



ASSESSMENT OF SPORTS NUTRITIONAL KNOWLEDGE, ATTITUDE, PRACTICE, AND HYDRATION STATUS AMONG ADOLESCENT SOCCER PLAYERS

Mrs.G.Latha¹, Dr.Meera Raman²

¹PhD Scholar, Assistant Professor, Department of Foods and Nutrition, Rathnavel Subramaniam College of Arts and Science, Coimbatore, India.

²Professor, Department of Food Science and Nutrition, Dr.N.G.P Arts and Science College, Coimbatore, India

Abstract: Sports Nutrition is defined as a field of nutrition that deals with the use of vital nutrients through the proper diet of sports athletes in their day-to-day life to improve their performance in sports events or competitions. To improve their athletic performance, athletes must be aware of the significance of food and make sure they consume the recommended amounts of nutrients. The lack of understanding of sports nutrition will lead to poor dietary practices that can cause detrimental effects on athletic achievements. The objective of the study was to assess the sports nutritional knowledge, attitude, and practice (KAP) and hydration status of adolescent soccer players through need-based nutrition intervention. Ethical clearance was obtained from the Institutional Human Ethics Committee of Avinashilingam Deemed University. Forty adolescent soccer players between the age group of 10-19 years were selected purposively from Soccer Academy in Coimbatore District. All the samples completed the well-structured, standardized Sports nutritional knowledge, attitude, practice (KAP) and hydration status questionnaire respectively. The pilot study results reveals that the sports nutritional knowledge, attitude, practice score and hydration status assessment of the adolescent soccer players was poor. Sports nutrition is unique to each person and is planned according to individual goals. A sports nutrition diet may vary daily, depending on specific energy demands. As a result, player's nutritional knowledge, attitude, practice and hydration status can be improved by providing on-going nutrition education through workshops and courses.

Keywords: Adolescent soccer players, Knowledge, attitudes, and practice (KAP), nutrition education

I. INTRODUCTION

During adolescence, a person's body and mind rapidly develop and mature (Maiti et al., 2011). According to Wang, Chen, Shaikh, & Mathur (2009), global economic growth and urbanization have significantly altered the nutritional status of adolescents worldwide over the past two decades. Due to their physical development and physical activity, young athletes require more nutrition. A combination of training, body composition, and nutrition all contribute to optimal athletic performance (Daneshvar P et al., 2013).

Performance is negatively impacted by adolescents' lack of general and sports nutrition knowledge regarding the consumption of various macro and micronutrients and proper hydration. In order to evaluate adolescents' concepts regarding the consumption of various macro and micronutrients, as well as the appropriate time and quantity of consumption, it becomes essential to evaluate their nutrition knowledge, attitudes, and dietary habits (Tamiru et al., 2016). A nutrition plan tailored to each player's needs should be in place.

There is limited research on the effectiveness of nutrition education programs in adolescent soccer players, and nutrition education programs are not always incorporated into the sports curriculum, which results in athletes lacking knowledge of sports nutrition. Nutrition education intervention is one of the possible ways to educate adolescents about the proper food intake and healthy dietary habits. As a result, it would appear that nutrition education interventions are a crucial strategy for improving team sport athletes' performance.

However, very little research has been done on the nutrition knowledge and food skills of Indian football players. As a result, the purpose of this study was to investigate the nutritional status of football players in the Coimbatore District, as well as their dietary habits and knowledge, attitude, and practice.

II. MATERIALS AND METHODS

a. Participants

The participants of the study were 40 soccer players aged between 10-19 years selected through the purposive random sampling method. The soccer player was selected based on their willingness to participate in the study. Ethical clearance was obtained from the Institutional Human Ethics Committee. The approval number of the same is AUW/IHEC/RVS-20-21/XPD-03.

b. Development of tool

The football players' sports nutritional knowledge, attitude, and practice (KAP) as well as their hydration status were assessed using a questionnaire. Knowledge refers to their understanding of the subject, their attitude to the subject, and any preconceived

notions they may have about it. Practice refers to the ways in which they demonstrate their knowledge and attitude through their actions. Sports require a lot of hydration, which is also very important for recovering afterward.

c. Assessment of Sports Nutritional Knowledge, Attitude and Practice among Adolescent Soccer Players

According to Gamucio (2011), the evaluation of Knowledge, Attitude, and Practice (KAP) reveals the level of knowledge as well as misunderstandings that could be a potential obstacle to practice. Football player's knowledge, attitude, and practices about sports nutrition were assessed using a questionnaire in the current study. The questionnaire was divided into the following three components. The knowledge part of the questionnaire consisted of 20 questions on sports nutrition domains such as role and food sources of carbohydrates, protein, fat, micronutrients, supplements, competition nutrition and fluids with true or false options. Each question's right response received a score of one. The wrong response received a score of 0. The attitude part addressed the attitude towards sports nutrition comprising of ten questions with five point Likert Scale ranging from strongly agree (5) to strongly disagree (1). A score of five was given for each correct answer. The dietary practice of football players was assessed with ten questions related to practices based on sports nutrition principles. The responses were 'Yes and No' with a score of '1' given to yes and '0' to no answers.

