

UDC 316.46

DOI: 10.61727/ssspj/1.2024.95

## Research issues in the psychological preparation of adolescent gymnasts: A literature review

**Nigar Eyvaz Yusiphova\***

Postgraduate Student

Baku State University

1148, 23 Akademik Zahid Xəlilov küçəsi, Baku, Azerbaijan

<https://orcid.org/0009-0009-0871-9873>

**Abstract.** In the article, the researcher conducted on the psychological preparation of adolescent gymnasts is analysed and systematised. Additionally, the factors that play an important role in the psychological preparation of gymnasts are discussed and psychologically interpreted. In the article, the author emphasises the importance of the individual psychological characteristics of gymnasts in preparing them for the competition. Furthermore, it is noted that the gymnast-coach relationship and their interactions with peers have a significant impact on the psychological preparation of gymnasts. This, in turn, leads to a change in the psychological climate of a team. According to literature, psychological preparation, or psychological skills training as it is also called, constitutes part of the whole process followed by an athlete during their athletic preparation. Weinberg & Williams suggest the best time to implement such a program is off-season or preseason. Psychological preparation nowadays constitutes an integral part of any sports programme aimed at preparing athletes for the achievement of high performance. Indeed, the importance of psychological skills training in developing athletic performance is widely acknowledged, and the number of athletes implementing psychological training strategies is increasing. Success in the psychological preparation of athletes can be achieved by having the right influence on their psyche. It is impossible to train athletes successfully without considering the psychology of the individual and the team. This is especially important in the field of gymnastics

**Keywords:** athlete; gymnast; psychological preparation; competition; social relationship; interpersonal relationships

## INTRODUCTION

Studies on the problem of psychological preparation of athletes can be classified in various ways. However, before going on to classify them, several points should be noted. First of all, gymnast psychology is a branch of sports psychology. Research conducted in this field focuses on the psychological characteristics of gymnasts, their psychological preparation etc. Such issues can be included in the general plan. Whether it is a football player, track and field athlete, or other types of sports, it is possible to find psychological commonalities for a specific type of sport.

Second, gymnastics is a sport that combines gymnastic equipment, floor exercises, and balance competitions. The modern gymnastics program for women includes bars of different heights, balance beams, supports, and floor exercises; for men, it includes floor exercises, vaults, pommel horses, rings, parallel bars, and horizontal bars. From this point of view, psychological studies conducted in the field of gymnastics differ according to their specificity.

Third, various factors influence the successful performance of gymnasts. Among these factors, along with

**Article's History:** Received: 27.02.2024 Revised: 06.05.2024 Accepted: 27.06.2024

### Suggested Citation:

Yusiphova, N.E. (2024). Research issues in the psychological preparation of adolescent gymnasts: A literature review. *Scientific Studios on Social and Political Psychology*, 30(1), 95-99. doi: 10.61727/ssspj/1.2024.95.



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\*Corresponding author

psychological factors, socio-psychological factors also play an important role. Research shows that social dynamics can be more important than physical fitness, such as psychological factors.

Fourth, since gymnastics encompasses many disciplines, the physical and psychological requirements for each type can vary. However, the psychological characteristics and personality qualities required for gymnasts, including serious considerations in psychological preparation, are often overlooked. Therefore, the psychological preparation of gymnasts and their mechanisms of success show diversity in these areas, with only minor differences. From this point of view, in the context of socio-psychological issues related to the success of gymnasts in general, commonalities in fundamental research necessary from a psychological perspective will be identified.

Studies involving problems can be distinguished in four directions according to the psychological approach to the context of the studied problem:

1. Research related to the psychological preparation of gymnasts;
2. Research related to the personality characteristics of gymnasts;
3. Studies related to internal and external motivation, which play an important role in the success of gymnasts;
4. Research related to the social relations of gymnasts, including intra-group and interpersonal relations, and social and sports competition.

Before examining the studies related to the problem, it is appropriate to provide concise information about the sport of gymnastics and its history.

