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Judul artikel : Comparison of Knowledge and Hydration Awareness on Adolescent Soccer Athletes

Prosiding : Proceedings of the Mathematics, Informatics, Science, and Education International Conference (MISEIC 2018)

Penulis : Kunjung Ashadi, Rangga Lutfi Fachri, Gigih Siantoro, Donny Ardhi Kusuma, Agus Hariyanto, I Dewa Made Kusuma

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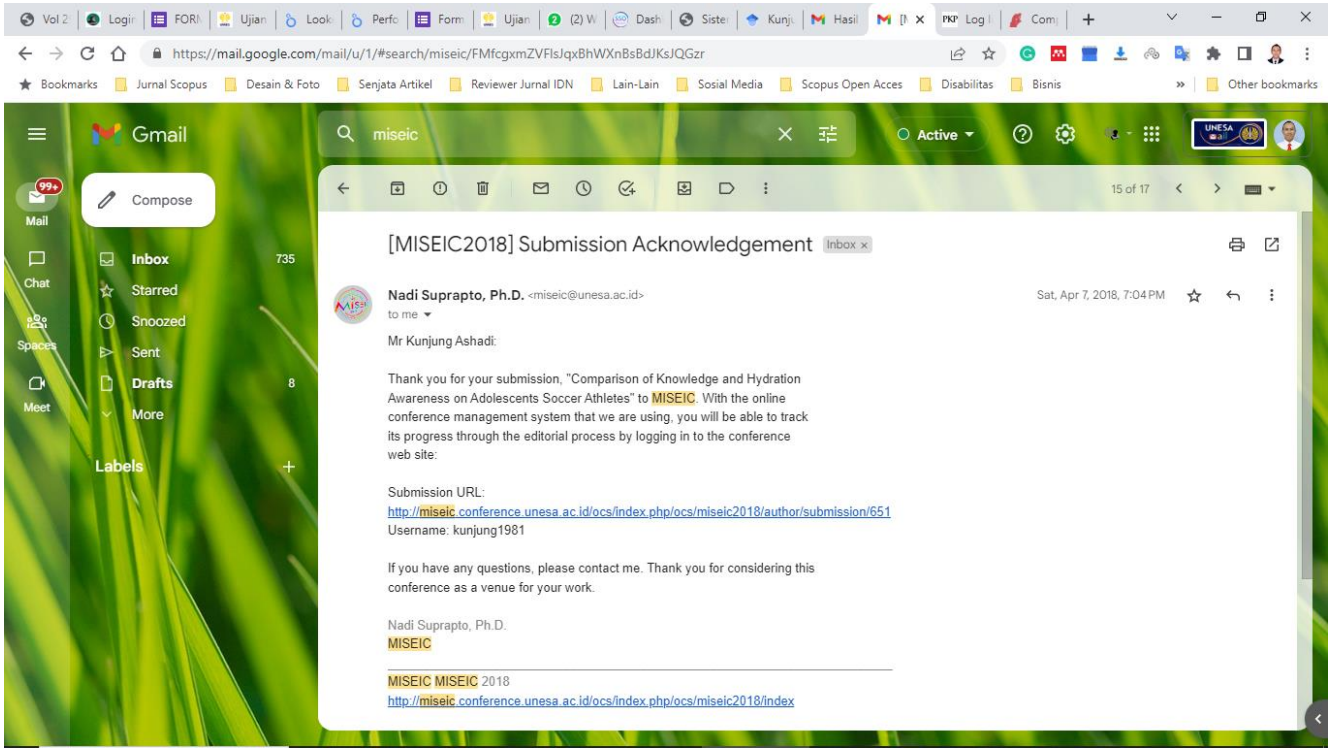

