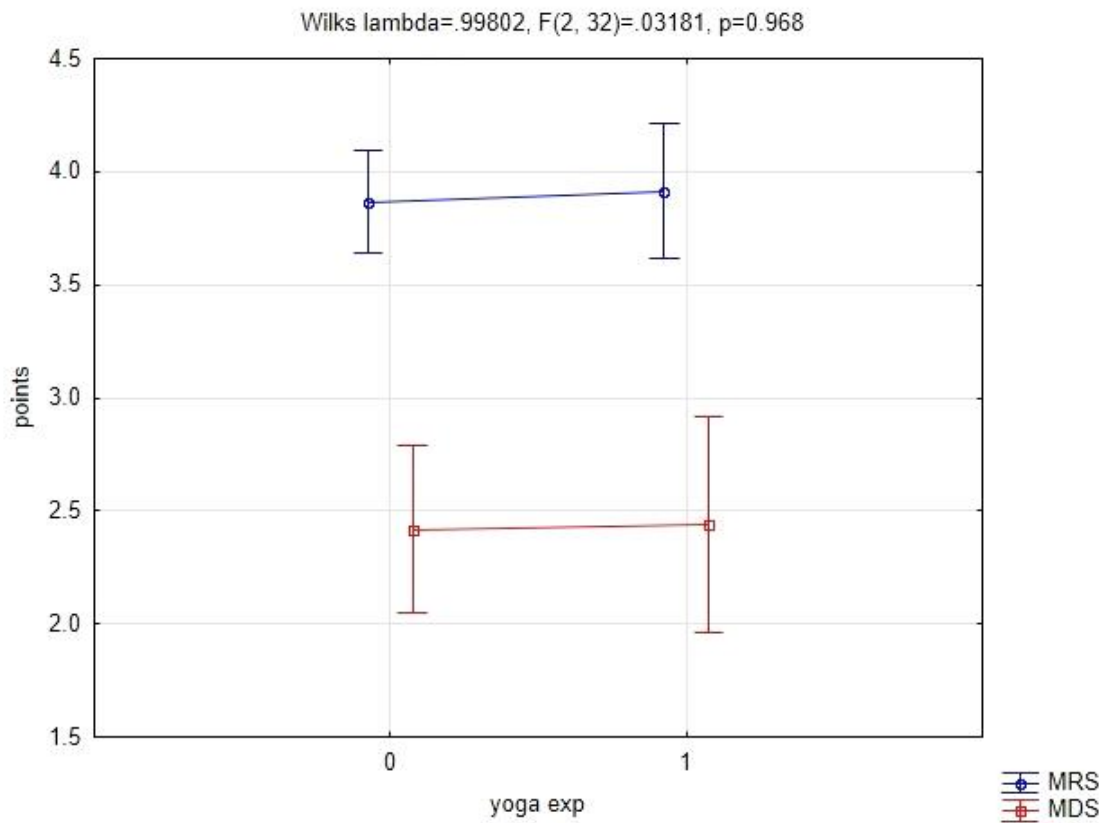


Figure 1. One-way ANOVA results of Mood Rising Scale (MRS) and Mood Depressed Scale (MDS) by a category of yoga experience for males from YG (1) and CG (0).