## THE UNIQUE PSYCHOLOGICAL DEMANDS OF GYMNASTICS

It should be noted that gymnastic exercises developed in the ancient world. As far back as 4000 BC, gymnastic exercises were used for medicinal purposes in China, India and other nations. Chinese texts from that era mention that practising gymnastics at home in the morning and evening was considered very important (Bandura, 1997). Indian historical sources (monuments, frescoes, paintings) indicate the widespread practice of gymnastic exercises among ancient peoples, including Egyptians, Turks, Assyrians, peoples of Transcaucasia, Romans etc. Horses have been used as equipment in some types of gymnastics since ancient times. These gymnastic exercises performed on horseback helped master riding. In ancient times, gymnastics for medicinal purposes was also used in India and China, but there it turned into spiritual practices and specific pagan religions (e.g., yoga) and lost their relevance. Therefore, they did not have a mass character like in Greece and Rome, where gymnastics was widely practised (Bandura, 1997).

The term "gymnastics" first appeared among the Greeks during the 8<sup>th</sup> century BC. Gymnastics exercises

were part of the physical education system in Ancient Greece, used to prepare young people for participation in the Olympic Games. The main purpose of the Olympic Games was the military training of young people. They ran with a shield, jumped with dumbbells, and fights evolved into boxing, where punches were delivered with the help of hard, unsoftened leather. In 393 AD, gymnastics began to be banned because it was associated with paganism and had a negative effect on the moral education of young people (Hardy *et al.*, 1996).

From the end of the 18<sup>th</sup> century to the beginning of the 19<sup>th</sup> century, gymnastics equipment and exercises on apparatus were incorporated into the physical education systems of Western Europe and Russia. In the second half of the 19<sup>th</sup> century, competitions in specific types of gymnastic movements began to be held in several Western European countries.

Modern sports gymnastics is considered one of the most beautiful and popular sports. However, gymnastics is also the most extreme sport, associated with risk and injury. Beginner gymnasts are subject to these risks, performing the most complex elements and exercises with high technical difficulty to achieve the highest level of mastery in accordance with international competition rules. Behind both the successful and unsuccessful performances of a gymnast is the work of the coach, whose unique professional characteristics impose certain requirements on the specialist's personality, training quality, knowledge, skills, and attitude to work.

Perhaps in no other sport does a coach have such a responsible job as a gymnastics coach. During training and competition, the coach must constantly solve a large number of problems. For this, special knowledge in the principles and methodology of gymnastics, pedagogy, biomechanics, age-related physiology and psychology, psychology of gymnastics, anthropology and morphology, and sports metrology is required (Treasure, 2001).

Gymnastics is as much a mental sport as it is a physical one. Indeed, many gymnasts have even said that mental and psychological preparation is much more difficult than physical preparation because it is challenging to control this process. A gymnast can perform movements perfectly in training, but without mental preparation to face opponents, judges, and personal nerves, the best performance cannot be expected (Treasure, 2001).

In gymnastics, the primary focus is on the gymnast's own body, with lesser emphasis on the external world. Modern sports, including gymnastics, place high demands not only on motor skills but also on the mental sphere. The "psychogram" of artistic gymnastics is very unique. This sport is characterised by its "introversion", the gymnast's focus on sensory perception and evaluation of their own body movements, as well as the tempo-rhythm of movements, and spatial and temporal awareness.

Furthermore, gymnastics is one of the most emotionally intense sports, requiring concentration, willpower, and high plasticity of the central nervous system at the same time. The psychological characteristics of sports related to gymnastics include the artificiality of gymnastic movements, their precision, and the frequent occurrence of truly dangerous situations for the athlete.

The development and performance of gymnastic exercises are based on the psychological "control" of feelings and have the character of "reference" points. A gymnast needs well-developed anticipatory reactions, which are the ability to quickly assess the state of movement and, based on this, urgently predict future movements. High-level gymnastics is characterised by significant emotional stress, requiring high self-control and strong-willed qualities from athletes. It is extremely important to consider the process of voluntary mobilisation as a condition for the concentration of efforts necessary to perform exercises with maximum physical strain in gymnastics.

