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Comparison of Knowledge and Hydration Awareness on Adolescent Soccer Athletes

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***Abstract*— Abstract. Soccer is a sport type that is done for long time duration. Therefore, it is important for soccer athletes to maintain the adequacy of body fluids so that sports performance is maintained properly. The purpose of this study is to determine the level of knowledge and hydration awareness of adolescents soccer athletes. The method used in this study was quantitative descriptive. A knowledge and hydration awareness questionnaire were used as research instrument. The research subject consists of 18 boys selected by purposive sampling technique. Data were analysed using mean, standard deviation and percentage. The result data showed that the average of hydration knowledge level of 59,72 included in good category and hydration awareness level equals to 55,6 including in good category. Such phenomena was meant to be positive because with a high level of hydration knowledge and awareness, the athletes could reduce the risk of dehydration and decrease performance during exercise.**

***Keywords*— Awareness; Hydration; Knowledge**

I. INTRODUCTION

The fact shows that there are many athletes who didn't recognize the importance of hydration for their physique. Athletes don't drink water since there is a myth that drink water during the exercise could make the stomach cramps, it shows the lack of knowledge and awareness of hydration [1]. Athletes education level and the knowledge of hydration influence the hydration pattern during exercise [2]. Lopez's findings gives support to the claim that giving the chance for athletes to fulfill their liquid necessities will empower them to practice securely and perform greatly [3].

It is important for athletes to maintain sufficiency of water or hydration status during exercise. In the body, the function of water are maintain the flows and tension of the blood, lubricate the joints and tissues and facilitate the digestion process and many other functions. It so important to fulfill the body fluids well because the 70% composition of our body consists of fluids [4]. Dehydration or losing fluid in a large number in the body could cause thirst, decrease urination, damage to physical performance, the pain of muscle, increase respiration and pulse and also weakened the body. Dehydration could make hypotension, weaken the part of body and sometimes it will cause fainting [5]. If dehydration lasts for a long time, there will be a shift of intracellular fluid out of cells, and to repair it takes a long time [6]. The body will reach its limit if 20% of water in the body is lost, it begin with the organs of the body won't work and may end in death [7].

There is a support for the claim that there was a significant change of hydration level before and after training [1]. It can be concluded that training for a long time increases the risk of dehydration [8]. Especially for the type of exercise done outdoors where exposed by sunlight directly and done in a long time duration. Soccer is one of such examples. From the fact above, it shows that soccer athletes are susceptible to dehydration if couldn't fulfill the needs of water properly. It impacts to the decrease of body performance and other negative impacts.

Therefore, it is important for athletes to always fulfill the needs of body fluids optimally, during and after training or physical activity. Individuals can fulfill the needs of the liquid properly when the two terms are satisfies, the first is a good knowledge of the importance of hydration in the sport, and the second is a good level of awareness of the needs hydration during sport. It is impossible for athletes to fulfill the needs of body fluids during exercise without having the knowledge and awareness of good hydration. The purpose of this research is to know the comparative level of knowledge and awareness of adolescent soccer athletes related sports hydration.

II. METHOD

This research was used descriptive quantitative approach. The subjects in this study are the Hizbul Waton soccer player from Lamongan under 17 age groups consists of 18 people that chosen by purposive sampling. The main criteria of the research subject were the players who regularly join the exercises 3 times a week for the last two months. All athletes are required to give an honest answer in accordance with their hydration routine. Data was obtained by using questionnaire Likert scale to find out the level of knowledge and awareness of hydration. Data analysis techniques used mean, standard deviation, and percentage.

III. RESULTS

The result of athletes' hydration knowledge and awareness was obtained through 15 questions consists of 8 questions about hydration knowledge and 7 questions about hydration awareness. The data were processed using Microsoft Excel 2016. Table 1 shows the results of the data.

TABLE 1. THE RESULT VALUE OF THE KNOWLEDGE OF ATHLETES ABOUT HYDRATION

The range of values (Point)	Category	Frequency	Percentage
65,7 – 80	Very Good	4	22,22
51,3 – 65,6	Good	9	50
36,9 – 51,2	Fair	5	27,77
22,5 – 36,8	Less	0	0
8 – 22,4	Poor	0	0

The data shows that the majority of athletes are in the good knowledge results category by the percentage of 50%. The percentage of fair category is more than the percentage of very good category. It shows by a comparison of the percentage of 27.77% and 22.22%. Based on the data in Table 1, it can be inferred that the adolescent soccer athletes have a good hydration level of knowledge. This is a very positive thing, because with a good hydration knowledge then expected athletes will have an awareness of good hydration also.

TABLE 2. THE RESULTS VALUE OF THE AWARENESS OF ATHLETES ABOUT HYDRATION

The range of values (Point)	Category	Frequency	Percentage
57,5 – 70	Very Good	8	44,44
44,9 – 57,4	Good	8	44,44
32,3 – 44,8	Fair	2	11,11
19,7 – 32,2	Less	0	0
7 – 19,6	Poor	0	0

Table 2 shows that most of hydration awareness result are in the good and very good category by the percentage of 44.44%. Only 11.11% in the fair category. Based on the data in Table 2, it can be inferred that the adolescent soccer athletes have a good hydration level of awareness. This is a very positive thing, because with a good hydration awareness then expected athletes will be able to maintain the adequacy of liquid, during and after exercise. The athletes could avoid the risk of dehydration and other physical disorders by fulfill the needs of body fluids.