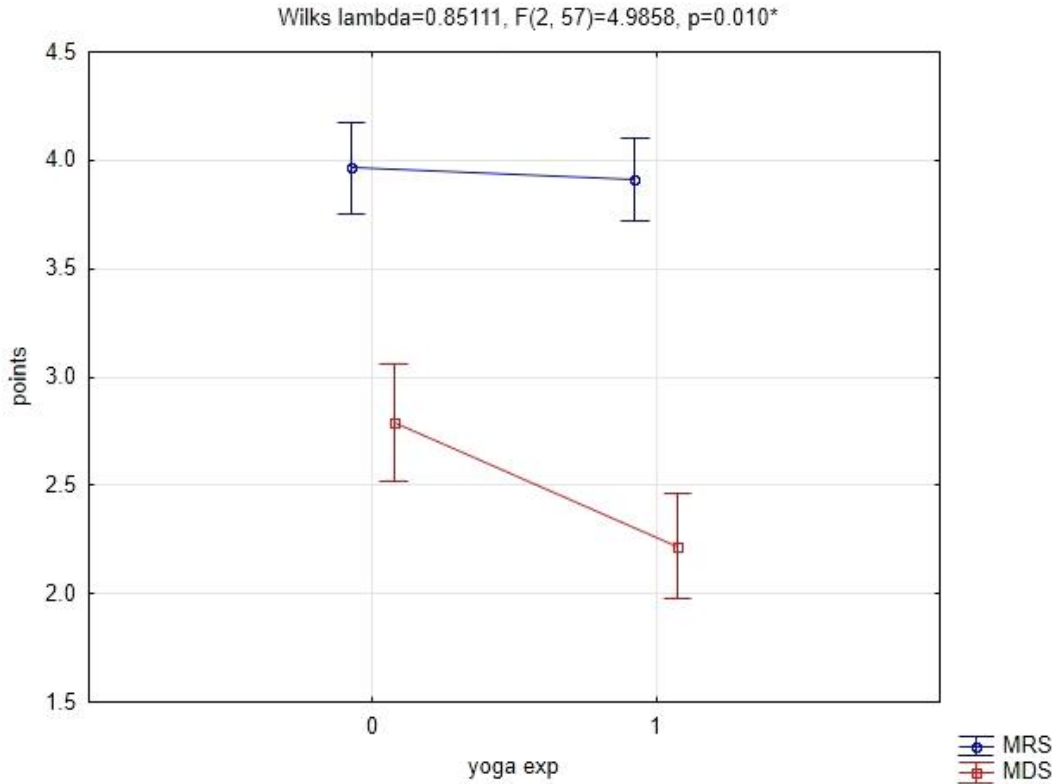


Figure 2. One-way ANOVA results of Mood Rising Scale (MRS) and Mood Depressed Scale (MDS) by a category of yoga experience for females from YG (1) and CG (0).

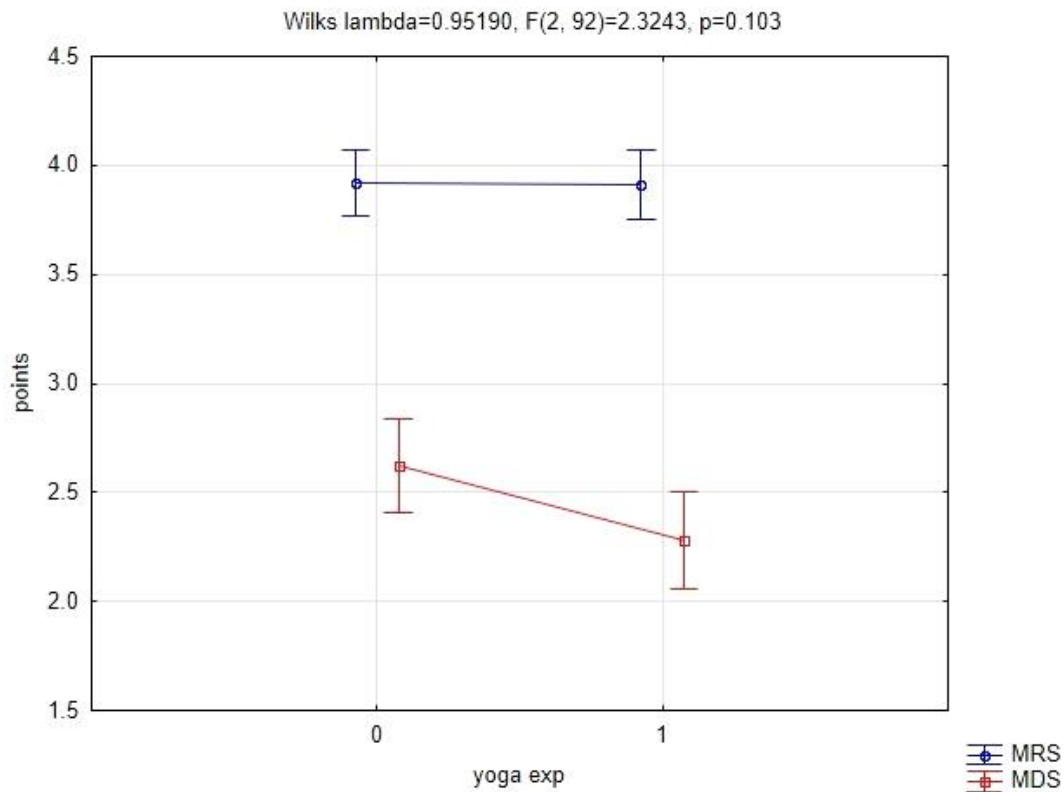


Figure 3. One-way ANOVA results of Mood Rising Scale (MRS) and Mood Depressed Scale (MDS) by a category of yoga experience for both females and males from YG (1) and CG (0).

## DISCUSSION

People are going towards increasing the positive mood, they are looking for it, avoiding the negative affective state using the so-called hedonistic self-regulation of the mood that explains the asymmetry of positive and negative mood. According to this theory, the impact of the negative mood is weaker and people try to get out of it by taking various actions. Which does not mean that they do the same every time. It is possible to activate them in activities that lower the mood, such as television programs, films or literature with a negative coloring. The Erber's mood regulation model has been an alternative [22], according to which the mood should be adjusted to the current situation, which means in many cases avoiding negative moods, and because there is a large number of divergent requirements for the proper mood, people avoid all moods by resetting them [23]. At the same time, it is effective to do difficult, highly involving tasks [24]. It can therefore be said that people are not always trying to improve their mood, they can take actions to lower or raise the mood, both positive and negative, which undoubtedly affects mental well-being. Therefore, to increase awareness of the importance of well-functioning mental well-being, various physical activities are applied.

