

*Full Length Research Paper*

# **The examination of the link between academic and sports performance in competing rhythmic gymnasts in secondary school**

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**This study, investigating whether sports has a positive impact on students' academic life' aims to compare the grade point averages of competing rhythmic gymnasts and 7th grade students not engaged in any branch of sports. The study was conducted with female secondary school students (n=80). The study group was divided into two: The first group (n=40) comprised top 40 rhythmic gymnasts (height: 138.7±2.04 cm and weight: 28.7±1.11 kg) who participated in the Turkish National Rhythmic Gymnastics Competition while the second group (n=40) consisted of students who do not do any sports (height: 145.6±4.44 cm and body weight: (38.9±5.04 kg). The comparison was made based on both groups' general point averages (GPA) at the end of the year. Mann-Whitney U test was used to compare the point averages as part of statistical analysis. At the end of the study, it was found that the academic achievement of the rhythmic gymnasts was statistically significantly higher than the sedentary group (p<0.05). In line with the results of the study, the comparison of rhythmic gymnasts with non-sports students revealed that rhythmic gymnasts had better scores in terms of academic achievement. This finding can stem from the fact that regular sports activities enhance mental development in addition to physical development or help to prepare a much more efficient work plan.**

**Key words:** Academic achievement, sports achievement, rhythmic gymnastics.

## **INTRODUCTION**

Primary school is an educational period for children aged between 6 and 13 (Turkish Ministry of Education, Legislation, 2018). As primary education covering a period of fastest growth and body development in children is of great importance in terms of education, it affects their physiological development stages and emerges as critical processes in children's body

development and social life (Özsaker, 2001). Developed countries attach great importance to sports and promote children's participation in sports and physical education programs starting from early ages. It is stated that children encouraged to do sports experience a healthier socialization process and become more successful throughout their lives (Aydoğan et al., 2015). Sports

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**Table 1.** Comparison of height and weight in rhythmic gymnasts and sedentary children.

Parameter	Group	Mean±Standard deviation	p
Weight (kg)	Sedentary (n=40)	38.9±5.04	0.00*
	Rhythmic Gymnastics (n=40)	28.7±1.11	
Height (cm)	Sedentary (n=40)	145.6±4.44	0.00*
	Rhythmic Gymnastics (n=40)	138.7±2.04	

\*p&lt;0.05.

**Table 2.** Comparison of academic achievement in rhythmic gymnasts and sedentary children.

Group (n=80)	Academic Achievement Mean±Standard deviation	p
Sedentary (n=40)	86.1±0.83	0.00*
Rhythmic Gymnastics (n=40)	94±0.59	

p&lt;0.05

training beginning in school ages allows children to have a planned life starting from early years. With attending school, athletes' responsibilities gradually increase. They have to continue both school and sports education. In this period, children and their families need to establish a more planned order. It is important to ensure that they plan school, training and homework hours in a day and maintain this order according to this plan. Rhythmic gymnastics is an artistic and aesthetic sports that requires beginning training at very young ages, earlier specialization before bone maturation, intensive training per week, high level of technical elements performed, lots of repetition and different abilities (Bobo-Arce and Mendez-Rial, 2013). A good gymnast needs to receive special training for improvement, which also requires heavy training and a long preparation period (Douda et al., 2008). Several sources state that starting age for rhythmic gymnastics is 6-8 (Di Cagno et al., 2008). The reason for this may be that high efficiency in this branch requires a period of 10-12 years (Bulca and Ersöz, 2004) and flexibility as the most important motor ability depends on age to a great extent (Elibol, 2000). Rhythmic gymnasts start to take part in competitions beginning from novice category at the ages of 7-8. It continues in child category for ages 9-10 and cadet category for ages 11-12. Secondary school is a decisive period for academic achievement. In this period, children set a goal for high school entrance exam and focus on achieving this goal. Quality education received in secondary school is the most significant step for high school and university period.

This study was conducted with successful athletes who were competing in rhythmic gymnastics branch and advanced to cadet category; they continued this sport

along with school since early ages and were among the top 40 athletes in the Turkish National Championship. Investigating whether or not sports has any positive impact on academic life, the study aimed to compare the grade point averages of rhythmic gymnasts and children who were not engaged in any sports branch.

