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Health Problems in WT Taekwondo Athletes: Stress, Injuries, and Scientifically-Based Prevention Strategies

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Abstract

Modern athletes must maintain a delicate balance between physical health, mental stability, and technical performance. In high-intensity combat sports such as World Taekwondo (WT), these factors are critical not only for victory but also for long-term athletic sustainability. However, WT athletes today frequently face psychological pressure, physical injuries, and overtraining, which pose significant threats to their overall health.

Keywords: World Taekwondo (WT), athlete health, sports injuries, psychological stress, overtraining syndrome, injury prevention, sports recovery, sports medicine, taekwondo biomechanics, mental preparation in sports, performance optimization.

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1. Major Health Threats to Taekwondo Athletes

1.1. Psychological Stress

WT athletes experience constant stress due to intense training, performance pressure, ranking maintenance, and international expectations. This stress negatively affects:

- Decision-making speed (Lee & Kim, 2016)
- Reaction and coordination (Park et al., 2017)
- Weakened immunity and chronic fatigue (Kellmann & Kallus, 2001)

1.2. Injury Statistics (Quantitative Analysis)

According to studies (Kazemi et al., 2009):

- The most common injuries in Taekwondo include:
- Knee injuries (31%)
- Ankle sprains (23%)

- Head and facial trauma (17%)
- Interestingly, most injuries occur during training rather than competitions.
- Female athletes are more prone to knee injuries than males.

1.3. Overtraining and Insufficient Recovery

Overtraining syndrome (OTS) is a condition characterized by severe fatigue, sleep disturbances, and lack of focus. In WT athletes, inadequate recovery after competitions can lead to chronic stress and injury (Meeusen et al., 2013).

2. Advanced Strategies for Health Protection and Injury Prevention

2.1. Individualized Training Programs

- Tailoring training to each athlete's biological rhythms, health condition, psychological state, and recovery capacity is essential.
- Use of the Athlete Biological Passport system is recommended (WADA, 2020).

2.2. Biomechanical Analysis and Video Analytics

- High-speed motion analysis can identify technical flaws and prevent injury (Kwon et al., 2010).
- Proper biomechanics reduce unnecessary strain on joints and muscles.

2.3. Psychological Preparation

- Programs that include stress management, concentration training, visualization, and meditation significantly improve performance (Gould & Maynard, 2009).
- Regular work with sports psychologists boosts motivation and emotional control.

2.4. Nutrition and Scientific Recovery Methods

- Diets rich in proteins, electrolytes, and antioxidants support muscle repair.
- Techniques like cold therapy, sports massage, quality sleep, and scheduled recovery days are scientifically proven to aid rehabilitation.

3. International Practices and Leading Models

3.1. South Korea's Experience

- In the homeland of Taekwondo, athletes' health is monitored by integrated sports-medical complexes.
- The Smart Taekwondo System is used to measure impact force, reaction time, and recovery metrics (Kim & Lee, 2020).

3.2. USA and Europe's Practices

- Institutions like the US Olympic Committee (USOC) use multidisciplinary teams including psychologists, physiotherapists, dietitians, and doctors.
- Specialized centers for injury prevention and recovery support elite athlete longevity.

Conclusion

WT Taekwondo athletes operate under immense physical and psychological pressure. This often results in stress, injuries, and long-term health complications. Fortunately, modern tools from medicine, psychology, biomechanics, and recovery science offer effective ways to minimize these risks. An individualized, evidence-based approach to training and recovery is the most reliable method for maintaining athletic health and enhancing performance.

References

1. Kazemi, M., Chudolinski, A., Turgeon, M., & Simon, A. (2009). Injury rates and characteristics in taekwondo athletes. Journal of Science and Medicine in Sport, 12(3), 361–365.
2. Meeusen, R., et al. (2013). Prevention, diagnosis and treatment of the Overtraining Syndrome. European Journal of Sport Science, 13(1), 1–24.
3. Park, S., Kim, J. , & Lee, Y. (2017). Psychological stress in elite athletes. Korean Journal of Sports Science, 28(3), 41–48.
4. Gould, D., & Maynard, I. (2009). Psychological preparation for the Olympic Games. Journal of Sports Sciences, 27(13), 1393–1408.
5. Kellmann, M., & Kallus, K. W. (2001). Recovery-Stress Questionnaire for Athletes: User Manual. Human Kinetics.
6. WADA (2020). Athlete Biological Passport Operating Guidelines and Compilation of Required Elements.
7. Kwon, M. S., et al. (2010). Biomechanical analysis of Taekwondo athletes' techniques using motion capture. Journal of Sports Biomechanics, 9(4), 345–356.
8. Kim, H., & Lee, J. (2020). Smart Taekwondo Training System Development and Application. Journal of Advanced Sport Technology, 5(1), 12–19.