### KEY AREAS OF RESEARCH IN THE PSYCHOLOGICAL PREPARATION OF ADOLESCENT GYMNASTS

Studies have shown that the development of psychological characteristics in gymnasts is related to competitive or winning behaviour. It should be taken into account that the different feelings experienced by gymnasts are related to the competition. During competitions, athletes may feel excited, nervous, or confident. The values that motivate them, including the desire to achieve goals and the satisfaction and happiness from success, significantly impact their performance.

Sometimes athletes worry about what to prioritise and what to expect if they do not succeed. This worry can lead to fear, muscle tension, stomach pains, body tightness, frequent sweating of hands, and negative thoughts. As a result, gymnasts may begin to believe that they will never be able to win a big competition (Martens, 1971, 1977). These feelings are accompanied by a stress response. In this context, stress can act as a physical and mental load that disrupts the homeostasis system of the human body (Treasure, 2001). However, personal development and strong personality traits can help overcome this.

Adriana Kaplanova's research showed that the effectiveness of stress relief strategies in such cases depends on the level of gymnasts' personality traits, emotional lability and stability, extroversion or introversion, and openness to experience, among others. To better understand the personality characteristics of gymnasts, it is recommended to determine their behaviour in stressful situations. To alleviate these situations, trainers should develop more effective methods (Solomon, 2004).

An important point to note is that when gymnasts face real or potential danger, the fear of physical injury can manifest as a common source of anxiety among

highly competitive gymnasts and even as a possible reason for leaving the sport or losing confidence in their ability to perform successfully under difficult conditions (Weiss & Stuntz, 2004). Therefore, self-confidence is one of the main characteristics of a gymnast's personality. It plays an important role in self-knowledge and self-improvement. R.V. Cabbarov (2022) mentioned that: "Anxiety, fear and indifference do not allow us to feel self-realisation or positive changes, in contrast, self-analysis is the first step to positive change and self-awareness". It is crucial to research how self-awareness helps improve oneself and understand its benefits. In psychology, self-knowledge is the accurate information a person has about themselves. This includes information about emotional states, thoughts, beliefs, values, personality traits, relationships, behaviour patterns, needs, goals, preferences, and social identity. Self-awareness is the result of self-reflection and social processes. However, self-knowledge is not obtained only from introspection. According to A.S. Bayramov & A.A. Alizadeh (1981; 1989) and O.S. Bayramov & O.E. Olizada (2003), there are five sources that increase the potential for self-awareness. They are as follows:

1. The physical world. This category is limited to physical information such as height, weight and eye colour.

2. Social conditions. Self-identification occurs when a person compares themselves with others. Subcategories include upward and downward comparisons, where they compare themselves with someone in a better or worse situation, respectively.

3. Reflected appraisals. This self-definition depends on the values others assign to us. The term means that we reflect on ourselves through the eyes of others.

4. Introspection. This source of self-knowledge includes thoughts, feelings, motives and desires. It is obtained through self-analysis. Introspection is connected with self-knowledge and is inseparably linked to it.

5. Self-awareness. In this category of self-knowledge, self-observation and investigation of one's own behaviour are key. Truths about oneself are learned through self-examination.

Researchers included two methods of self-identification in this process:

1. Cognitive behavioural therapy (CBT)-type approaches. Approaches similar to CBT are one method of self-exploration. This involves conducting a rational analysis of negative thinking processes.

2. Intellectual techniques. Intelligence-based methods assess emotional intelligence skills and help individuals to improve and understand themselves. In summary, self-knowledge is obtained from the unity of the physical, social and psychological world (Cabbarov, 2022).

