

Effect of yoga training on attention and anxiety preschool childrenMahrokh Moemeni^{1*}, Farzaneh Iranshahi², Nasrin Ramezani³, Fatemeh Amirabadi⁴ and Mahdi Ghahri⁵¹Department of physical education and sport sciences, south Tehran branch, Islamic azad university, Tehran, Iran²Department of physical education and sport sciences, parand branch, Islamic azad university, Parand, Iran.³alzahra university, Department of physical education and sport sciences, Tehran, Iran⁴Student of PHD in Psychology⁵MSC of Social Science Research***Corresponding author:** Mahrokh moemeni

ABSTRACT: The purpose of this study is investigated the effects of yoga as a non-competitive sports in anxiety of children 6 years preschool. Experts believe that due to non- competitiveness, this exercise in children, does not create anxiety. Because many sports are competitive and competition lies in their natural, they can be a source of anxiety. Also anxiety have cognitive affects, cause reducing the concentration, Confusion and reduced accuracy and is impaired Children's educational performance. Method is Semi-empirical and field, 307 preschool boys and girls from Tehran city choose randomly and then screening with CAT. 164 persons were diagnosed without anxiety and removed from the study. In yoga, 135 children remained were participated in the twelve-week training, based on three sessions of 30 minutes per week. Their anxiety levels before and after the exercises were compared to test their search hypotheses to reduce Interference of confounding variables and integration training, and implementation yoga techniques, One coach from each nursery was selected and trained under yoga training an hour for 10 sessions. CAT test were selected for the study of anxiety, for grading test results, were used revised child anxiety scale RCMAS, and to study accuracy, set of motor developing Orzetski Lincoln passing the Maze sub tests were selected. Research data were analyzed with statistical tests, Pearson correlation test, T-dependent test, three- factor mixed analysis of variance that include on factor between subjects(gender) and tow within subjects factors (anxiety and accuracy).($0/05 > P$). Results showed significant differences in anxiety in children before and after yoga has occurred. Their accuracy also has significantly different in tow stage at the before and after exercise. Wilkes Lambda test results showed a significant interaction effect of anxiety and accuracy and size of Eta = 0/85, respectively. But according to Wilkes Lambda test, the interactive effects of gender, anxiety, and accuracy was not significant. Overall results showed that yoga is non-competitive sports and was very effective to overcome anxiety in children and increase their accuracy. In addition, it has positive physiological and psychological benefits for children. The ultimate goal is that, when children are faced with a stressful situation can quickly be quiet and to achieve this it is essential that children daily do breathing exercises.

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Introduction:

Century is called the age of anxiety, in recent years alot of attention has been given to the issues of child psychology. Because, they are exposed to various stressors with great negative results. These results include a range of inappropriate physiological, psychological and cognitive effects.(1,9)

Exercise therapy has been suggest as a low cost and non-drug method for prevention, treatment and reduce mental health problems in children.(8)

Including methods of exercise therapy, Yoga breathing exercises in comparison with drug have been no side effects. While applicable to individual and group, due to the non-competitive does not produce anxiety. Movements, breathing exercises, effective steps to mindfulness, meditation, and ethical behavior, The main idea in Yoga thinking is control think fluctuations (18),

eight stages of yoga support strengthen focus and calm the mind (17), yoga exercise for children ages pre-school have been established on rearing practices of imagination and fantasy,(20) Yoga instructor can also give them little data in their understanding, about yoga and its effect on the reduction of anxiety, fear and daily agitated. The exercises depend on the children's creativity, physical fitness and strength of Innovation.(4) Peti Tell (2005) said Yoga breathing techniques are very important for relaxation. These techniques are effective for all children as well as for children with special problems, because this technique can be helpful to avoid the fear, aggression and anger. Although it seems, children are unfailling reserves of energy and restless, but often as adults are faced with a lot of mental and physical challenges, including stress, anxiety, depression, feelings of tire, etc. But yoga can help children to be quiet and focus. Yoga breathing

technique training is an important and effective tool that helps children manage anxiety, stress, depression, and increase lung capacity. (16) Matnz et al. (1990) were distinguished between the two aspects of anxiety.