d. Hydration Status Questionnaire among Adolescent Soccer Players

Water is the only substance that the human body cannot exist without for an extended period of time. Water is present in almost all of the tissues and fluids in the body, which makes up 55–60% of the total weight. Water is crucial to sports performance for a number of reasons, including temperature control, joint lubrication, and nutrient delivery to working tissues. It controls body temperature, cushions and shields key organs, supports the digestive system, and works inside each cell to deliver nutrients and remove waste. (Clarka Nancy, 2008). The hydration status of the adolescent soccer players were assessed using the questionnaire which covers symptoms of dehydration on before event, during event and after event.

III. DATA COLLECTION AND ANALYSIS

Each athlete was given the schedule to complete using as much time as necessary to answer all the questions. The survey was conducted during the break hours without disturbing the routine. Specific verbal instructions were provided wherever necessary. The data was consolidated, tabulated and statistically analyzed using mean value and standard deviation.

IV. RESULTS AND DISCUSSION

a. KAP-Sports nutrition questionnaire

Amanat Ali et al., (2015) found that optimal nutrient intake and good nutritional knowledge have been recognized as important factors in improving athletic performance and athlete health. A lack of nutritional knowledge can lead to questionable eating habits that can have a negative impact on health and performance. The investigation was divided into three sections. These sections were "Knowledge" with 20 questions, "Attitude" with 10 questions, and "Practice" with 10 questions. The sum of the points for the factual part results from the addition of the points of all questions. One point was given for each correct answer and zero points for each wrong answer. The maximum number of points in the knowledge part was 20 points, with 15-20 points indicating a high level of knowledge, 8-14 points indicating an average level and 0-7 points indicating a low level. The total score for the attitude section was also calculated by summing the scores for all questions. The maximum score in the attitude area was 10 points, with 34-50 points being classified as positive attitude, 17-33 points as neutral attitude, and 0-16 points as negative attitude. Similarly, for the practical part, the total score was calculated by adding up the points obtained for all 10 questions. The maximum number of points for the practical part was 10 points. The overall evaluations of the practice were divided into three groups: good (7-10 points), fair (4-6 points) and bad (0-3 points).

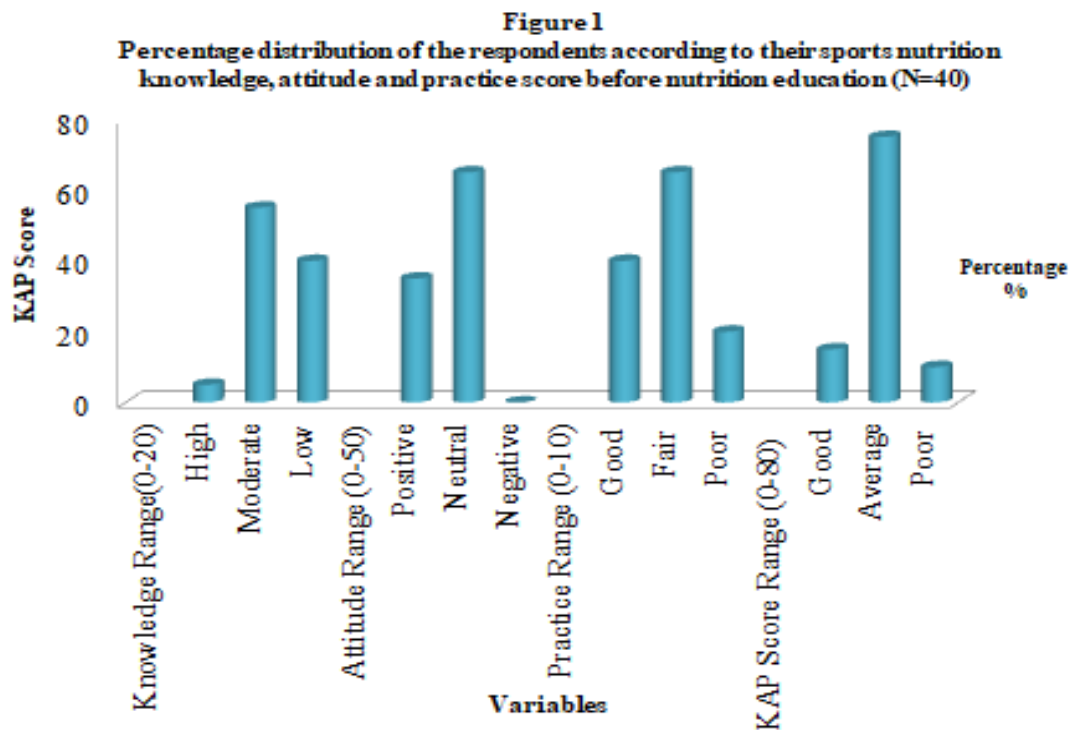
The knowledge, attitude and practice (KAP) assessment was carried out among 40 football players from soccer schools in Coimbatore District. The pre-knowledge, attitude and practice scores were collected initially in both the academy before giving nutrition education to the athletes. The pre-knowledge, attitude and practice scores were the actual knowledge, attitude and practice of the football athletes regarding their sports nutrition practices and these are given below in table 1 and figure 1:

