

## **THE INFLUENCE OF MORNING EXERCISE ON THE EDUCATIONAL ACHIEVEMENT OF A GROUP OF ELEMENTARY FIFTH GRADE MALE STUDENTS IN MIYANDOAB CITY**

**Rogayeh Dadashpour<sup>1,2</sup> and \*Hamid Janani<sup>1,2</sup>**

<sup>1</sup>*Department of Physical Education, East Azarbaijan Science and Research Branch, Islamic Azad University, Tabriz, Iran*

<sup>2</sup>*Department of Physical Education, Tabriz Branch, Islamic Azad University, Tabriz, Iran*

*\*Author for Correspondence*

### **ABSTRACT**

The purpose of this research was to investigate the influence of morning exercise on the educational achievement of a group of elementary fifth grade male students in Miyandoab city. The statistical population of the study includes all students in the fifth grade of elementary school in Miyandoab city in the academic year 2013 to 2014. Using convenience sampling, two fifth grade classes that had the same teacher were selected as the sample (70 participants) and were randomly assigned to an experimental group (n = 35) and a control group (n = 35). After obtaining permission from the Ministry of Education, the subjects primarily participated in a pre-test to assess the lessons of history, Persian spelling, math, geography, and science. Afterwards, the experimental group participated in a morning exercise program, before entering the class for 8 weeks and 5 days a week. After completion of the morning exercise program, a posttest was given to the participants on history, Persian spelling, math, geography, and science. Descriptive statistics (frequencies and percentages) were used to describe the variables and the Mann-Whitney U test was used to compare the statistical difference between pre-test and post-test in the experimental group and the control group. The result showed that a group of elementary fifth grade male students in Miyandoab city in the experimental group is significantly higher than the control group ( $p < 0.01$ ). Also the result indicated that the amount of educational achievement of a group of elementary fifth grade male students in Miyandoab city in the experimental group on Persian spelling, math, history, and geography was significantly higher than the control group, but there is no significant difference between the educational achievement of science in the experimental and control group.

**Keywords:** *Students, Educational Achievement, Morning Exercise*

### **INTRODUCTION**

Although technology and modernization of life and the expansion of urban life and the culture of apartment living have brought about convenience and welfare for modern man in many respects, they have been associated with reduced mobility and physical activities and have affected the physical health and cardio-vascular agility. City life has limited the natural cycle of life and especially movements. Due to the lack of movement, modern man is exposed to diseases such as hypertension, hyperlipidemia, and side effects like obesity, bone deformities, muscle weakness, and general weakness when facing diseases. Physical education in schools -with organized physical activity and movement- can be a very important factor in the health maintenance and the development and growth of health physical skills. With the development of physical activities, physical education brings about personality growth that is dependent on team activities (Peyravi, 2005). Nowadays, exercising and physical activities are a necessity in daily routines in order to gain health and well-being (Doosti, 2010). Since during morning exercise, one breathes the fresh morning air, it is more useful than other exercises in terms of various functions of body systems (Rajoev, 2010). Morning exercise improves mental health and social functioning, decreases physical complaints, anxiety, depression, mental pressure, and creates a sense of relaxation (Dalandar, 2011). Morning exercise affects educational achievement, interest in other lessons and learning speed (Peyravi, 2005). Morning exercise before school activities can be an important factor in creating happy, healthy, and fresh students. Furthermore, it can cause physical and mental health maintenance (Doosti,