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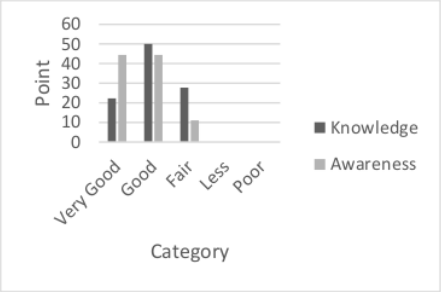

Figure 1: A Comparison of the Knowledge and Awareness of the Athletes about Hydration

Figure 1 shows that athletes have a level of knowledge and understanding of hydration tends to be good and very good. Only a few of athletes that the level of knowledge and understanding are in fair category. Based on Figure 2, it can be inferred that the teenage soccer athletes have the good level of hydration knowledge and awareness. This is a very positive thing that can be used to face the match or championship in sports achievement.

TABLE 3. A COMPARISON OF THE AVERAGE VALUE OF THE KNOWLEDGE AND AWARENESS OF THE ATHLETES ABOUT HYDRATION

	Point of Hydration			
	Min	Max	Rate	Category
Knowledge	43	77	59,72 ± 10,77	Good
Awareness	40	67	55,67 ± 9,06	Good

Table 3 shows that the average athletes have higher knowledge value than awareness value of hydration. There is a difference in the value of 4.05 level of knowledge and awareness among athletes about hydration. Though it did not differ significantly, however, it shows the important fact that the level of athletes hydration awareness is slightly lower than the knowledge of the athletes.

IV. DISCUSSION

Sport achievements is a sport activity that is competitive and tight in an effort to achieve victory through the game or competition. Due to its highly competitive then the athletes must prepare himself properly, includes physically, techniques, tactics and mental. It must be trained and kept good during the workout, race or championship through the role of the coach.

Soccer as a form of sport achievements also demand a competitive role as sports picture achievements in general. As a popular team sport and done in a long time duration, so it has a huge risk of losing body fluids during soccer activities. Moreover, it is known that many soccer done in an environment with a risk of exposure to the sun directly with the various temperature and humidity levels. Doing exercise in a hot environment and high humidity increases the risk of heat injury [9]. Heat injuries brought a negative impact to the athletes that

is can lead to the occurrence of heat cramps, fainting, heat exhaustion, heat stroke up to the risk of death.

The research shows that when practising in the cold environment, the teenage soccer athletes used fluids amounted to 1.7% of the mass of the body or equivalent with the fluid deficiency of 0.5% [8]. Moreover, when the athletes trained in the outdoor environment such as in Indonesia then the risk of losing fluids will be a greater impacts against the increased risk of dehydration. The point is the athletes losing body fluids while exercising [10, 11, 12].

The term dehydration defined as water shortage. The loss of water is always accompanied by the loss of electrolyte [13]. The composition of fluid in our body is 70%, therefore, it is important to fulfill the body fluids well [4]. When the athletes losing their body fluids in certain levels, it will disturb the athletes' physical. The results showed that dehydration brought negative impact to the athletes. If athletes exercise in a dehydrated condition impacts a greater cellular and whole body stress, which in turn may elicit an enhanced training adaptation. However, this greater cellular and whole body stress includes the increase core temperature that decrease performance and attention significantly needs to be paid to hydration status and cooling strategies during competitions [14].

The previous discussion shows that athletes tend to become dehydrated during exercise [11]. This is due to the high risk of dehydration during exercise [8, 10]. The results showed that there was a significant change of hydration level before and after training. It can be concluded that training for a long time increases the risk of dehydration [1]. Therefore, attention should be given to fluid supplementation and individualization of fluid intake for each athlete [15].

The level of knowledge and education of athletes about hydration affects the hydration pattern during exercise [2]. Provide a direction to athletes about their own fluid needs will enable athletes to exercise safely and perform well [3]. Improving hydration status by ad libitum consumption of water can enhance performance in young children exercising in the heat [16]. The status of hydration can be found out through urine colour, urine specific gravity (USG) (laboratory, strip, refractometry), and osmolality [17].

The fulfilment of the needs of individual fluid associated with various factors, those are the intensity level of exercise, the duration of exercise, the level of individual sweat, temperature and moisture environment, and acclimatization level to the heat. On these grounds, we can argue that it was important for athletes to have a good knowledge about the colour of the urine, the status and importance of sufficiency of good hydration before, during, and after the exercise, the risk and disruption due to dehydration as well as ways to minimize the occurrence of dehydration of athletes.

The importance of hydration adequacy knowledge can help athletes in having high hydration levels of awareness because the most important thing is the level of awareness of the needs for hydration. The data result of this research provide a strong evidence that although athletes have a good hydration level of knowledge, it would be useless if not balanced by an awareness of good hydration. It will make athletes experiencing dehydration well before, during, and after exercise. Therefore, it takes knowledge and a good hydration awareness so that athletes can practice optimally and safe conditions [3, 18].

V. CONCLUSION

The level of knowledge and hydration awareness of adolescent soccer athlete has been investigated. It can be concluded that (1) the athletes have a good level of hydration knowledge. (2) the athletes also have a good level of hydration awareness. (3) though are equally good, but the level of hydration awareness of athletes is lower than its own knowledge.

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