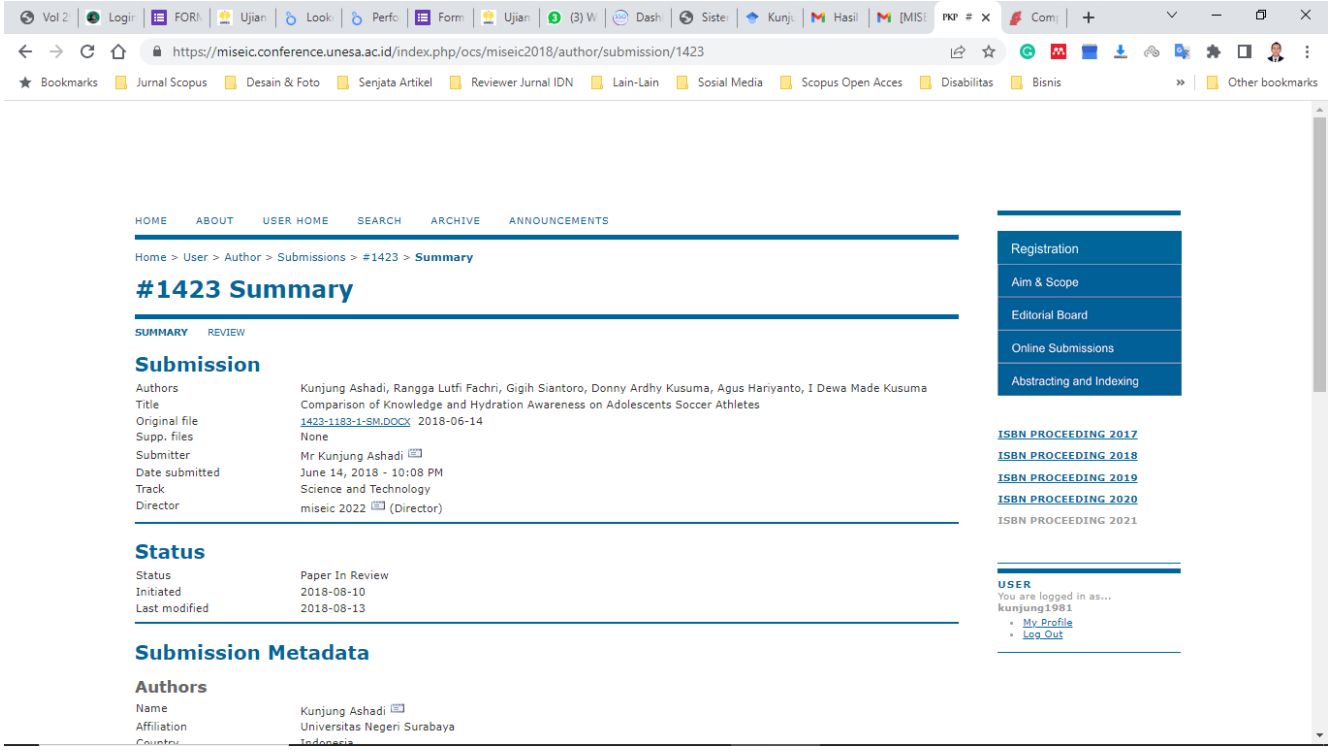

Comparison of Knowledge and Hydration Awareness on Adolescents Soccer Athletes

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Universitas Negeri Surabaya, Indonesia
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Abstract. Soccer is a sports 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 the study is to determine the level of knowledge and hydration awareness of adolescents soccer athletes. The method used in this research is quantitative descriptive. A hydration knowledge and awareness questionnaire are used as a research instrument. The sample of research is 18 boys selected by purposive sampling technique. Data were analyzed using mean, standard deviation and percentage. The result data showed that the average hydration knowledge level of 59,72 included in good category and hydration awareness level equal to 55,6 including in good category. The fact above is a positive thing because with a high level of hydration knowledge and awareness then athletes can reduce the risk of dehydration and decreased performance during exercise.

1. Introduction

In view of perceptions in the field is referred to will many athletes who are less importance of hydration to that physique. Athletes who don't convey drinking water, asking to a drink from claiming companions and what's more also those myth that drinking water could make stomach cramps throughout exercise is an actuality that reveals to low knowledge and awareness of hydration during exercise [1]. Those athletes level of education and knowledge of hydration influences that hydration pattern throughout exercise [2]. Giving heading to athletes over their liquid necessities will empower them to practice securely and perform great [3].

It important for athletes to maintain sufficiency of water or hydration status during exercise. In the body of water serves to maintain blood flow and pressure, lubricate the joints and tissues and facilitate the digestion process and many other water functions. It so important to meet the body fluids well because 70% composition of our body consists of fluids [4]. Dehydration or a large number of losing fluid in the body could cause thirst, decreased urination, damage to physical performance, the pain of the muscle, increased respiration and pulse and weakened the body. Dehydration can force low tension, weaken the limbs and sometimes will be causing fainting [5]. If dehydration lasts for a long time there is a shift of intracellular fluid out of cells and to repair it takes a long period [6]. The body will reach its limit once 20% of water within the body is lost, that is once all organs within the body won't work and may end in death [7].

