eISSN: 2229-3213 pISSN: 2229-3205
The Journal of Applied Science and Social Science
Volume 16,Issue 02 February, 2026

COGNITIVE REACTION AND DECISION-MAKING SPEED OF TRAMPOLINE ATHLETES DURING COMPETITIONS

MUSOBAQA PAYTIDA TRAMPOLIN SPORTCHILARINING KOGNITIV REAKSIYA VA QAROR QABUL QILISH TEZLIGI

КОГНИТИВНАЯ РЕАКЦИЯ И СКОРОСТЬ ПРИНЯТИЯ РЕШЕНИЙ У СПОРТСМЕНОВ ПО ПРЫЖКАМ НА БАТУТЕ ВО ВРЕМЯ СОРЕВНОВАНИЙ

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Abstract: This article examines the scientific and theoretical significance of cognitive reaction and decision-making speed in trampoline athletes during competitions. The complexity of movements in trampoline sport, along with time and spatial constraints, requires athletes to think quickly, concentrate attention, and make accurate decisions. The study analyzes the impact of cognitive processes – sensation, perception, attention, and thinking – on sports performance. Methods for developing decision-making speed under psychological pressure and their effects on athletes' technical and functional readiness are also discussed. The findings are of significant importance for the effective organization of competitive activities of trampoline athletes.

Keywords: trampoline sport, cognitive reaction, decision-making speed, sport psychology, attention, perception, competitive activity, psychological readiness.

Annotatsiya: Ushbu maqolada musobaqa jarayonida trampolin sportchilarining kognitiv reaksiyasi va qaror qabul qilish tezligining ahamiyati ilmiy-nazariy jihatdan yoritilgan. Trampolin sportida harakatlarning murakkabligi, vaqt va makon omillarining cheklanganligi sportchidan tezkor fikrlash, diqqatni jamlash hamda to‘g‘ri qaror qabul qilishni talab etadi. Tadqiqotda kognitiv jarayonlar sezgi, idrok, e’tibor va fikrlashning sport natijalariga ta’siri tahlil qilinadi. Shuningdek, musobaqa sharoitida psixologik bosim ostida qaror qabul qilish tezligini rivojlantirish usullari va ularning sportchilarning texnik hamda funksional tayyorgarligiga ta’siri ko‘rsatib beriladi. Olingan xulosalar trampolin sportchilarining musobaqaviy faoliyatini samarali tashkil etishda muhim ahamiyat kasb etadi.

Kalit so‘zlar: trampolin sporti, kognitiv reaksiya, qaror qabul qilish tezligi, sport psixologiyasi, diqqat, idrok, musobaqa faoliyati, psixologik tayyorgarlik.

Аннотация: В данной статье научно-теоретически рассмотрена значимость когнитивной реакции и скорости принятия решений у спортсменов по прыжкам на батуте в соревновательном процессе. Сложность движений в прыжках на батуте, ограниченность времени и пространства требуют от спортсмена быстрого мышления, концентрации внимания и правильного принятия решений. В исследовании анализируется влияние когнитивных процессов – ощущений, восприятия, внимания и мышления – на спортивные результаты. Также рассматриваются методы развития скорости принятия решений в условиях психологического давления и их влияние на техническую и функциональную подготовку спортсменов. Полученные выводы имеют важное значение для эффективной организации соревновательной деятельности спортсменов по прыжкам на батуте.

Ключевые слова: батутный спорт, когнитивная реакция, скорость принятия решений, спортивная психология, внимание, восприятие, соревновательная деятельность, психологическая подготовка.

INTRODUCTION

Nowadays, achieving high results in sports depends not only on athletes' physical preparedness but also directly on their psychological and cognitive abilities. Especially in trampoline sports, the complexity of movements and the necessity to perform exercises with high

precision within a short period require athletes to have rapid cognitive reactions and effective decision-making skills. During competitions, athletes must continuously assess the environment, monitor their own movements, and make quick decisions in response to emerging situations.

The psychological pressure, competitive environment, and time constraints experienced during competitions strongly affect trampoline athletes' attention, perception, memory, and thinking processes. The speed and accuracy of these cognitive processes are critical factors in achieving successful performance outcomes. Therefore, scientifically studying the cognitive reaction and decision-making speed of trampoline athletes, as well as identifying ways to improve them, is a pressing issue.

Modern sports psychology and pedagogical approaches place particular emphasis on cognitive preparedness in effectively organizing athletes' competitive activities. Developing cognitive skills in trampoline sports helps reduce technical errors, improve movement coordination, and achieve consistent results. From this perspective, the present study highlights the theoretical foundations and practical significance of trampoline athletes' cognitive reaction and decision-making speed during competitions.

LITERATURE REVIEW

The importance of cognitive processes in sports activities has been investigated by numerous local and international scholars. Scientific sources emphasize that achieving high results in athletes depends not only on physical preparedness but also on cognitive factors such as attention, perception, reaction speed, and decision-making. In particular, studies in sports psychology recognize rapid thinking and accurate decision-making under competitive conditions as one of the key factors determining an athlete's success.

Several studies have examined reaction speed in relation to an athlete's ability to respond to external stimuli and coordinate movements. Research by scholars such as Klarin, Weinberg, and Gould indicates that reaction and decision-making speed are closely linked with an athlete's neuropsychological stability and adaptation to competitive stress. These studies confirm that developing cognitive readiness in athletes significantly enhances sports performance.

In the scientific literature related to trampoline sports, most research has focused on technical preparation, jump biomechanics, and coordination abilities. However, in recent years, there has been a growing number of studies addressing the psychological and cognitive preparedness of trampoline athletes. Some researchers emphasize that in performing complex acrobatic elements in trampoline sports, an athlete's ability to perceive quickly and make situation-appropriate decisions plays a decisive role.

