

The Awareness of Hydration Knowledge on Gender Differences Among UiTM Perlis Athletes

Fatin Najihah Abd Rashid, Ellail Ain Mohd Aznan, Ahmad Dzulkarnain Ismail
& Al Hafiz Abu Bakar

*Faculty of Sports Science and Recreation, Universiti Teknologi MARA,
Cawangan Perlis, Kampus Arau, 02600 Arau, Perlis, Malaysia*

Published online: 02 June 2021

To cite this article (APA): Abd Rashid, F. N., Mohd Aznan, E. A., Ismail, A. D., & Abu Bakar, A. H. (2021). The awareness of hydration knowledge on gender differences among UiTM Perlis athletes. *Jurnal Sains Sukan & Pendidikan Jasmani*, 10(1), 39-44. <https://doi.org/10.37134/jsspj.vol10.1.6.2021>

To link to this article: <https://doi.org/10.37134/jsspj.vol10.1.6.2021>

ABSTRACT

Water is the human body's main constituent. Paucity of hydration can impair the sports performance of the athletes and cause heat problems which can harm the athletes. Therefore, maintaining proper hydration status is crucial for sports performance and general well-being of athletes. Previous study focused on hydration knowledge among difference participants and focused on one type of gender only. To date, no clear results on hydration knowledge between genders among university athletes. Therefore, the purpose of this study was to determine the hydration knowledge on gender differences among UiTM Perlis athletes. A total of 169 UiTM Perlis athletes (85 males and 84 females) were participated in this study. Athletes were asked to answer Hydration Awareness Questionnaire (HAQ) which consists of 13 items. This study utilized online survey questionnaires to assess athlete hydration knowledge. The results of this study indicate that there was no substantial difference ($p < 0.05$) observed between genders in hydration knowledge. Despite understanding the importance of keeping hydrated, the awareness between genders on the hydration knowledge was on the average. Therefore, continued efforts must be made by coaches, managers and athletes to develop and implement more effective hydration strategies.

Keywords: *Hydration, Knowledge, Gender, Athlete*

INTRODUCTION

Water is the human body's main constituent. According to Zhang and colleagues (2017), keeping optimal hydration is important in order to maintain the normal functions in the human body. Dehydration can affect sports performance and may place athletes prone to heat illness and injury. Paucity of hydration can impair the sports performance of the athletes and cause heat problems which can harm the athletes (Jenus, Pital & Wahed, 2018). Moreover, according to Ersoy, Ersoy and Kutlu (2016), it is important to evaluate hydration levels of athletes before and after the exercise. Adequate hydration is necessary to prevent from heat illness and achieve the peak performance for athletes (Magee, Gallagher & McCormack, 2017).

It was understood from preliminary research that most of the athletes are less aware on benefits of hydration towards human body. Many athletes do not fully understand about the important of hydration for their physique. There is a myth stating that drinking water during exercise will resulted in stomach cramps or stomach upset which contributed athlete's actions on refusing to drink or having water intake which demonstrates the lack of knowledge and hydration awareness among athletes (Magee, Gallagher & McCormack, 2017). Knowledge, practice and attitude are closely related, as a

good level of knowledge could have a significant effect on athletes' hydration practices and attitudes. Consequently, to enable it to be applied throughout the sports world, adequate hydration knowledge must be provided to each athlete (Sedek, Mohamad & Kasim, 2015).

Most of the previous hydration knowledge studies were conducted by focusing only in one gender. Ashadi and colleagues (2018) found that male soccer player have a good level of hydration knowledge and hydration awareness. Moreover, the study conducted by Jusoh (2014) showed 64% of the male soccer players had a satisfactory knowledge on hydration. There are ample information on male football players' nutrition and hydration practices, but it is less convenient to find information on female players (Maughan & Shirreffs, 2007). Most of recent studies have not compared the hydration habits between males and females. To date, there was no clear data on hydration knowledge among athletes between genders. Therefore, the purpose of the study is to determine the hydration knowledge on gender differences among UiTM Perlis athletes.

METHODOLOGY

Respondents and procedures

The total respondents for this study were 169 athletes. The questionnaire was distributed to 85 males and 84 female athletes from UiTM Perlis. The several terms in the questionnaire were clearly stated in the questionnaire. The survey was conducted by using an online platform, accessible through any device with internet connection. The process of data collection used in this survey was by using Google form. The link for the form was disseminated through institutional group and private social network via WhatsApp application. It was completely effective for the research objectives because it facilitated the wide dissemination of the survey questionnaire during a period where, due to the pandemic, there are many territorial restrictions. There was no request for identifying information from the respondents. The completed confidentiality of the athlete's responses was assured. It is estimated 10 to 15 minutes needed to complete the questionnaire.