The research showed 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 to sunlight directly and done in a long time duration. Soccer is one of the examples and types of exercise above. By observing the above facts then known that soccer athletes susceptible to dehydration if not able to meet the needs of the body fluids properly. When this happens the impact will decline the performance of body and other negative impacts.

Therefore, it is important for athletes to always meet the needs of body fluids optimally before, during and after training or sporting events. Individuals can meet the needs of the liquid properly when the two terms are met i.e. has a good knowledge of the importance of hydration in the sport. Second, have a good level of awareness needs hydration during sport. Without having the knowledge and awareness of good hydration impossible athletes will meet the adequacy of body fluids during exercise. The purpose of this research is to know the comparative level of knowledge and awareness of adolescent soccer athletes related sports hydration.

2. Method

This research uses descriptive quantitative approach. The subjects in this study is the Hizbul Waton soccer player Lamongan under 17 age groups consist of 18 people that chosen by purposive sampling. The main criteria being the sample of the research was the player who regularly follow the exercises 3 times a week for last of two months. To obtain an accurate answer then all athletes are required to give an honest answer and in accordance with the custom of their hydration routine done before. Data obtained using questionnaire likert scale with used to find out the level of knowledge and awareness of hydration. Data analysis techniques using mean, standard deviation, and percentage.

3. Result

The result of the knowledge and awareness of athlete hydration obtained through 15 questions consisting of 8 questions about knowledge and 7 questions about awareness of hydration. The data were processed using Microsoft Excel 2016. The results of the data shown here.

Table 1. The result value of the knowledge of the athletes about hydration

The range of values (Point)	Category	Frequency	Percentage
65,7 – 80	Very Good	4	22,22
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Based on table 1 then it is known that the majority of athletes are on the good knowledge results category either by a percentage of 50%. The amount of the percentage with fair category more than very good categories categories very well. It is shown 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 of the value awareness of athletes about hydration

The range of values (Point)	Category	Frequency	Percentage

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44,9 – 57,4	Good	8	44,44
32,3 – 44,8	Fair	2	11,11
19,7 – 32,2	Less	0	0
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Based on table 2 noted that the majority of results awareness of hydration are in the good and very good category and well demonstrated by the percentage of 44.44%. Only 11.11 percent remaining 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 before, during and after exercise. With satisfy bodily fluids with good then the athletes can avoid the risk of dehydration and other physical disorders.

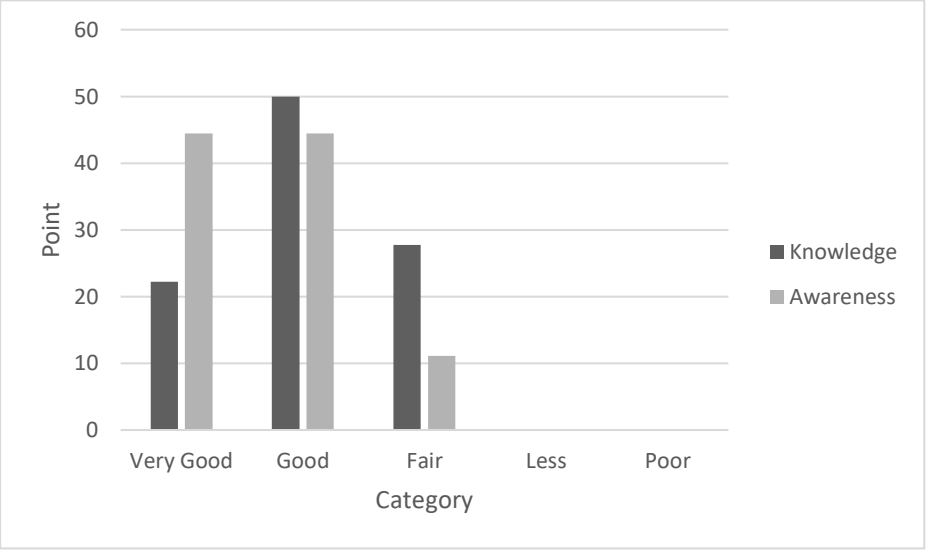

Figure 1. A comparison of the knowledge and awareness of the athletes about hydration

