The Athlete Sleep Quality in the Training Center

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Abstract—The training centre condition will change the athlete’s training intensity, duration, and responsibility. Hormonal imbalances can cause a bad sleep quality. Sleep quality is very important to keep the fit condition of the athletes, so that their performance will be maximum in the match, especially during in the training centre. This study was aimed at determining the sleep quality of athletes in the training centre. This research was conducted in the athlete training centre of Kota Madya Denpasar on the athletics, badminton, and bicycle racing athletes who underwent training concentrations for the 2017 PORPROV (Bali Province Sport Games) preparation. The study used quantitative descriptive design. The assessment of sleep quality used PSQI (The Pittsburgh Sleep Quality Index) questionnaire. Based on the results of the study, it found that the sleep quality of each sport was different. In general, 50% of the athletes had a good sleep quality and 50% of the athletes had a bad sleep quality. Based on the type of sports, 40% of athletics athletes had a good sleep quality, while 60% of them had a bad sleep quality. 55% of bicycle racing athletes had a good sleep quality and 45% of them had a bad sleep quality. 64% of badminton athletes had a good sleep quality and 36% had a bad sleep quality. It concludes that half of the athletes who underwent the training concentration had sleep disorders with different percentages for each sport.

Keywords: athlete, training center, sleep quality

I. INTRODUCTION

The performance condition of an athlete is determined by the optimal balance of training and rest. The training that an athlete undergoes is one form of physical stressor. The training centre essentially provides physical pressure regularly, systematically and continuously so that it can improve the physical ability of the athletes. When undergoing training centre, the athletes can experience training and recovery imbalances. This condition can take place continuously so that it has an impact on physical stress conditions for the athletes. An imbalance of Hypothalamic-Pituitary-Adrenal cortex axis (HPA axis) is due to prolonged stress condition [1]. Furthermore, it will cause changes in the sleeping cycle to sleeping disorder [2,3] which will result in repeated stress.

Athletes in the training centre are one group of people who often experience sleeping disorder. The research conducted before by Juliff LE et.al stated, more than half of the athletes experienced worse than usual sleep during the last 12 months of exercise [4]. Another study by LeBlanc also showed that there was sleeping disorder on the athletes during the match preparation [5]. The research on the athletes’ cortisol level found an increase on cortisol level for the subjects who underwent heavy intensity training within 8 weeks significantly [6]. A study on 15-25 years samples undergoing 4 weeks of aerobic exercise with medium intensity, found significant increase on the cortisol hormone [7].

Data collection on the sleep quality of athletes is important to prepare athletes having their best condition at the time of the match. The training centre condition of the athletes will change the training intensity, duration and responsibility. This study aims to determine the sleep quality of the athletes in the training centre.

II. METHOD

This study used quantitative descriptive observational method to determine the sleep quality of the athletes in the training centre. Both subject characteristics and sleep quality examination were carried out at the athletes training centre of Kota Madya Denpasar starting from June to November 2017. The sample used in this study were all athletes of Kota Madya Denpasar of athletics, badminton and bicycle racing athletes who underwent training concentration in preparation for 2017 PORPROV.

The study was carried out in the athlete training centre that had lasted for 1 month. Of the total athletics athletes, bicycle racing and badminton, there were 64 athletes who met the criteria and were willing to become research samples. Data collection characteristics were carried out first. Sleep quality examination was carried out using PSQI questionnaire with 7 components examination, namely latency, duration, quality, efficiency of sleep habits, sleep disorder, the use of sleeping pills, and the disruption of body function during the day [8]. Sleep quality assessment is good if the PSQI score is ≤ 5 and sleep quality is bad if the PSQI score is > 5. The results of the study are presented in quantitative descriptive regarding the sleep quality of the athletes in the training centre.

III. RESULTS AND DISCUSSIONS

Based on the conducted research, the results of the subject characteristics are as follows. (See Table 1)

Athletes of athletic sports were 46.9%, bicycle racing 31.2% and badminton 21.9% with median age of 16.5 years. The percentage of sex is 57.8% male and 42.2% female.
Based on the examination of sleep quality using the PSQI questionnaire, by distinguishing good sleep quality with PSQI value ≤ 5 and bad sleep quality with PSQI value>5, the following results were obtained.

Based on the results of sleep quality examination, it was found that half of the samples (50%) of athletes who took part in training centre had bad sleep quality. Condition like this is related to the athlete condition changes. The results of this study are similar to the previous studies which found that athletes with greater age, i.e. 15 to 19 years old, had worse sleep quality than those aged 10 to 14 years old, namely 1.26: 1 [10]. The explanation that can be given is that in older age groups, it is associated with emotional modulation, the lack of sleep is related to daily stress and the aspects of social relations [10].

In these three sports, there is a difference in the percentage of bad sleep quality events. Athletes who experience bad sleep quality from athletic are as much as 56.2%, bicycle racing are as much as 28.1% and badminton are as much as 15.6%. These three sports are the sport that competed in Bali 2017 PORPROV and included in sports that have equal level of training responsibility. The energy needs of these three sports are almost the same [12].

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IV. CONCLUSIONS

Based on the results of the study, it can be concluded that half of the athletes who underwent training concentration had bad sleeping quality, with percentage difference seen from the aspects of age, sex and type of sports.

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