Somatic anxiety, anxiety related to the physiological changes such as increased heart rate, increased respiration and peristalsis of the stomach. Cognitive anxiety usually is associated with somatic anxiety and related to anxiety thinking, including concern, self-doubt, failure imagining and humiliation. (16) Kalkes (1998) points out that cognitive anxiety has a negative relation with performance and as soon as cognitive anxiety increases, performance drops. (15) Hall and Zaglin (2002) and Kalks et al (2004), reported that long-term high-intensity aerobic exercise is a factor in the increased anxiety. (24)

Kertis (2000) reported that exercises effective in reducing anxiety (14), Brown et al. Showed that yoga is effective in reducing stress and anxiety in children. (20) karden Moudi et al. (2008) in their study have introduced yoga as a confounding factor that is suitable for children with blood diseases and tumors. (21) Christine Mkvist (2010) noted that children with cancer are experiencing symptoms of stress such as anxiety. He had participated children in individual yoga sessions and reported significantly reduce in their anxiety after performing yoga. (22) Linda J Harris et al. (2004) stated that the most common treatment to treat agitation of children's hyperactivity and attention in North America and Australia is meditation techniques mental stimulus. (19) TifaniFild (2010) has reviewed the effects of yoga on psychological conditions including anxiety, depression, pain symptoms, cardiovascular conditions, basic safety and tolerance. (17)

Faith Attain and Safari (1381) have investigated the effect of light, mediate and heavy exercise to reduce anxiety of 90 people with highest anxiety score. They showed, there are significant differences, in anxiety of people in heavy exercise group compared with two another groups. (12) In view of the adverse effects of anxiety on the physiological, psychological, movement and educational children's functions, it is necessary to search and offer an appropriate solution for that. Several researches refer anxiety reduction as a result of Yoga breathing exercises. Exercise therapy for anxiety is low cost, safe and useful. The present study is going to investigate impact of regular physical activity such as Yoga exercises on pre-school children's anxiety and accuracy.

Research method

Semi-empirical method is selected and the data it has collected to form field. Different tests were used to measure variables, to study the children's accuracy, one of motor development subtests Lincoln - Avzrsky as passing the labyrinth, to study the anxiety was used

CAT and test result was scored by Revised Children's Manifest Anxiety Scale(RCMAS).

Community and Sample

Community included all preschool children who were six years from kindergarten in Tehran, both boys and girls in school years 1390-91. The sample of 135 persons, including 68 males and 67 females, was selected.

Sampling:

With preparation the sampling frame, a list of names and addresses of kindergartens in Tehran were prepared based on municipal area. Using cluster sampling, were selected by random draw three regions (17, 2, and 14)from Tehran and five kindergartens from each area.

In the starting stage all children were examined with anxiety test. 139 children with highest anxiety score were divided into sample. Yoga exercise was presented to them. During the study 4 people were reduced from sample size.

Method:

After screening test, students without anxiety were removed from the study and to reduce interference confounding variables, integrate training, run Yoga technique, an instructor from each kindergarten was trained Yoga training under the expert for ten one-hour session.