Based on Figure 1 note that athletes have a level of knowledge and understanding of hydration tends to be very good and very good. Only a few athletes that level of knowledge and understanding are in a category is fair. Based on Figure 2 then it can be inferred that the teenage soccer athletes have the level of knowledge and awareness of good hydration. This is a very positive thing that can be used as one of the capital in the face of a 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

Based on table 3 Note that average athletes have higher knowledge value compared to the value consciousness of hydration. There is a difference in the value of 4.05 level knowledge and awareness among athletes about hydration. Though it did not differ significantly, however, it is known that important fact shows that the level of awareness of the hydration of athletes is slightly lower than the knowledge possessed by the athletes.

4. Discussion

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

Soccer as a form of sports achievements certainly also demand a competitive role as sports picture achievements in general. As a popular team sport and done in a long time duration than the 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 temperature and humidity levels vary greatly in each area. Exercise in a hot environment and high humidity increases the risk of heat injury [9]. Heat injuries brought a negative impact to the athlete that is can lead to the occurrence of heat cramps, fainting, heat exhaustion, heat stroke up to the risk of death.

Research shows that while practising in the cold environment of teenage soccer athletes undergoing fluids during exercise amounted to 1.7% of the mass of the body or equivalent fluid deficiency of 0.5% [8]. Moreover, when the athletes trained in the outdoor environment such as in Indonesia this then by all means the risk of loss of the fluid will be a greater impact against the increased risk of dehydration for the athletes. The bottom line is the athlete suffered a loss of bodily fluids while exercising [10, 11, 12].

The term dehydration is literally water shortage. The loss of water is always accompanied by loss of electrolyte [13]. The composition of our body 70% consists of fluid, therefore, it is important to meet the body fluids well [4]. When athletes experience a loss of bodily fluids in certain levels then it will happen disturbances on the athlete's physical. The results showed that dehydration brought negative impact to the athletes. If athletes exercise in a dehydrated condition induce a greater cellular and whole body stress, which in turn may elicit an enhanced training adaptation. However, this greater cellular and whole body stress including an elevated core temperature significantly decrease performance and attention needs to be paid to hydration status and cooling strategies during competitions [14].

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]. Providing 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]. How to find out the status of hydration can be with urine colour, urine specific gravity (USG) (laboratory, strip, refractometry), and osmolality [17].

The fulfilment of the needs of individual fluid associated with various factors, among others, the level of intensity of exercise, the duration of the exercise, the level of variability of individual sweat, temperature and moisture environment, and acclimatization level to heat. Therefore, it is 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 exercise, risk and disruption due to dehydration as well as ways to minimize the occurrence of dehydration in athletes.

With a good knowledge of the importance of hydration adequacy then expected athletes have high hydration levels of consciousness because the most important thing is the level of awareness of the needs for hydration as well. Although athletes have a good hydration level of knowledge it would be useless if not balanced by an awareness of good hydration. Doing so will make the athletes experiencing dehydration well before, during and after sports. Therefore, it takes knowledge and a good hydration awareness so that athletes can practice optimally and safe conditions [3, 18].

5. Conclusion

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.

Acknowledgement

The authors would like to thank the Universitas Negeri Surabaya for the support of research publication.