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2010). One way to develop a systematic activity is doing morning exercise, which has been included in the morning assembly of schools, in accordance with physical education programs of schools, in order to promote the mental and physical health of the students. However, participating in them leads to underachievement, when some students resist doing it or they lose concentration when a lesson is being taught. Sometimes, these thoughts are so serious that the time of physical education course in schools is allocated to other courses, especially when the exams are approaching. Therefore, such a mindset has led to ignoring other positive effects of regular physical activity, since it is thought that it will result in underachievement and morning exercise has turned into an ignored and worthless activity (Jadidian, 2011). Today, underachievement is one of the concerns of families and education practitioners. Among the topics of interest to the experts of education is to find the necessary and effective situations and facilities leading to academic success and achievement. Lack of success in education is an underlying reason to personal and social problems and a hindrance to the aims of educational system. Researchers have identified various factors that are important in educational achievement of the students. Factors such as rules, cultural context, the attitudes toward education, income, parents, etc. affect the success and the failure in a society. The existing resources show that education is generally under the influence of five factors including prevalence, plan, equipment and educational environment; each of these factors have characteristics that can affect learning and educational achievement in different ways (Seyf, 2008). Educational achievement and the issues related to it are one of the major concerns of educational system of countries; since political, economic, social, and cultural authorities and decision-makers around the world consider the development and achievement of their society in the development and achievement of their educational system. This development and achievement is practiced through school and class educational achievement. However, the studies carried out on the educational status of students around the world indicate that the lack of student and teacher achievement of educational aims (underachievement) is still one of the serious challenges of educational systems around the world (The Ministry of Education). Among many factors related to this educational insufficiency, we can mention the failure of schools to establish and strengthen the scientific spirit, inappropriate choice of majors and personal characteristics of the students (Karimi, 2005). There are many determining and effective factors in the educational achievement of the students. These factors are divided into various factors inside the educational system and factors outside the educational system (Kheirandish, 2013). Generally, factors that affect student achievement can be divided into three categories: a. Physiological factors: these factors include learner's physical variables. B. Psychological factors: these factors include psychological variables such as intelligence, aptitude, etc. C. Environmental factors: these factors include exogenous variables, family variables and variables related to the school environment (Ragers, 1982; Eschenfagen, 1994). Peyravi's findings (2005) indicate the effect of morning exercise on the strengthening of social relationships, interest in other courses and an accelerating the speed of learning. The research results of Trembly et.al (2000) showed that regular physical activity increases the sense of self-esteem and self-confidence and the development of mental functions in teenagers. Therefore, it improves their learning and educational potential. The results of California's Education Department (2002) indicated that regular physical activity has a positive and significant effect on achievement in math and spelling courses. Roozbehani (2014), Jadidian (2012), Gilinn Sky (2010), Trudeau *et al.*, (2010), Kris Jansson *et al.*, (2010), Chomtitz *et al.*, (2009) and Chomtitz *et al.*, (2006) found in their research that there is a positive and significant relationship between physical activity and student's educational achievement. The results of Sigfusdotter *et al.*, (2007) indicated that the students, who participate in physical activities, have higher cognitive functioning and higher educational achievement. The results of Douglas *et al.*, (2000) showed that physical activity has a slight negative effect on educational achievement. The results of Cardin, Almond, and Grottos (2001) showed that physical stress resulting from participation in sports has a negative impact on athlete students' academic status. The results of Loess (2003) and Hassanpour and Naderi (2008) suggest that there is no significant relationship between physical activity and educational achievement. The result of Arises's (2003) research suggest that athlete students will have many difficulties in their academic performance and the combination of sport and school will result in reduced

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test scores of the students. Summarizing the background literature revealed that in some studies, there is a positive and significant relationship between participation in sport activities and educational achievement; while in other studies, this relationship does not exist or a significant negative relationship is reported. Therefore, based on contradicting results of previous studies regarding sports activities and educational achievement, the researcher is trying to find out whether doing morning exercise affects educational achievement of a group of fifth grade male students in Miyandoab city?

**MATERIALS AND METHODS**

**Methodology**

The present study is quasi-experimental in terms of outcomes, functions, and methods. The statistical population of the study includes all students in the fifth grade of elementary school in Miyandoab city in the academic year 2013 to 2014. Using convenience sampling, two fifth grade classes that had the same teacher were selected as the sample (70 participants) and were randomly assigned to an experimental group (n = 35) and a control group (n = 35). After week 8, posttest was taken from the experimental and the control group. Research instruments include assessment tests on history, Persian spelling, math, geography, and science. The tests were assessed as very well (20-17), good (15-17), acceptable (12-15) and requiring more effort (less than 12). The validity of pre-test and posttest measurement instruments were confirmed by several formal teachers. The reliability of the measuring instrument was calculated by Richardson code. The reliability coefficients were 0.82 for history, 0.86 for dictation, 0.75 for the math, 0.87 for science, and 0.84 for geography.