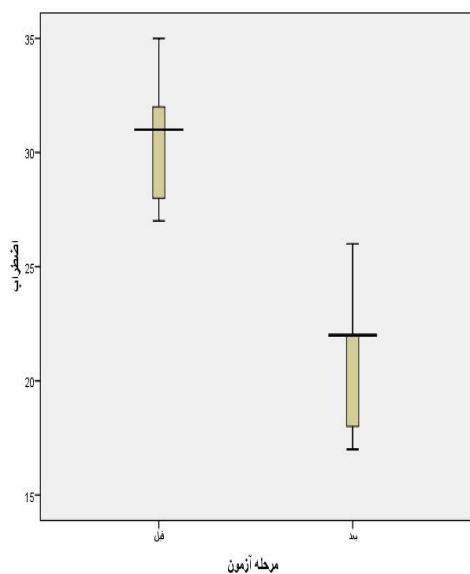
After this stage, children with anxiety were participated in twelve-week training-including three thirty-minute sessions per week- before starting the training, sample were test by the accuracy test. The results of the accuracy and anxiety test for each child were recorded based on norm tables. At the end of the last training session, anxiety and accuracy test for children again held. The results were recorded as before. To test the hypothesis, the results of both phases of the study were compared with each other.

Method of data analysis:

To analyze the data collected, were used both descriptive statistics index and inferential statistics index such as dependent T-test, Pearson correlation, analysis of variance.

Results and findings

In table1, children's anxiety was compared in both pre- and post-test and descriptive results indicate after Yoga training children's anxiety decreased.



To provide more descriptive information, measuring anxiety scores of participants in the two phases were classified in three categories in Table 1. Comparing the percentage of each categories in the post-test showed a decrease in children's anxiety.

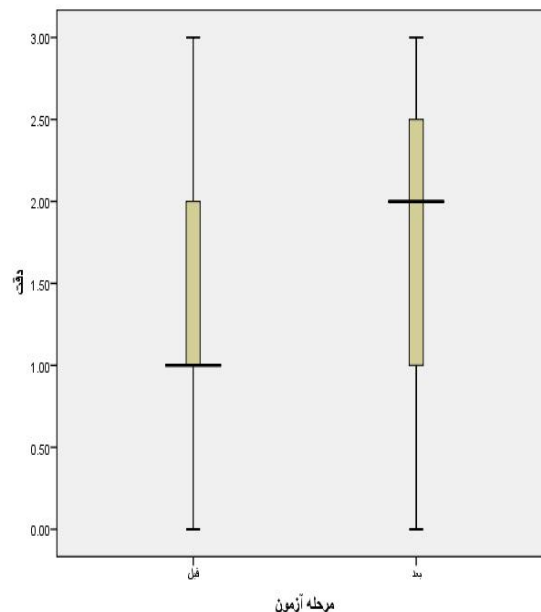
Table 1: Descriptive statistics anxiety before and after yoga

Dependent			SD	M	Variable	
T	d.f	P			Pre	Post
28	134	0/0001	2/67	30/7	Pre	Anxiety
			2/77	20/8	Post	
3/8	134	0/0001	0/853	1/47	Pre	Accuracy
			0/957	1/79	Post	

In table 2: The accuracy of children in pre-test and post-test were compared and the results showed that the accuracy of children was increased after receiving Yoga training.

Anxiety		Category
Post test	Pretest	
48/1	32/6	low
30/4	43	Average
21/5	24/4	high
100	100	total

Figure 2: accuracy box plot



To provide descriptive information, the result scores of measurement accuracy of subjects in two stages were classified in four categories in Table 2. Compare the percentage of children in each class, indicating increased accuracy in the post-test.

Accuracy		Category
Post test	Pretest	
25/2	10/4	high
40	39/3	Average
23	37	low
11/9	13/7	Careless
100	100	total

For data analysis, and determination how Yoga trainings effect on children's anxiety and accuracy, anxiety and accuracy scores in two stages were compare with each other with T dependent test.