Athletes are encouraged to be patient when performing a complex activity for the first time or under pressure in a major competition. A previously injured gymnast may also endure emotions reflecting the fear

of re-injury. Regardless of their source, fear perceptions have the potential to disrupt focus and ultimately hinder an athlete's future performance (Lavallee & Robinson, 2007; Mann & Whitney, 1947). Inadequately calculated risk in gymnastics leads to physiological and psychological consequences at the psychophysiological level. These outcomes, in turn, negatively affect performance and greatly increase the risk of injury. For example, a gymnast who is afraid of performing a trick may experience an increase in body tone (muscle) and heart rate, along with a loss of concentration and confidence. Such a situation creates a self-perpetuating negative cycle in skills and abilities.

According to the literature, the formation of personality qualities in sports activities will ensure the athlete's chances of achieving more success in competitions (Kaplánová, 2018). Authors note that psychologists are constantly faced with significant inter-group differences in personality traits and qualities across various sports, as well as intra-group differences between representatives of one or another sport. Despite being the same type of sport, different sports roles appear in team sports. Such different manifestations refer to the characteristics of the athlete's personality, temperament, character, and abilities. These manifestations depend on both natural, innate initial conditions for the development of the psyche and the influence of the environment; they are formed and developed in the process of education, training, and competition.

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## CONCLUSIONS

Several studies have also examined the differences in the personality characteristics of athletes performing individually and those in a team. The study showed that the personality characteristics of gymnasts have a profound effect on their competition process and success mechanism. It is possible to predict the success of a gymnasium in a specific speciality based on personality characteristics. Numerous studies have been devoted to the study of internal and external motivation, which play an important role in the success of gymnasts. It should be noted that the psychology of motivation is one of the most complex and controversial areas of modern psychology. Researches show that the main role in a child's sports education is played by their parents. They should know that not only do they place a huge physical and emotional burden on the child's shoulders, but they are also responsible for the competent organization of the child's daily routine, the psychological support of the young athlete, and the development of the child's relationships. Therefore, parents should be careful in this situation and should not withhold their moral support.

## ACKNOWLEDGEMENTS

None.

## CONFLICT OF INTEREST

None.

## **Дослідження питань психологічної підготовки юних гімнастів: огляд літератури**

**Нігар Ейваз Юсифова**

Аспірант

Бакинський державний університет

1148, вул. Академіка Західа Халілова, 23, м. Баку, Азербайджан

<https://orcid.org/0009-0009-0871-9873>

**Анотація.** У статті проаналізовано та систематизовано дослідження психологічної підготовки юних гімнастів. Крім того, розглянуто та психологічно осмислено фактори, які відіграють важливу роль у психологічній підготовці гімнастів. У статті автор показав важливість індивідуально-психологічних особливостей гімнастів у підготовці їх до змагань. Зрештою, зазначається, що крім усього цього, важливий вплив на психологічну підготовку гімнастів мають стосунки гімнаст-тренер та їх взаємодія з однолітками. Це, в свою чергу, призводить до зміни психологічного клімату в колективі. Відповідно до літератури, психологічна підготовка або тренування психологічних навичок, як її ще називають, є частиною всього процесу, якого дотримується спортсмен під час його/її спортивної підготовки. Вайнберг і Вільямс згадали кілька точок зору, згідно з якими найкращий час для реалізації такої програми – міжсезоння або передсезоння. Психологічна підготовка на сьогодні є невід'ємною частиною будь-якої спортивної програми, яка спрямована на відповідну підготовку спортсменів для досягнення високих результатів. Дійсно, важливість навчання психологічних навичок у розвитку спортивних результатів широко визнається, і кількість спортсменів, які впроваджують стратегії психологічної підготовки, зростає. Домогтися успіху в психологічній підготовці спортсменів можна, правильно впливаючи на їхню психіку. Неможливо успішно тренувати спортсменів, не спираючись на психологію особистості та колективу. Це особливо важливо в області гімнастики

**Ключові слова:** спортсмен; гімнаст; психологічна підготовка; змагання; соціальні стосунки; міжособистісні стосунки