Instrumentation

The questionnaire was divided into two sections. Section A was questions on demographic survey which consist of gender, age, sports and faculty. For section B, the question was adopted by Decher and colleagues (2008). The questionnaire was designed to specify the hydration knowledge related questions where they conducted a survey based on the knowledge level of youth hydration in the summer sports camps. The Hydration Awareness Questionnaire (HAQ) consist of 13 questions and was answered based on 10-point Likert scale. The scale ranging from 0 (strongly disagree) to 10 (strongly agree). Each question will assign a possible value of 10 points and a questionnaire of possible 130 points. Furthermore, a pilot study was supervised to test on the reliability and validity of the item in the questionnaire. A total of 30 people were involved on this study. The scores on HAQ exhibited a Cronbach's alpha reliability estimated of 0.70. According to Cristobal, Flavián and Guinalú, (2007) the items of corrected item-total correlation more than 0.30 are acceptable.

Statistical analyses

All descriptive data are represented in mean \pm SD. The Mann Whitney U-Test, with significant value of $< .05$ was used to test the difference on the awareness of hydration knowledge between genders. The obtained data was analyzed by using Statistical Package for the Social Sciences (IBM SPSS Statistics) version 25.0.

RESULTS

This study using descriptive statistical tools to answer the research question with objectivity as showed the following elaboration. Table 1 was the demographic data of the participants.

Table 1: Demographic data

	Percentage (%)
Gender	
Male	50.3
Female	49.7
Age	
18-20 years old	34.9
21-22 years old	42.6
23-24 years old	17.2
Above 25 years old	5.3
Faculty	
Faculty of Plantation and Agrotechnology	4.7
Faculty of Applied Science	10.1
Faculty of Sports Science and Recreation	60.9
Faculty of Computer Science and Mathematics	13.6
Faculty of Business Management	1.8
Faculty of Architecture Planning and Surveying	5.9
Faculty of Accounting	3.0

Table 2: Statistics of awareness on hydration knowledge in male athletes

	Mean	Std. Deviation
Being thirsty while exercising means my body is losing water and I need to drink.	8.34	1.855
Drinking and staying hydrated before practice and games is important.	8.78	1.599
Drinking and staying hydrated during practice and games is important.	8.47	1.797
Drinking and staying hydrated after practice and games is important.	8.74	1.634
I don't need to drink water and fluids to do my best in sports.	6.85	2.970
Hydrating means having enough fluid in your body.	8.13	2.298
I would need to drink water and fluids to replace the fluids that I lose when exercising.	8.68	1.635
If I drink enough fluids my urine should appear dark yellow in color.	6.89	3.374
I might have to consume more fluid and more regularly if the weather is really hot.	8.82	1.473
I may need to drink more fluid, and more often if I practice harder (more intensively) than usual.	8.39	1.544
When practice is longer than normal, I might need to drink more fluid.	8.48	1.630
If I lost weight after the initial exercise of I did, my weight loss may have been due to sweat.	6.69	2.536
Drinking enough water does not reduce the chances of getting a heat illness (such as heat cramps or heat exhaustion).	4.45	3.264

Table 2 indicate the statistics of awareness on hydration knowledge in male athletes. The highest mean in statistics for awareness of hydration knowledge among male athletes UiTM Perlis are “I might have to consume more fluid and more regularly if the weather is really hot.” ($M = 8.82$). For lower mean in the statistics are “Drinking enough water does not reduce the chances of getting a heat illness (such as heat cramps or heat exhaustion).” ($M = 4.45$).

Table 3: Statistics of awareness on hydration knowledge in female athletes

	Mean	Std. Deviation
Being thirsty while exercising means my body is losing water and I need to drink.	8.20	1.861
Drinking and staying hydrated before practice and games is important.	8.43	1.916
Drinking and staying hydrated during practice and games is important.	8.71	1.602
Drinking and staying hydrated after practice and games is important.	8.64	1.899
I don't need to drink water and fluids to do my best in sports.	6.75	3.085
Hydrating means having enough fluid in your body.	7.95	2.254
I would need to drink water and fluids to replace the fluids that I lose when exercising.	8.45	1.793
If I drink enough fluids my urine should appear dark yellow in color.	7.35	3.032
I might have to consume more fluid and more regularly if the weather is really hot.	8.60	1.983
I may need to drink more fluid, and more often if I practice harder (more intensively) than usual.	8.33	1.845
When practice is longer than normal, I might need to drink more fluid.	8.50	1.732
If I lost weight after the initial exercise of I did, my weight loss may have been due to sweat.	6.38	2.469
Drinking enough water does not reduce the chances of getting a heat illness (such as heat cramps or heat exhaustion).	4.87	2.798

Table 3 show the statistics of awareness on hydration knowledge in female athletes. The highest mean in statistics for awareness of hydration knowledge among female athletes UiTM Perlis are “Drinking and staying hydrated during practice and games is important.” ($M = 8.71$). For lower mean in the statistics are “Drinking enough water does not reduce the chances of getting a heat illness (such as heat cramps or heat exhaustion).” ($M = 4.87$).

