

Self-rated sleep quality and mood states of Brazilian fighters

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Abstract

Sleep has a direct relationship with mood. In this context, the aim of this study was to analyze the relationship between sleep quality and mood of combat sport athletes. A total of 188 elite male combat sports athletes participated in the study. Athletes who reported good sleep have greater vigor during competition than athletes with regular sleep and the mood profile was similar to the Iceberg Profile. In conclusion, there are relationships between sleep quality and mood of combat sport athletes, and athletes with good sleep quality present a mood profile nearest to the ideal for the best performance.

Keywords: Sport psychology; combat sports; martial arts; sleep; mood.

1. Introduction

Sports performance is the result of a series of variables, including sleep, which is responsible for bodily rest and recovery of physical and cognitive abilities (Davenne, 2009). Just like sleep, psychological variables are important for the sports performance of elite athletes. Among these psychological factors, mood has been highlighted in recent research (Brandt, Bevilacqua, & Andrade, 2017; Chennaoui et al., 2016). Mood is an emotional construct that can vary in intensity and duration and is composed of six different states: tension, anger, depression, fatigue, confusion and vigor (Lane & Terry, 2000). Studies have shown that overall performance is associated with low levels of tension, anger, depression, fatigue and confusion and high vigor (Andrade, Bevilacqua, Coimbra, Pereira, & Brandt, 2016). Sleep has a direct relationship with mood (Lastella, Lovell, & Sargent, 2014) and sports performance. In this context, in combat modalities, different aspects about the relations between mood, sleep and sports performance are not consolidated in the literature, presenting itself as an important research gap.

2. Objectives

The aim of this study was to analyze the relationship between sleep quality and mood of combat sport athletes.

3. Methodology

A total of 188 elite male combat sports athletes participated in the study ($M_{age} = 26.20 \pm 7.29$ years). Athletes from four combat sports were surveyed, being 118 Brazilian Jiu-Jitsu (62,8% / $M_{age} = 28.26 \pm 7.32$ years), 47 judo athletes (25% / $M_{age} = 23.04 \pm 5.15$ years), 15 taekwondo athletes (8% / $M_{age} = 22.50 \pm 4.67$ years) and 8 karate athletes (4.2% / $M_{age} = 21.86 \pm 11.53$ years).

The athletes were classified as elite athletes following the criteria of Swann, Moran and Piggott (2015), with 28% ($n = 44$) competing at the state level, 29.9% ($n = 47$) at the national level and 42% ($n = 66$) at the international level. A questionnaire was used for general characterization of the athletes and the Brunel Mood Scale – BRUMS was used to verify the athletes' mood states. Sleep was assessed through a self-reported question "How do you self-assess the quality of your

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sleep?". The answer options were based on a Likert scale (from 0 = *poor* to 4 = *excellent*). Data was treated using descriptive and inferential statistics through SPSS software version 20.0. The data were analyzed using descriptive statistics (mean, standard deviation, frequency, and percentage) and inferential statistics. Inferential analysis was performed using the Kruskal–Wallis test to compare the mood of athletes with different self-reported sleep quality. When differences were found, we used Dunn's *post hoc* test. This study was approved by the Committee for Ethics in Human Research of the Santa Catarina State University under protocol 44/2011.

4. Results

The Kruskal-Wallis test showed that there was a difference in vigor between athletes with different levels of sleep quality. ($\chi^2(4) = 17.010$, $p = 0,002$; $\eta^2 = 0.079$; Effect Size [ES]: 0.574, small). After Dunn's *post hoc*, it was observed that athletes who reported good sleep had greater vigor during competition than athletes with regular sleep. There was no significant difference in the other comparisons. However, it can be observed that athletes who reported poor sleep have a worse Iceberg Profile, with higher tension, depression, anger, fatigue and confusion and lower vigor (Figure 1).

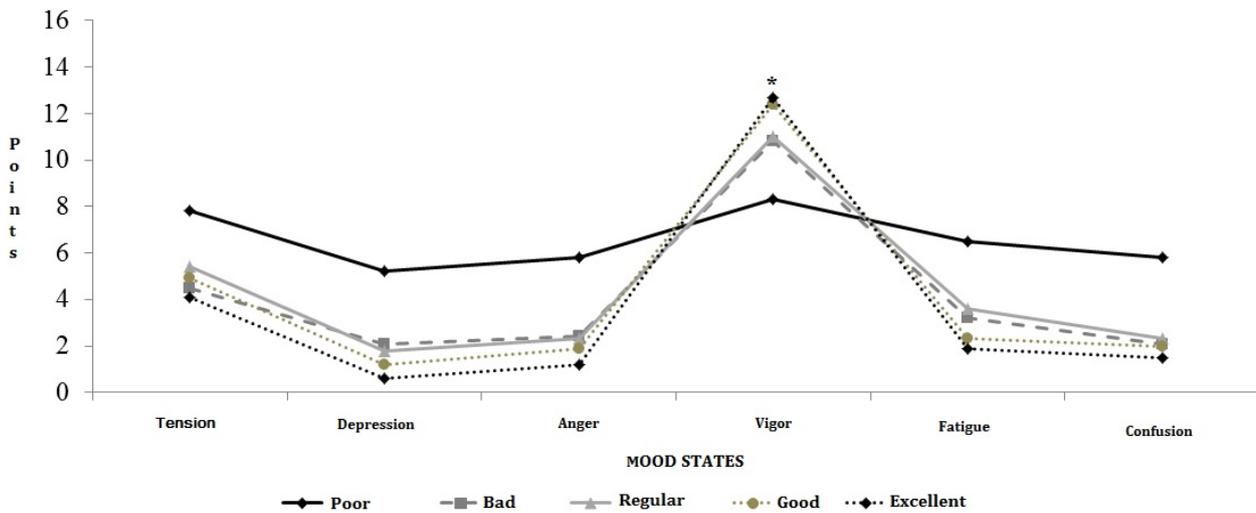


Figure 1. Mood of male combat sports athletes with different levels of sleep quality.

*Difference between groups ($p < 0.002$) by Kruskal-Wallis test, *post hoc* Dunn. Values on average.

5. Discussion

In our study we found that athletes who reported good sleep had greater vigor during competition than athletes who had regular sleep. These results are similar to the study by Andrade, Bevilacqua, Casagrande, Brandt and Coimbra (2018), in which athletes who rated excellent sleep had greater vigor compared to athletes with regular or poor sleep. In general, combat sports athletes exhibited mood similar to Iceberg Profile. Although without significant differences, we observed a tendency for athletes with poor sleep to have significant changes in mood profile, with levels of negative mood factors close to vigor. Studies indicate that a positive Iceberg Profile may be an indicator for better sports performance (Lane & Terry, 2000), with high vigor and low levels of tension, depression, anger, confusion and fatigue. However, the "ideal" mood profile may vary by sport. For combat sports, studies show that elevated anger coupled with vigor can have a facilitating effect on increased activation levels (Brandt et al., 2015). However, studies investigating these modalities are scarce. In the case of Brazilian jiu-jitsu, anger at moderate levels can be considered positive as it can postpone fatigue by altering bodily perceptions (Tenenbaum & Eklund, 2007).

6. Conclusion

It can be concluded that there are relationships between sleep quality and mood of combat sport athletes, and athletes with good sleep quality present a mood profile closer to the ideal for the best performance.

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