

Mood states and self-rated health of Brazilian jiu-jitsu fighters in competition

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Abstract

Brazilian Jiu-Jitsu (BJJ) athletes are subjected to a large and intensive training load that may cause injuries. These injuries can be detrimental to the physical and mental health of these athletes. In this regard, the aim of this study was to compare the self-reported health and mood states of BJJ athletes. Twenty-three BJJ athletes participated in the study. A questionnaire was used for general characterization of the athletes, which included the self-rated health question, and the Brunel Mood Scale - BRUMS were used. The mood profile was similar to the Iceberg profile. Athletes with regular health had lower vigor than athletes with excellent vigor. Lower vigor in athletes who reported regular health may be related to concern about injury. Specific strength training and careful execution of the technique should be emphasized in training.

Keywords: Martial arts; combat sports; BJJ; sport psychology; injury.

1. Introduction

In sports, it is known that for an athlete to be successful, training and high levels of physical fitness are required, involving various physical abilities such as strength, power, agility, flexibility, among others (Andreato, Lara, Andrade, & Branco, 2017). To improve physical abilities, Brazilian jiu-jitsu (BJJ) athletes may be subjected to extensive hours of training, suffering a heavy emotional overload due to the physical danger to which they are subjected (Branco et al., 2016; Coswig, Neves, & Del Vecchio, 2013). Among the dangers to the health of these athletes, BJJ athlete is exposed to a high risk of injuries resulting from falls, overexertion or joint locks are the most common in training and competition (Silva Júnior, Kons, Dellagrana, & Detanico, 2018). Injured athletes may demonstrate poorer quality of life and health and may also affect aspects beyond the physical component of health (Valovich McLeod, Bay, Parsons, Sauers, & Snyder, 2009). Another aspect to be highlighted the practice of weight loss before competitions. Common among fighters, it can affect performance, endanger the fighter's health, (Oppliger, Case, Horswill, Landry, & Shelter, 1996) as well as negatively affect the fighter's psychological state. (Franchini et al., 2006). Lucena et al., (2009) found that only 7% of athletes reported feeling good about rapid weight loss, while the others reported negative sensations such as uneasiness, apprehension, feelings of emotional upheaval. In this sense, mood states are shown as a variable that reflects feelings, thoughts, and degree of enthusiasm in performing tasks emotional as well as bodily, and behavioral states (Lane & Terry, 2000). Mood can vary in durations and intensity and involves six factors; five are negative (tension, depression, anger, fatigue, and confusion), and one is positive (vigor) (Rohlf's et al., 2008). The literature indicates that the near-ideal mood profile for better athletic performance is characterized by higher vigor in relation to the other factors. This is called the Iceberg Profile (Morgan, 1980). Mood states have received attention in recent combat sports research to assess the

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psychological state and mental health of athletes (Andrade, Silva, Flores Junior, Rosa, & Dominski, 2019; Hernández, Torres-Luque, & Olmedilla, 2009; Wong, Thung, & Pieter, 2006).

2. Objectives

The aim of this study was to compare the self-reported health and mood states of BJJ athletes.

3. Methodology

Twenty three BJJ male athletes of from the Santa Catarina state (Brazil) participated in the study. The participants average age was 27.79 years, ranging from ages 18 to 46 (± 6.97), with a mean height of 176 cm (± 0.08), an average weight of 83.1 kg (± 14.59), and an average of 6,13 years of BJJ practice. Among these athletes, 5 (21,7%) compete at a regional level, 16 (69.6%) at a national level, and 7 (8,7%) at an international level.

A questionnaire was used for general characterization of the athletes, which included the self-rated health question (How do you self-rate your health?), with a response ranging from 0 (terrible) to 4 (excellent). The Brunel Mood Scale – BRUMS (Rohlf et al., 2008) was used to verify the athletes' mood states. Data collection was done on the same day of the competition, before official weigh-in, in a quiet and reserved place. Data was treated using descriptive and inferential statistics through SPSS software version 20.0.

Descriptive statistics were used, and data is presented in percentage and standard variation. For inferential statistics, Shapiro-Wilk test was used to verify data normality. In order to compare the mood states and health of BJJ athletes, was used the ANOVA one-way for the parametric data and the Mann-Whitney U test for the non parametric data. A level of significance of $p < 0.05$ was settled. This study was approved by the Committee for Ethics in Human Research of the Santa Catarina State University under protocol 2.776.490.

4. Results

The profile of mood states of the BJJ athletes was similar to the iceberg profile, with moderate levels of tension. Concerning self-rated health, 21.7% of athletes reported regular health, 52.2% had good health and 26.1% had excellent health. Comparing mood with self-rated health, it was found that athletes with regular health have worse vigor compared to athletes with excellent health at a pre-competitive time. ($p < 0.05$) (Table 1).

Table 1. Mood Profile Comparison of BJJ Athletes with Different Health Ratings.

	Tension		Depression		Anger		Vigor		Fatigue		Confusion	
	\bar{x}	\pm	\bar{x}	\pm	\bar{x}	\pm	\bar{x}	\pm	\bar{x}	\pm	\bar{x}	\pm
General (n=23) Health	5.04	3.64	0.96	1.58	2.13	3,48	10.96	2.77	3.39	2.72	2.7	2.68
Regular (n=5)	6.6	4.82	0,8	1,78	3	5,65	9,4*	2,79	3	2,12	4,4	3,36
Good (n=12)	4.5	3.37	1,08	1,62	1,67	2,87	10,42	2,35	3,83	3,04	2,5	2,71
Excellent (n=6)	4.83	3.43	0,83	1,6	2,33	2,87	13,33*	2,33	2,83	2,78	1,67	1,5

\bar{x} = mean; \pm = standard deviation; * = $p < 0.05$

5. Discussion

The athletes' mood profile in this study was similar to other studies with BBJ athletes (Andrade et al., 2019; Brandt, 2015), presenting high vigor, moderate tension and low depression, fatigue, confusion and anger in the precompetitive period. That would be close to the ideal profile for athletes to achieve the best performance (Terry, Lane, & Fogarty, 2003). Attention should be given to high tension, as it can generate musculoskeletal tension that may be related to the incidence of injuries due to low physical and mental capacity (Andrade, Bevilacqua, Coimbra, Pereira, & Brandt, 2016).

Lower vigor in athletes who reported regular health may be related to concern about injury. In mixed martial arts, an injured athlete cannot train and compete at a high level, making this one of

their main fears in combat sports. (Vaccaro, Schrock, & McCabe, 2011). Considering the incidence of injuries in BJJ, it is questioned that the practice of hurting your opponent until he or she is unconscious and forcing joints to almost rupture bones or ligaments, can be detrimental to the physical and mental health of athletes and practitioners who choose combat sports as physical activity (White, 2007).

6. Conclusion

In this study, it was found that BJJ athletes who had regular health had worse vigor than athletes with excellent health. The large training load and the danger that the sport poses in the mood and health of athletes can generate important psychological changes in these athletes. Thus, specific strength training programs for injury prevention are suggested, as well as care in the execution of techniques during training, aiming at reducing the possibility of injury.

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