Sleep quality evaluation, chronotype, sleepiness and anxiety of Paralympic Brazilian athletes: Beijing 2008 Paralympic Games

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ABSTRACT

Objective The objective of this study was to evaluate the sleep quality, chronotype, sleepiness and the anxiety level of Brazilian Paralympics athletes before the 2008 Beijing Paralympic Games.

Design Cross-sectional study.

Setting Exercise and Psychobiology Studies Center (CEPE) and Universidade Federal de São Paulo, an urban city in Brazil.

Participants A total of 27 Paralympics athletes of both genders (16 men and 11 women) with an average age of 28±6 years who practised athletics (track and field events) were evaluated.

Main outcome measures Sleep quality was evaluated using the Pittsburgh Scale and the Epworth Sleepiness Scale to evaluate sleepiness. Chronotype was determined by the Horne and Östberg questionnaire and anxiety through the State-Trait Anxiety Inventory. The evaluations were performed in Brazil 10 days before the competition.

Results The study’s results demonstrate that 83.3% of the athletes that presented excessive daytime sleepiness also had poor sleep quality. The authors noted that 71.4% were classified into the morning type and 72% of the athletes who presented a medium anxiety level also presented poor sleep quality. Athletes with poor sleep quality showed significantly lower sleep efficiency (p=0.0119) and greater sleep latency (p=0.0068) than athletes with good sleep quality. Athletes who presented excessive daytime sleepiness presented lower sleep efficiency compared to non-sleepy athletes (p=0.0241).

Conclusions The authors conclude that the majority of athletes presented poor sleep quality before the competition. This information should be taken into consideration whenever possible when scheduling rest, training and competition times.

INTRODUCTION

The Paralympics date back to 1960, the year of the first Paralympic Games in Rome. After the Second World War, the sports designed for athletes with disabilities advanced in the contexts of prevention as well as physical, social and psychological rehabilitation.1,2 Currently, the Paralympics are an evolving process focusing on the participation of disabled athletes at different levels and capabilities. Additionally, the Games focus on scientific development that furthers the understanding of the influence of disabilities on exercise and sports performance.3 In the 2008 Beijing Paralympic Games, Brazilian athletes finished ninth overall with 16 gold medals and a total of 47 medals.4 The Paralympics become more competitive and garner more interest each year. Thus, the study of variables that directly interfere with both team and individual athlete results and performance are the focus of significant attention from researchers and scholars. It is known that these variables are linked to technical/tactical, physical and psychological/psychological aspects that are directly related to performance.

Even though the athletes are well trained technically/tactically and physically, Becker and Samulski5 suggest that athletes respond differently to external stimuli during a competition since pressure from training and competition is transferred to an emotional realm. Therefore, well-prepared athletes can present reductions of physical and emotional performance during competition when they are under strong pressure to perform well.6 However, other athletes can improve their performance if they present a good level of precompetitive anxiety associated with an appropriate emotional and physical balance.6

The effects of excessive anxiety before the competition led to several consequences for the athletes.7 If anxiety levels are within normal levels, these effects can be positive; if they surpass those levels, however, they can cause severe emotional reactions, including a decrease in performance.

Some evidence suggests that regular physical practice produces a variety of physiological benefits. Adaptability to physical exercises can be found in young, adult and older populations as well as populations that are healthy or influenced by some pathology and/or disability. Several factors, such as the initial level of physical fitness, the design and duration of the fitness program, genetic factors, age and gender, should be considered in this long list of adaptabilities.8,9

Samulski and Noce10 carried out a study on the psychological preparation of the Brazilian Paralympic athletes and showed that the most important reasons for becoming involved in a sport were the enjoyment derived from practice and the need for rehabilitation. The majority of athletes mentioned the following stress factors: sleeping problems, pressure to win and interpersonal conflicts.

Several studies have been carried out to evaluate the relationship between physical exercise and sleep quality. The most common change observed...