## MATERIALS AND METHODS

The study was conducted with 80 girls in 7<sup>th</sup> grade, in the age group of 12. The study group was divided into two; rhythmic gymnasts and sedentary group (Table 1). The first group consisted of athletes who were doing rhythmic gymnastics for 5.96±1.2 years, participated in Level 1 and 2 National Rhythmic Gymnastics Championship competitions held in different times in 2018 academic year and ranked among the top 40 athletes in the Turkish National Rhythmic Gymnastics Championship after 2 phases. Sedentary group comprised female students who were in the same age group and did not engage in any sports branch. Academic achievement scores were assessed based on the students' general point averages at the end of the 2017-2018 academic year (Table 2). The students' grades were obtained from the report cards given at the end of the year, with the consent of their parents. Mann-Whitney U test was performed for comparing the point averages as part of the statistical analysis of the two groups' academic achievement. Level of significance was accepted as p< 0.05.

## FINDINGS

Table 1 indicates height and weight of rhythmic gymnasts and non-sports students in the same age group. The result of statistical analysis revealed that weight and height were significantly lower in the rhythmic gymnasts compared to the non-sports students. Table 2 indicates the end-of-year GPA of the rhythmic gymnasts and non-

sports students in the same age group. The result of statistical analysis indicated that there was a significant difference between the GPA of children who were regularly engaged in rhythmic gymnastics and GPA of children who did not do any sports and only participated in school activities. It was seen that rhythmic gymnasts had higher GPA than sedentary children at the end of the year.

## DISCUSSION

This study compared academic performance of rhythmic gymnasts who competed in the Turkish National Rhythmic Gymnastics Championship and students not doing any sports at secondary school. It was found that rhythmic gymnasts had statistically significantly higher academic achievement compared to the sedentary group ( $p < 0.05$ ). It was also found that (Table 1) weight and height were significantly lower in rhythmic gymnasts than non-sports students. It can be said that physical measures are the return of regular training beginning from early ages. According to the results of the study, rhythmic gymnasts had better grades in their academic performance compared to non-sports students (Table 2). The reason for this can be that regular sports activities enhance mental development in addition to physical development (Yarım, 2014). Furthermore, it can be claimed that the difficulty of managing both sports and academic life is overcome thanks to a planned and regular life, which brings success to athletes in both areas. Regular physical activity supports people's development with physical and physiological effects such as increasing bone mineral density, strengthening muscles and joints, maintaining musculoskeletal system, controlling body weight, reducing fat mass and improving heart and liver functions (Orhan, 2015). In their study in 2018, İbis and Aktuğ (2018), assert that sports play a major role not only in health and physical development but also in attention deficit and improved academic performance in children. Ishira et al. (2018) state that physical fitness gained with regular physical activity improves brain functions and is positively associated with academic performance at the same time. Another study supporting this was conducted in Canada. The study found that the time spared for physical activities was positively associated with the time allocated for reading among school children (Feldman et al., 2003). In their studies, Singh et al. (2012) and Morita et al. (2016) also supported this finding by asserting that physically more active students had also higher academic achievement. In another study, Coe et al. (2006) stated that students who took physical education class had higher school grades than other students although no significant relationship was found between academic achievement and students taking physical education lesson.

Apart from primary school children, similar studies were also conducted on university students. In a study investigating whether there was a statistically significant difference between academic performances of the top and bottom athletic teams in the National Collegiate Athletic Association, Bailey (2017) indicated that the top athletic teams also performed better academically compared to their bottom counterparts.

In today's educational approaches, children concentrate on inactive activities mostly. Many children are directed to activities improving academic performance such as courses, homework, private lessons, etc. Families can see academic achievement as the primary criterion and take into consideration this goal in choosing activities for their children (Bolat, 2016). Restricting participation in sports may lead children to other activities as they have more leisure time. The studies analysing weekday and weekend activities indicate that watching TV and playing computer games stand out among the most preferred activities (Orhan, 2015). Sharif and Sargent (2006) claim that the more children watch TV the greater the decrease in academic performance.

However, as is clearly seen in our study, including sports activities in activities outside school can have more positive impacts on academic achievement. There are several factors affecting participation and continuing sports. Children may attach importance to concepts like game, health, status or performance (Altıntaş et al., 2014). Thus, promoting participation in several sport branches including rhythmic gymnastics and encouraging children for sports are critical in terms of healthy development, academic achievement and raising individuals who are happier, more successful and productive in their future lives.

## CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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