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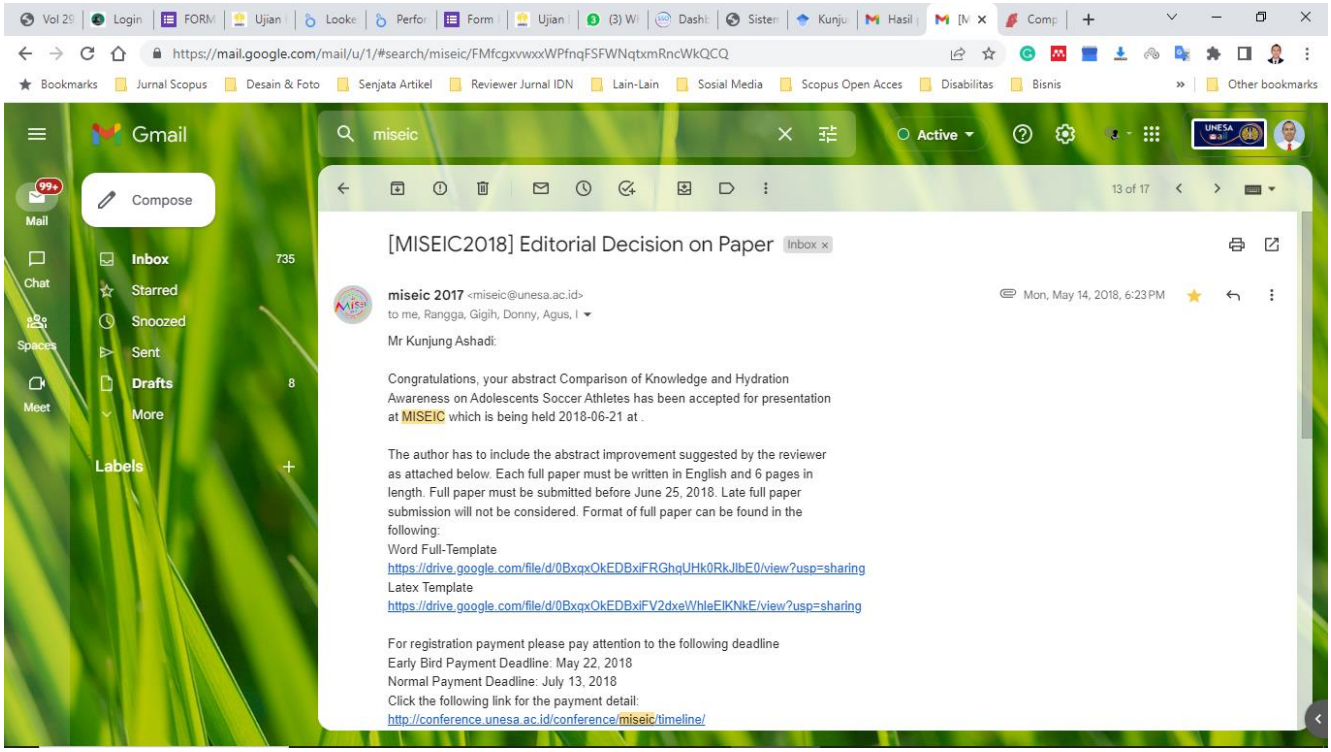

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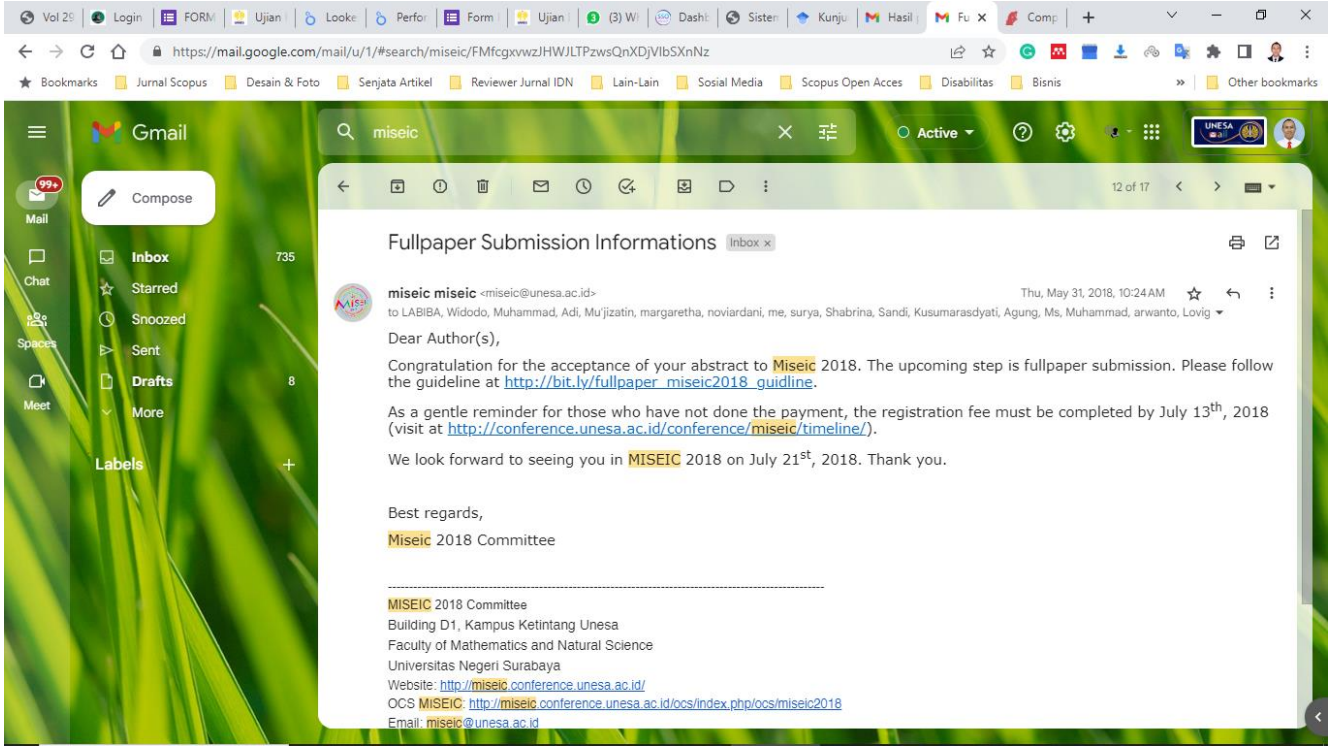