Studies conducted by local scholars highlight that special exercises, psychological training, and practice sessions under competition-like conditions are effective in developing athletes' cognitive abilities. At the same time, the analysis of existing literature indicates that there are insufficient studies comprehensively examining trampoline athletes' cognitive reaction and decision-making speed during competitions. This situation underscores the relevance of the topic and demonstrates the need for more in-depth scientific investigation.

RESEARCH METHODOLOGY

The study was aimed at identifying and analyzing the cognitive reaction and decision-making speed of trampoline athletes during competitions. Modern scientific approaches used in sports psychology and pedagogy were employed throughout the research process. The research design was based on descriptive-analytical and comparative analysis methods.

Trampoline athletes who regularly practice the sport were selected as the research subjects. The research focus was on the athletes' cognitive reaction speed and decision-making processes under competitive conditions. Participants of various skill levels took part in the study, and their performance indicators were compared.

Data collection methods included psychological tests, observation, and the analysis of sports performance. To determine athletes' cognitive reaction speed, special reaction-time measurement tests were applied. Decision-making speed was assessed using situational tasks and simulated competition conditions. In addition, athletes' behaviors during competitions were recorded via video observation and subsequently analyzed.

The collected data were processed using mathematical and statistical methods and evaluated through averages, percentages, and comparative analyses. To ensure the reliability of the research results, the data were verified in multiple stages, and repeated measurements were conducted. Ethical standards were strictly observed, and participant consent was obtained.

This methodological approach allowed for a comprehensive study of trampoline athletes' cognitive reaction and decision-making speed during competitions and enabled the drawing of scientifically substantiated conclusions.

RESULTS AND DISCUSSION

The cognitive reaction speed and decision-making ability of trampoline athletes during competitions have a direct impact on their performance outcomes. According to the collected data, highly skilled athletes stand out due to their rapid decision-making and quick responses to visual stimuli. Their decision-making process is more automatic and efficient, resulting in fewer errors even under stressful conditions.

The study also revealed a clear trend: the cognitive reaction speed and decision-making speed of athletes during competitions are closely linked to the skills developed during training and through specialized psychological preparation. Exercises aimed at enhancing attention and perception, decision-making simulations, and training in realistic competition conditions significantly contribute to improving athletes' performance.

In the discussion, it is important to emphasize that cognitive reaction speed is closely associated with the accuracy of performing technical elements, coordination of movements, and overall competitive effectiveness. The results of this study align with previous research in sports psychology conducted by scholars such as Klarin, Weinberg, and Gould. In particular, time constraints and psychological pressure during competitions test athletes' rapid decision-making abilities and highlight the critical importance of cognitive preparedness.

Moreover, the study found that less experienced athletes tend to slow down in decision-making when performing complex acrobatic elements and are more prone to errors under stress. This underscores the necessity of a systematic and comprehensive approach to developing cognitive reaction speed and decision-making skills.

Overall, the results indicate that high performance in trampoline competitions depends not only on physical preparedness but also on the level of cognitive readiness. Therefore, training programs and specialized psychological exercises aimed at developing athletes' cognitive skills play a crucial role in enhancing competitive success.

CONCLUSION

The results of this study indicate that the cognitive reaction speed and decision-making ability of trampoline athletes during competitions have a direct impact on their sports performance. The research found that highly skilled athletes stand out due to their ability to make quick and accurate decisions when performing complex acrobatic elements. In stressful situations, their susceptibility to errors is minimal, and their cognitive processes function more stably and efficiently.

Moreover, reaction speed and decision-making accuracy were found to be closely linked to the athletes' technical preparedness, coordination, and motor skills. The findings suggest that specialized exercises, simulated modeling, and training conducted under real competition conditions, aimed at developing cognitive reaction and decision-making, significantly enhance athletes' performance. Such approaches not only help to overcome competitive stress but also

systematically improve athletes' concentration, perceptual speed, and ability to make rapid decisions.

At the same time, the study confirms that cognitive readiness is an important factor for competitive success, alongside physical preparedness. Achieving high results in competitions requires not only strength, endurance, and technique but also psychological stability and quick thinking skills. Therefore, systematic and comprehensive training programs, specialized exercises, and psychological preparation aimed at developing trampoline athletes' psychological and cognitive skills play a decisive role in enhancing their success.

In conclusion, this study allows for the identification of scientifically-based methods for developing cognitive readiness in trampoline athletes, as well as the development of practical recommendations to improve their competitive performance. These results provide a solid scientific foundation for future research in sports psychology and pedagogical training.

REFERENCES

1. Klarin M.V. Innovatsion ta'lim va sport psixologiyasi texnologiyalari. – Moskva: Pedagogika, 2016.
2. Weinberg R.S., Gould D. Foundations of Sport and Exercise Psychology. – Champaign, IL: Human Kinetics, 2014.
3. Karimov I.A. Sport psixologiyasi va tayyorgarlik metodikasi. – Toshkent: Fan, 2017.
4. Yo'ldoshev J.G'., Usmonov S.A. Pedagogik texnologiya asoslari. – Toshkent: O'qituvchi, 2017.
5. Azizxo'jayeva N.N. Sport psixologiyasi va kognitiv ko'nikmalarni rivojlantirish. – Toshkent: TDPU, 2019.
6. G'afforova T. Boshlang'ich va professional sportchilar uchun psixologik tayyorgarlik. – Toshkent: Fan, 2018.
7. Madayev O., Rahmonov T. Trampolin sporti texnikasi va tayyorgarlik metodikasi. – Toshkent: Fan, 2016.