Movement recreation which is the practice of hatha yoga affects the renewal of physical and mental strength of a individual indispensable for maintaining proper mental well-being, which is facilitated by efficient regulation of one's mood [25-27]. Positive emotions, skillful prevention of raising the level of low mood, improve sports performance [28]. It turned out that practicing hatha yoga mainly affects women in the lower intensity of the Depressed Mood Scale. The results obtained can be explained by the views they presented [15,27].

Despite various positive effects of practicing hatha yoga on the body and mind, present study results reveal that in comparison of yoga practitioners to non-practitioners, only the group containing females showed significant differences. This could partially be explained by the significant difference in the age range for both groups, as the mean age for female practitioners was larger by 10 years. This difference, also affects participants put together. Male participants have no statistical differences between age, but they did not reveal any significant differences between scores for both presented

scales. This could be due to lower sample of participants, which always affects results of significance. Putting two genders together, statistical significance improved, but in a formal way, those results reveal no significant differences. However, while tendency toward being significant rose with a sample size, we can conclude, that perhaps those findings could be positive when larger sample size is tested. Results of correlation coefficient computation reveal weak to moderate negative correlation between age and Mood Rising Scale. Which means that older participants revealed lower scores of MRS. But age does have not any exploratory value in terms of scores obtained for females.

It would seem that the greater emotionality of women, a stronger concentration on their own negative and positive mood [27] affects the tendency to undertake various physical activities increasing the positive and negative emotions. However, in women practicing yoga, there is a tendency to lower the level of negative mood, therefore taking measures to reduce the negative mood. This is important due to the known greater tendency of women to depression. This affects the calming of the body and mind, the easier state of relaxation and muscle relaxation. It is also important in difficult, problematic situations during which the feeling of anxiety could be toned.

We could only speculate about possible reasons of outcomes using other existing research a frame of reference to explain obtained values. The tendency to lower the level of negative mood is therefore a desirable regulation mechanism. The conducted research demonstrated a greater tendency to lower the level of negative mood in women than in men, which is consistent with well-known research results [28], in which men were shown to have less intense emotional feelings. It would seem that there are different motives for starting practicing yoga for female and males. As mentioned above, women tends to be more emotional and beside somatic health-related reasons, they join yoga classes for social [29] and psychological reasons [30]. Obtained results suggest, that males are driven toward yoga classes for different reasons, as Mood Scale scores were similar for both practitioners and non-practitioners. Correlation with Mood Rising Scales with age suggest that state of somatic age affects men positive emotion, but practicing yoga is not a factor here. Although this type of exercise for men does not play, as demonstrated by the above own study, a greater impact on the state of mood, they are often one of the elements of physical activity that improves exercise capacity and physical fitness without excessive load [31]. In addition, yoga practice also allows men to learn the limits of their own body, which is difficult to experience in competitive sports. It is a way to calm down, to live in harmony with each other and not to compete [32]. Kostorz, Skorupinska [33] showed greater intensity of mood regulation in practitioners of martial arts, as well as greater tendencies to regulate mood were noted in women. However, they did not observe any relationship between age and dependent variables. The Mood Regulation Scale was also used to study the mood of mothers of children with cancer. In this case, no significant differences were found between the group of mothers of healthy and sick children, which is affected by the temporal and situational stability of the style of mood regulation [34].

## CONCLUSIONS

By analysing the results obtained from this study, it can be concluded that practicing hatha yoga has a beneficial effect on mood regulation. Admittedly, this does not apply to the Mood Raising Scale, but it has a significant impact on reducing the depressed mood. Decreasing the level of low mood positively affects the quality of life. Such persons are less subject to mechanisms intensifying the negative. It can therefore be assumed that a bad mood is not treated in the category of failure, life catastrophe or a state without a way out. The answer to a bad mood is to look for people who like people, do things that would bring pleasure, not treat positive events as accidental works, appreciate the smallest things of everyday life, share your joy with loved ones.

The conducted research demonstrated a greater tendency to reduce the level of low mood in women practicing hatha yoga. The results obtained are in accordance with the findings of the author of the Scale of Mood Control [24]. In the analysis, there were dependencies between the tendencies of mood regulation and gender. These dependencies were evidenced for females. However, for males did not play a significant role. However, there was no negative effect of the hatha yoga exercise on the level of mood. Summing up, it can be stated that the results obtained in this work show that practicing hatha yoga as a form of physical activity may contribute to improving the mental state, fulfilling vital tasks and life goals, and thus reducing the negative mood and proper social functioning.

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