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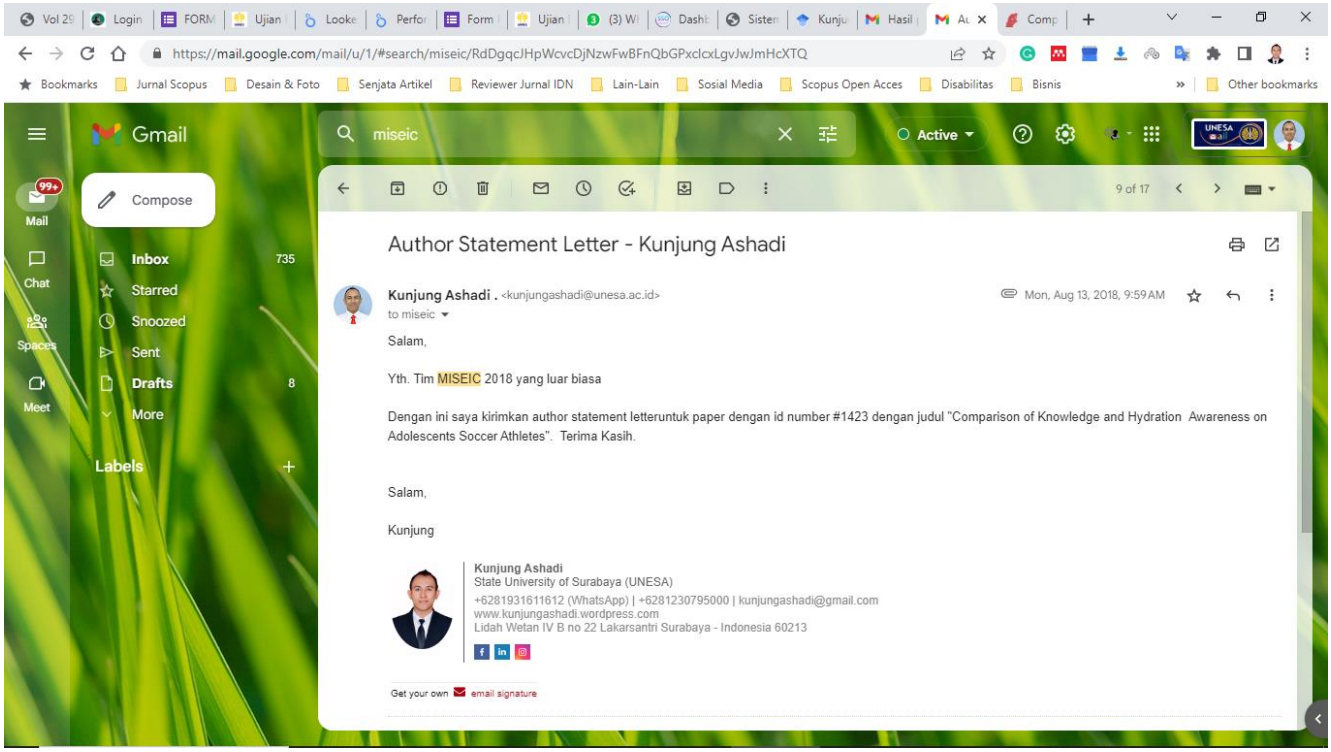

