

## Abstract

**Introduction:** The aim of this study was to investigate the role of the metacognitive self - defined as the ability to reflect on one's own cognitive processes - in the athletic performance of swimmers. The research focused on identifying differences in the level of the metacognitive self depending on athletic level, training experience, and gender, as well as determining its relationship with self-regulation skills, action control, and self-efficacy.

**Study Description:** The study aimed to understand the relationship between the metacognitive self and athletic performance in three groups of swimmers differing in skill level. A mixed-methods approach (quantitative and qualitative) was applied. In the first stage, questionnaires measuring the metacognitive self (MJ-24), action control (ACS-90), self-regulated learning in sport practice (SRL-SP), and self-efficacy (GSES) were used. In the second stage, structured interviews were conducted before and after participants completed a planned task (swimming 50m freestyle for time).

**Results:** The analyses revealed that the metacognitive self varies depending on the athletic level of the participants. Elite and amateur-level athletes presented higher levels of the metacognitive self than national-level athletes. It was also observed that the metacognitive self is age-dependent, with older athletes exhibiting higher levels of the metacognitive self. Athletes with a higher metacognitive self showed better self-regulation skills, especially in action planning (AOP component). Additionally, women scored higher in the metacognitive self than men.

**Discussion:** The results confirm the importance of metacognition in the sports context. Athletes with high levels of the metacognitive self regulate emotions and applied training strategies more effectively, supporting their development. The discussion refers to previous studies that highlighted the crucial role of self-regulation and metacognition in achieving athletic success.

**Conclusions:** The findings suggest that the metacognitive self plays a significant role athletic performance. Introducing training programs to support metacognitive development may enhance self-regulation effectiveness and improve athletes' outcomes. Future research should explore

different sports disciplines and examine the role of environmental factors in developing the metacognitive self.

**Keywords:** metacognitive self, athletic performance, swimming, sports psychology