Menstruation Cycle: Does it affect the Volley Ball Athletes’ Physical Condition and Performance?

B Tarigan*, R Pratiwi
Faculty of Sport and Health Education, Universitas Pendidikan Indonesia

*beltasartarigan@upi.edu

Abstract. The objectives of the present study are to know how far the decrease in the performance and physical condition of the volley ball athletes’ in their menstruation cycle. An ex post facto causal comparative research method and 12 volley ball athletes as samples were employed. The findings of the research show that the decline rate in the athletes’ physical condition in the pre-menstruation phase is 39.1%, in the menstruation phase is 47.1%, and post-menstruation phase is 27.9%. In addition, the decline in the athletes’ performance in the pre-menstruation phase is 35.4%, in the menstruation phase is 46.6%, and post-menstruation phase is 29.5%. From the findings, it can be concluded that the menstruation phases affect the volley ball athletes’ physical condition and performance.

1. Introduction
Volley ball is one of the sports, which needs a good performance and physical condition. A long organized, focused, and continuous process of the practice is essential in attaining the highest point of achievement in volley ball. It is started by the organized, focused, and well planned practice and the comprehension of physical, technical, tactical, and mental aspects. Generally, there are many coaches and athletes believe that the best achievement can be attained by unlimited practice and simply prioritized the physical, technical, and tactical aspects. However, the physiology factors affect the attainment of the best achievement as well, for instance menstrual cycle. The menstruation cycle is the women monthly cycle which occurs every month. This cycle is a complex chain of events which affect each other and happen simultaneously. According to Seeley et al. (2000, p. 1042), “The term menstrual (men'troo-al) cycle technically refers to the cyclic changes that occur in sexually mature, non-pregnant females and culminate in menses.” Wilson (1990, p. 337) explains that “this is a series of events, occurring regularly in females every 26 to 30 days throughout the childbearing period of about 36 years.” Before the menstruation cycle, there is a syndrome called Pre-menstrual Syndrome (PMS). It is a group of syndromes which is caused by the hormonal change that related to the ovulation cycle such as the release of egg cells from the ovaries and menstruation. The syndrome will disappear at the beginning of menstruation phase until several days after the menstruation phase. Gaion and Vieira (2011) explain that premenstrual Syndrome (PMS) is a set of persistent and uncomfortable emotional and physical symptoms that negatively affect the behavior of women during their premenstrual period. Premenstrual symptoms may include, but are not limited to: depression, anxiety, irritability, confusion, explosive anger, isolation, breast pain, abdominal discomfort, edema, and others. The problems which are occurred by the menstruation cycle affect the performance of an athlete during a competition. The symptoms such as breast pain and abdominal discomfort affect the
athlete’s physical condition. Besides that, the occurrence of the psychological symptoms affects the athlete’s performance as well.

1.1. Menstruation Cycle
The menstruation cycle is a multifaceted sequence of events that affect each other and occur concurrently. According to Seeley et al. (2000, p. 1042), “The term menstrual (men’etroo-al) cycle technically refers to the cyclic changes that occur in sexually mature, non-pregnant females and culminates in menses.” Bobak (2004) divides the menstruation cycle into three stages such as: 1) Endometrial cycle, 2) Ovulation cycle, and 3) Hypothalamic-pituitary cycle. The endometrial cycle consists of four phases, menstruation phase, proliferation phase, secretion phase (Luteal), and ischemia phase (Premenstrual).

1.2. Physical Condition
Physical condition is an important aspect in the practice programs. Physical activities are the sequence of two or more physical components or a combination of several physical components. According to Pesurnay & Sidik (2006, p. 100) physical condition is “all physical ability that determine the achievement, which is done through personal abilities (ability and motivation).” The success of a competition requires a perfect skill within the situations that causes the high level of physical stress. Therefore, it is clear that the physical condition plays an important role in the optimal performance improvement.

1.3. Performance
In every aspects of sport performance, the goal setting is something should be attained by an athlete with the intention of accomplishing the highest achievement. Based on Jonassah (2015), setting the outcome goal is very important, as well as setting the performance and process goal. From this statement it can be known that outcome goal is the final objective, whereas performance and process goal are the way which can be done to increase the possibility to attain the desirable final objective. The setting of the performance and process goal allow the athletes to monitor themselves thoroughly at the end of competition or training, either win or lose as the final results. The athletes can evaluate themselves why they win or lose and identify the things that can be improved. Another benefit of setting the performance and process goal is that those objectives will be more controllable better than the outcome goal. Thus, the occurring anxiety can be decreased. One of the factors that can increase the anxiety is the lack of perceived control. Perceived control is someone’s perception in some extent to which a person feels that he or she has control over a situation or condition.

2. Methods
The research method is a way which employed by the researcher to collect the data to be investigated with the purpose of attaining the research objectives. This study employed ex post facto causal comparative research method. Population, as described by Lutan (2007, p. 82), is”the group of subjects needed by researchers, i.e.s group where researchers want to generalize the findings of his research.” It means population is a group of subjects which is needed by the researchers to make a generalization of the research findings. The population of the present study is the Student Activity Unit of UPI volley ball athletes, with a sample size of 12 people. The instruments used to collect the data are questionnaires about anxiety and confidence.

3. Conclusion
Based on the results of data processing and analysis, the findings show that the decline rate of the athletes’ physical condition in the pre-menstruation phase is 39.1%, in the menstruation phase is 47.1%, and post-menstruation phase is 27.9%. In addition, the decline of the athletes’ performance in the pre-menstruation phase is 35.4%, in the menstruation phase is 46.6%, and post-menstruation phase is 29.5%. This description is shown in Table 1, as follows:
Table 1. The Influence of Menstruation Cycle to The Decline of The Athletes’ Physical Condition and Performance

| No | Menstruation Cycle  | Physical Condition Decline | Performance Decline |
|----|---------------------|-----------------------------|---------------------|
| 1  | Pre-menstruation    | 39.1%                       | 35.4%               |
| 2  | Menstruation        | 47.1%                       | 46.6%               |
| 3  | Post-menstruation   | 27.9%                       | 29.5%               |

From the research findings, it can be concluded that the menstruation phases affect the decline of volleyball athletes’ physical condition and performance.

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