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Salam,

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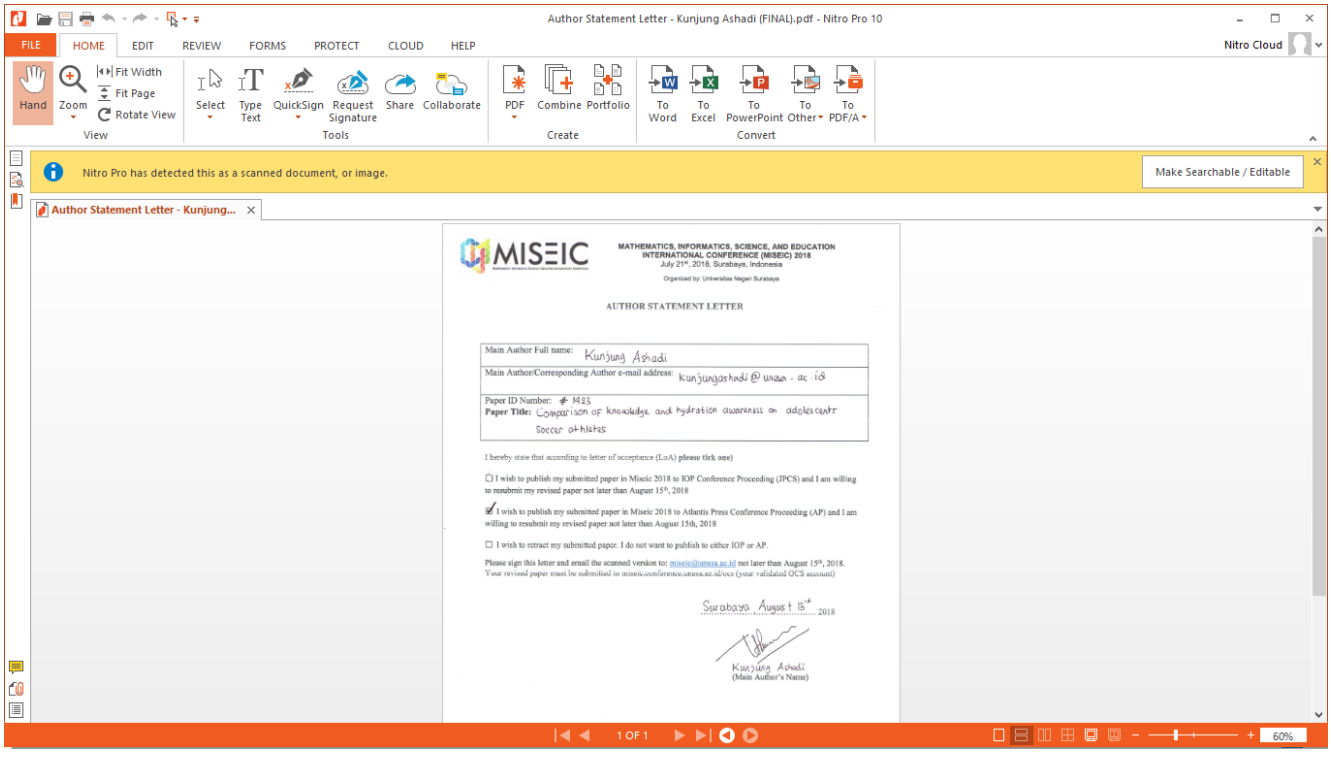

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19,7 – 32,2	Less	0	0
7 – 19,6	Poor	0	0

Based on table 2 noted that the majority of results awareness of hydration are in the good and very good category and well demonstrated by the percentage of 44.44%. Only 11.11 percent remaining 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 before, during and after exercise. With satisfy bodily fluids with good then the athletes can avoid the risk of dehydration and other physical disorders.