After obtaining permission from the Ministry of Education, the subjects primarily participated in a pre-test to assess the lessons of history, Persian spelling, math, geography, and science. Afterwards, the experimental group participated in a morning exercise program, after and before entering the class for 8 weeks and 5 days a week, but the control group did not have a morning exercise program. After completion of the morning exercise program, a posttest was given to the participants on history, Persian spelling, math, geography, and science. Descriptive statistics (frequencies and percentages) were used to describe the variables and the Mann-Whitney u-test was used to compare the statistical difference between pre-test and post-test in the experimental group and the control group. Statistical analysis was performed using SPSS software at a significant level of 0.05.

**RESULTS AND DISCUSSION**

**Results**

To examine the significant difference between the educational achievement of a group of elementary fifth grade male students in Miyandoab city in pre-test and post-test, Mann-Whitney u-test was used. Given that the value of u is equal to 245 and at significance level of 0.01, it is considered as null hypothesis, we conclude that a group of elementary fifth grade male students in Miyandoab city in the experimental group is significantly higher than the control group.

**Table 1: Mann-Whitney U test for compare of educational achievement in experimental and control group**

		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	Asymp. Sig. (2-tailed)
<i>Educational Achievement</i>	Control Group	35	25	875	245	-4.789	0.000
	Experimental Group	35	46	1610			

To examine the significant difference between the educational achievement on history, Persian spelling, math, geography, and science in Miyandoab city in pre-test and post-test, Mann-Whitney u-test was used.

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Since the level of significance in Persian spelling, math, history, and geography is respectively less than 0.01, the null hypotheses related to these lessons were rejected. We conclude that the amount of educational achievement of a group of elementary fifth grade male students in Miyandoab city in the experimental group on Persian spelling, math, history, geography was significantly higher than the control group. However, the level of significance of science is more than 0.05; therefore, the null hypothesis is confirmed and we conclude that there is no significant difference between the educational achievement of science in the experimental and control group.

**Table 2: Mann-Whitney U test for compare of educational achievement in curriculum**

<i>Educational Achievement</i>		<b>N</b>	<b>Mean Rank</b>	<b>Sum of Ranks</b>	<b>Mann-Whitney U</b>	<b>Z</b>	<b>Asymp. Sig. (2-tailed)</b>
<i>Persian Spelling</i>	<b>Control</b>	35	27.07	947.50	317.50	-3.649	0.000
	<b>Experimental</b>	35	43.93	1537.50			
<i>Math</i>	<b>Control</b>	35	28.36	992.50	362.50	-3.179	0.001
	<b>Experimental</b>	35	42.64	1492.50			
<i>History</i>	<b>Control</b>	35	28.41	994.50	364.50	-3.071	0.002
	<b>Experimental</b>	35	42.59	1490.50			
<i>Geography</i>	<b>Control</b>	35	23.26	814	184.0	-5.302	0.000
	<b>Experimental</b>	35	47.74	1671			
<i>Science</i>	<b>Control</b>	35	38.91	1362	493.0	-1.530	0.126
	<b>Experimental</b>	35	32.09	1123			

**Conclusion and Discussion**

The results showed that the educational achievement of a group of elementary fifth grade male students in the experimental group was significantly higher than the control group. In other words, morning exercise has a positive and significant effect on the educational achievement of the students. The results of this study were compatible with the results of Peyravi (2005), Trembly *et al.*, (2000), Roozbehani (2013), Jadidian (2012), Glyn Sky (2010), Trudeau *et al.*, (2010), Kris *et al.*, (2010), Chomtiz *et al.*, (2009) and Coe *et al.*, (2006) and Sigfusdotter *et al.*,

However, the results are incompatible with the results of Douglas *et al.*, (2000), Cardin *et al.*, (2001), Lessie *et al.*, (2003) and Hasanpoor (2008). The reason for this incompatibility resides in the difference between the samples of these researches. Given that 15% of the population of the country is composed students, their educational achievement, along with their physical-psychological health guarantee a thoughtful, dynamic, and creative society. Morning exercise, as a regular and inexpensive approach, can improve the morale, alacrity, and cognitive abilities of the students. With its positive mental and psychological effects on the students, morning exercise makes the students fresher and more confident and decreases their anxiety and depression. Furthermore, it can physically enhance their physical fitness and can improve their morale and motivation and as a result, their educational achievement (Jadidian, 2012).

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