Table 4: The results of the awareness of hydration knowledge between genders

	Mean
Mann-Whitney U	3483.000
Wilcoxon W	7053.000
Z	-.274
Asymp. Sig. (2-tailed)	.784

The hypothesis for this study was tested by using Mann Whitney U test. The result of Mann Whitney U test for the difference on the awareness of hydration knowledge between genders was not significant $p = 0.784 > 0.05$. Hence, the hypothesis for this study was not accepted.

DISCUSSION

The hydration awareness results were analyzed and summarized. The current study showed no significance difference between genders since UiTM Perlis athletes were generally aware about their hydration intake and could identify the important of hydration intake for practices and games in different environment. Athletes are aware of their hydration intake since majority of the athletes are from Faculty of Sports Science and Recreation, thus, having an absolute knowledge about hydration will be highly beneficial. Heaney et al.(2011) endorsed this finding that nutrition knowledge could help to increase awareness of dietary intake and hydration among athletes.

The highest mean in statistics for awareness of hydration knowledge among male athletes UiTM Perlis are “I might have to consume more fluid and more regularly if the weather is really hot.” ($M = 8.82$). When athletes train under the hot weather, the body’s homeostatic balance can be disrupted (Armstrong, 2000). Also, exercising in hot and humid temperatures can cause a 2-3°C rise in core body temperature. While for female, the highest mean is “Drinking and staying hydrated during practice and games is important.” ($M = 8.71$). According to Magee, Gallagher and McCormack (2017), maintain sufficient hydration before, during and after training and competition can help to minimize loss of fluid in the body, help to lowering the submaximal heart rate, improve performance, maintain plasma volume and also minimize the chance of getting heat related illness. The lower mean for both gender in the statistics are “Drinking enough water does not reduce the chances of getting a heat illness (such as heat cramps or heat exhaustion).” ($M = 4.87$). Heat related illness is one of the leading causes of death in high school athletes, hence, proper hydration strategies have been shown to decrease heat related illness in college and professional athletes (Ortiz, 2019). Adequate hydration is required to achieve maximum athletic performance and prevent from heat related illness (Magee, Gallagher & McCormack, 2017).

There is no substantial difference between genders since UiTM Perlis athletes were generally aware about their hydration intake and could identify the important of hydration intake for practices and games in different environment. Based on the current result, the awareness between genders on the hydration knowledge was on the average. Therefore, managers, coaches and athletes need to make continuous efforts to evolve and execute more effective hydration strategies. Increasing the awareness of athletes regarding hydration can then lead to desired improvements in attitude and behaviour (Nichols et al., 2005). The level of hydration education and knowledge of the athletes will influence the pattern of hydration during exercise (Ashadi et al., 2018). Hence, providing athletes with feedback on their own fluid requirements will allow the athletes to exercise safely and perform better in their sports (Lopez, 2012). Plus, this data can be used as reference for sport coaching, body of knowledge whereby knowledge of hydration plays a vital role for athletes in enhancing their exercise performance in sport and practice.

Moreover, not only athletes need to be educated on proper hydration but sports nutritionists, coaches and athletic coaches as well and should also ensure that athletes use their expertise to train by creating an environment that enhances positive behaviours and attitudes (Nichols et al., 2005). Besides that, this study also will be beneficial to the athletes to get a better hydration status. The importance of knowledge on hydration adequacy will help the athletes to have high levels of awareness in hydration since the most important thing is the level of awareness of hydration needs. For this reason, it can be concluded that it was important for the athletes to have a better understanding of proper hydration before, during, and after the exercise, know the dehydration risk and disruption and also strategies to reduce the incidence of athlete dehydration which may impair the exercise performance.