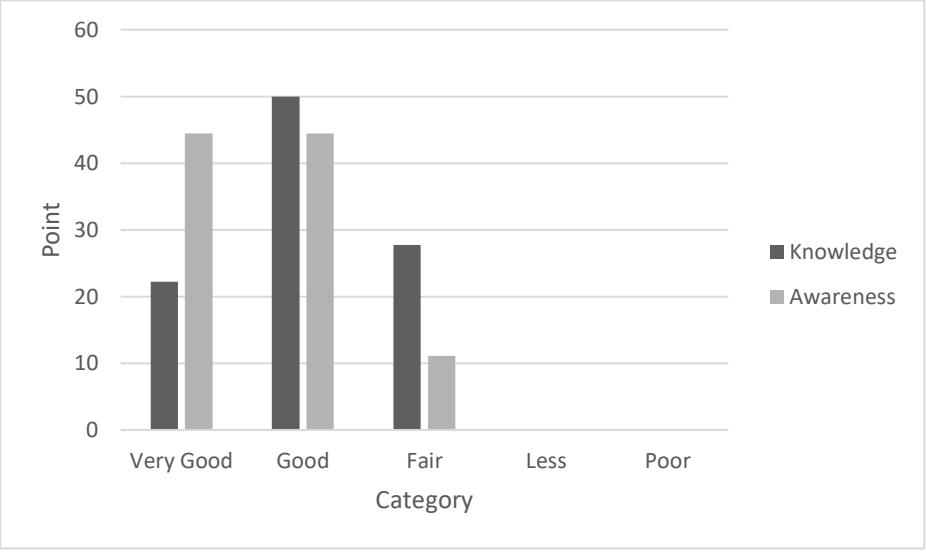

Figure 1. A comparison of the knowledge and awareness of the athletes about hydration

The data appears in figure 1 to suggest that athletes have a level of knowledge and understanding of hydration tends to be very good and very good. Only a few athletes that level of knowledge and understanding are in a category is fair. Based on Figure 2 then it can be inferred that the teenage soccer athletes have the level of knowledge and awareness of good hydration. This is a very positive thing that can be used as one of the capital in the face of a 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

Based on table 3 Note that average athletes have higher knowledge value compared to the value consciousness of hydration. There is a difference in the value of 4.05 level knowledge and awareness among athletes about hydration. Though it did not differ significantly, however, it is known that important fact shows that the level of awareness of the hydration of athletes is slightly lower than the knowledge possessed by the athletes.

9. Discussion

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

Soccer as a form of sports achievements certainly also demand a competitive role as sports picture achievements in general. As a popular team sport and done in a long time duration than the 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 temperature and humidity levels vary greatly in each area. Exercise in a hot environment and high humidity increases the risk of heat injury [9]. Heat injuries brought a negative impact to the athlete that is can lead to the occurrence of heat cramps, fainting, heat exhaustion, heat stroke up to the risk of death.

Research shows that while practising in the cold environment of teenage soccer athletes undergoing fluids during exercise amounted to 1.7% of the mass of the body or equivalent fluid deficiency of 0.5% [8]. Moreover, when the athletes trained in the outdoor environment such as in Indonesia this then by all means the risk of loss of the fluid will be a greater impact against the increased risk of dehydration for the athletes. The bottom line is the athlete suffered a loss of bodily fluids while exercising [10, 11, 12].

The term dehydration is literally water shortage. The loss of water is always accompanied by loss of electrolyte [13]. The composition of our body 70% consists of fluid, therefore, it is important to meet the body fluids well [4]. When athletes experience a loss of bodily fluids in certain levels then it will happen disturbances on the athlete's physical. The results showed that dehydration brought negative impact to the athletes. If athletes exercise in a dehydrated condition induce a greater cellular and whole body stress, which in turn may elicit an enhanced training adaptation. However, this greater cellular and whole body stress including an elevated core temperature significantly decrease performance and attention needs to be paid to hydration status and cooling strategies during competitions [14].

The foregoing discussion implies 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]. Providing 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]. How to find out the status of hydration can be with urine colour, urine specific gravity (USG) (laboratory, strip, refractometry), and osmolality [17].

The fulfilment of the needs of individual fluid associated with various factors, among others, the level of intensity of exercise, the duration of the exercise, the level of variability of individual sweat, temperature and moisture environment, and acclimatization level to heat. On these grounds, we can argue that it is 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 exercise, risk and disruption due to dehydration as well as ways to minimize the occurrence of dehydration in athletes.

With a good knowledge of the importance of hydration adequacy then expected athletes have high hydration levels of consciousness because the most important thing is the level of awareness of the needs for hydration as well. The data yielded by this study provide 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. Doing so will make the athletes experiencing dehydration well before, during and after sports. Therefore, it takes knowledge and a good hydration awareness so that athletes can practice optimally and safe conditions [3, 18].

10. Conclusion

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.

Acknowledgement

The authors would like to thank the Universitas Negeri Surabaya for the support of research publication.

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