Significant difference can be seen in pre-test and post-test anxiety scores (0001/0 = P, 28 = t). This means, Yoga has been able to reduce the average anxiety score preschoolers. Also there is significant difference in pre-test and post-test accuracy scores. (t=8/3, P=0/0001). This means that Yoga have increased mean accuracy score preschoolers.(Table3)

Table 3: Comparison of anxiety and accuracy before and after yoga

F	Effect size	sig	df	Mean square	Source
4/42	0/997	0/000	1	101577	intercept
5/1	0/037	0/024	1	11/890	Sex
			133	2/29	error

For further analysis of the data, determine the effect of yoga on anxiety and accurately that means to determine how many percent of anxiety and accuracy variance was determine separately by yoga training and how many percent of that was determine by yoga training interaction with children's gender, was used mixed analysis of variance test, that is a three- factor plan. In this plan, a factor between subjects was gender with two levels and 2 factors within subjects were anxiety and accuracy.

Result of multivariate test according to Wilkes Lambda test showed that the main anxiety affect, regardless of gender and accuracy, was significant, this means in terms of anxiety that there is significant difference between subjects before and after Yoga and yoga training effect on this difference was 99%. (table4)

The Wilkes Lambda test results revealed no significant interaction effect of gender and anxiety. With this test was determined also a significant interaction effect of anxiety and accuracy, that means Yoga could simultaneously affect the accuracy and anxiety of preschoolers. The size of this effect was 85%. (table4)

Wilkes Lambda test results are estimated the main effect of accuracy regardless of gender and anxiety was significant, effect size was calculated as 86%. That means the yoga is affected 86 percent of the accuracy variance accuracy. (table4).

To continue the analysis of multivariate data, Wilkes Lambda test results showed a significant interaction effect of gender and precision, Yoga and gender are simultaneously affect the accuracy but the estimated effect size (4%) is very small. (table4)

At the end, according to Wilkes Lambda test results, the interactive effect of gender and accuracy and anxiety was not significant. (table4)

Also the between subject factor test results indicated that the main effect of gender is significant and effect size was estimated to be 3%. (table5)

Table 4: Results of multivariate data and the size of the main and interactive effects of variables

Table 5: Test results between subjects factor

F-Test	The significance level	Effect size	Wilkes Lambda	EFFECT OF VARIABLES
1/41	0/0001	0/991	0/009	Anxiety
1/56	0/214	0/012	0/998	Anxiety and Sex
8/4	0/0001	0/864	0/136	Accuracy
6/05	0/015	0/044	0/956	Accuracy and Sex
7/6	0/0001	0/851	0/149	Accuracy and Anxiety
2/47	0/118	0/018	0/982	Accuracy, Anxiety and Sex

Discussion:

The review and analysis of hypothesis test results (about anxiety and accuracy), it can be concluded that the twelve-week workout yoga has positive impact on preschool children and has been cover much change in these two variables and has been reduce anxiety and increase their accuracy.

Reduction anxiety observed in this study is consistent with the results of the Moody and et. (2008), Faith Attain and Safari (1388), Christian McBride West (2010), Faye Martin (2011), Keila Richard (1997), that all, in the different ways, examined the effects of physical exercise on anxiety, especially yoga.

Linda J. Harrison (2004) has introduced Yoga meditation as a method of treatment suitable for ADHD children and knows that as a common procedure to treat turmoil of attention deficit hyperactivity in North America and Australia. (19)

In confirmation of her theory, this study reports a significant increase in children's accuracy level after doing yoga.

In previous research in not mentioned to the differences between boys and girls but in this study, we mentioned to it, but there isn't significant difference in anxiety after yoga between them. It means, Yoga affects equally boys and girls anxiety. Also there was no significant difference in accuracy rates of boys and girls after yoga. Kilarchard said: By engaging in yoga relaxation techniques, stress hormones (cortisol) decreases, resulting of that, consequences of stress in the body is reduced, blood pressure and heart rate decreases, anxiety, Depression, fatigue, asthma and insomnia passes. Also writes, Yoga helps person to more attention to surrounding natural environment. (6) The results of the present study are consistent with his views

because significant negative relationship between anxiety and accuracy was observed.

Jeremy West (2004) who studied the effects of Hatha yoga and African dance on stress, using saliva to measure cortisol of students, reported yoga and dance are reduced stress and its negative effects. (24)

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