REFERENCES

- Armstrong, L. E., & Armstrong, L. E. (2000). *Performing in extreme environments* (Vol. 1). Champaign, IL: Human kinetics.
- Ashadi, K., Mirza, D. N., & Siantoro, G. (2018). Hydration status in adolescent runners: Pre and post training. *IOP Conference Series: Materials Science and Engineering*, 296(1). <https://doi.org/10.1088/1757-899X/296/1/012014>
- Ashadi, Kunjung, Fachri, R. L., Siantoro, G., Kusuma, D. A., Hariyanto, A., & Kusuma, I. D. M. (2018). *Comparison of Knowledge and Hydration Awareness on Adolescent Soccer Athletes*. 157(Miseic), 5–8. <https://doi.org/10.2991/miseic-18.2018.2>
- Cristobal, E., Flavián, C., & Guinalú, M. (2007). Perceived e-service quality (PeSQ): Measurement validation and effects on consumer satisfaction and web site loyalty. *Managing Service Quality*, 17(3), 317–340. <https://doi.org/10.1108/09604520710744326>
- Decher, N. R., Casa, D. J., Yeargin, S. W., Ganio, M. S., Levreault, M. L., Dann, C. L., ... & Brown, S. W. (2008). Hydration status, knowledge, and behavior in youths at summer sports camps. *International Journal of Sports Physiology and Performance*, 3(3), 262–278.
- Ersoy, N., Ersoy, G., & Kutlu, M. (2016). Assessment of hydration status of elite young male soccer players with different methods and new approach method of substitute urine strip. *Journal of the International Society of Sports Nutrition*, 16–21. <https://doi.org/10.1186/s12970-016-0145-8>
- Heaney, S., O'Connor, H., Michael, S., Gifford, J., & Naughton, G. (2011). Nutrition knowledge in athletes: A systematic review. *International Journal of Sport Nutrition and Exercise Metabolism*, 21(3), 248–261. <https://doi.org/10.1123/ijsnem.21.3.248>
- Jenus, J. S., Pital, P. P., & Wahed, W. J. E. (2018). Knowledge, Attitude and Behaviors Regarding Hydration and Hydration Status among Combat Sports Athletes. *World Journal of Management and Behavioral Studies*, 6(1), 7–10. <https://doi.org/10.5829/idosi.wjmbms.2018.07.10>
- Jusoh, N. (2014). Relationship between hydration status, hydration knowledge and fluid intake behaviour among school athletes of selected Perak sport schools. *Jurnal Sains Sukan & Pendidikan Jasmani*, 3(1), 11–19.
- Lopez, R. M. (2012). Exercise and hydration: individualizing fluid replacement guidelines. *Strength and Conditioning Journal*, 34(4), 49–54. <https://doi.org/10.1519/SSC.0b013e318262e1d2>
- Magee, P. J., Gallagher, A. M., & McCormack, J. M. (2017). High prevalence of dehydration and inadequate nutritional knowledge among university and club level athletes. *International Journal of Sport Nutrition and Exercise Metabolism*, 27(2), 158–168.
- Maughan, R. J., & Shirreffs, S. M. (2007). Nutrition and hydration concerns of the female football player. *British Journal of Sports Medicine*, 41(SUPPL. 1), 60–64. <https://doi.org/10.1136/bjism.2007.036475>
- Nichols, P. E., Jonnalagadda, S. S., Rosenbloom, C. A., & Trinkaus, M. (2005). Knowledge, attitudes, and behaviors regarding hydration and fluid replacement of collegiate athletes. *International Journal of Sport Nutrition and Exercise Metabolism*, 15(5), 515–527. <https://doi.org/10.1123/ijsnem.15.5.515>
- Ortiz, E. (2019). Hydration Knowledge and Intake in High School Student Athletes. Master Thesis. Illinois State University, USA.
- Sedek, R., Mohamad, M. M., & Kasim, Z. M. (2015). Knowledge, attitudes and practices on hydration and fluid replacement among endurance sports athletes in National University of Malaysia (UKM). *Pakistan Journal of Nutrition*, 14(10), 658. <https://doi.org/10.3923/pjn.2015.658.665>
- Zhang, N., Du, S., Tang, Z., Zheng, M., Yan, R., Zhu, Y., & Ma, G. (2017). Hydration, fluid intake, and related urine biomarkers among male college students in Cangzhou, China: A cross-sectional study—applications for assessing fluid intake and adequate water intake. *International Journal of Environmental Research and Public Health*, 14(5). <https://doi.org/10.3390/ijerph14050513>

✉ Al Hafiz Abu Bakar

Faculty of Sports Science and Recreation,

Universiti Teknologi MARA, Cawangan Perlis, Kampus Arau,

02600, Arau, Perlis,

Malaysia

Email: alhafizab@uitm.edu.my