Table 1: Percentage distribution of the respondents according to their sports nutrition knowledge, attitude and practice score before nutrition education (N=40)

Variables	Number of participants (N=40)	Percentage (%)	Mean ± SD
<u>Knowledge Range(0-20)</u>			
High (15- 20 points)	2	5	
Moderate (8– 14 points)	22	55	8.95 ±3.25
Low (0 – 7 points)	16	40	
<u>Attitude Range (0-50)</u>			
Positive (34-50 points)	14	35	
Neutral (17-33 points)	26	65	31.52 ± 4.11
Negative (0-16 points)	Nil	Nil	
<u>Practice Range (0-10)</u>			
Good (7-10 points)	16	40	
Fair (4-6 points)	26	65	5.9 ± 1.83
Poor			

(0-3 points)	8	20	
KAP Score Range (0-80) (Knowledge Score +Attitude Score + Practice Score)			
Good (54-80 points)	6	15	
Average (27-53 points)	30	75	46.37 ± 7.24
Poor (0-26 points)	4	10	

Figure 1 Percentage distribution of the respondents according to their sports nutrition knowledge, attitude and practice score before nutrition education (N=40)



From the above table 1 and figure 1 it clearly reveals that the pre-test of KAP assessment showed majority of the participants 55% had a moderate level of knowledge on sports nutrition. High level of knowledge seen in 5% and 40% of the subjects had low level of nutrition knowledge. Mean and standard deviation for knowledge scored 8.95 ± 3.25 . Attitude scores shows that majority 65% of the participants had a neutral attitude towards sports nutrition and 35% of the participants showed a positive attitude towards sports nutrition. None of them showed negative attitude towards sports nutrition. Mean and standard deviation for attitude scored 31.52 ± 4.11 . Dietary practice scores reveal that majority 65% of the participants showed fair level of practice in nutrition. Good dietary practice is seen in 40% of the participants and 20% had poor dietary practices respectively. Mean and standard deviation for practice scored 5.9 ± 1.83 . Overall KAP score reveal that majority 75% of the participant's scored in average level. Mean and standard deviation for overall KAP scored 46.37 ± 7.24 . So, from this study the results revealed that it is vital to educate the subjects and accustom them to the good dietary practices. Hence, delivering continuous nutrition education through workshops and nutrition classes helps to improve their nutritional knowledge, attitude and practice among soccer players.

b. Hydration Status Assessment Questionnaire

Body fluid balance is primarily a function of a person's fluid intake (i.e., hydration) versus fluid loss (i.e., perspiration) during exercise or competition. Electrolytes, especially sodium, are also lost with sweat. Electrolyte replenishment is associated with hydration because replenishing sodium losses increases fluid retention (**Shirreffs & Sawka, 2011**). Professional soccer players usually don't pay much attention to their daily drinking habits. One study observed that while young soccer players were generally aware of the importance of hydration, they did not translate this knowledge into effective hydration strategies (**Decher et al., 2008**). Other studies have shown that soccer players only replenish about 50% of the fluids lost during training and competition (**Aragon-Vargas et al., 2009; Shirreffs et al., 2006**), suggesting that it may not be enough relying on thirst to prevent dehydration. Athletes should be well hydrated before training; Athletes should also drink enough fluids during and after exercise to compensate for fluid loss. Therefore, daily fluid intake can be just as important as competing fluid intake strategies. Results on hydration status and use of ergogenic agents in soccer players were evaluated using the questionnaire presented in Table 2 and 3.

Table 2: Hydration and ergogenic aids

S. No	Particulars	Number of respondents (N=40)	Percentage %
1	<u>Water Intake per day</u>		
	2.0-3.0 liters	24	60
	3.0-4.0 liters	16	40
	4.0-5.0 liters	Nil	Nil
2	<u>Ergogenic aid</u>		
	Yes	4	10
	No	30	75
	Sometimes	6	15
3	<u>Usage of Ergogenic aid</u>		
	Protein Powder	6	15
	Energy Drinks	2	5
	Energy Bar	2	5
4	<u>Why do you feel you need to take ergogenic aid?</u>		
	Improve Performance	2	5
	Increase Energy Levels	2	5
	Muscle Gain	2	5
	Prevent Illness	2	5

From the above table 2 it is clear that sixty percent of soccer players consumed 2.0 to 3.0 liters of water per day, 40 percent consumed 3.0 to 4.0 liters of water per day and none of them consumed 4.0 to 5.0 liters of water per day. It was heartening to note that 75 per cent of the soccer players did not consume any ergogenic aid. Only 25 % of them used ergogenic aids like protein powder (15%), energy drinks (5%) and energy bar (5%) respectively. About 20% consuming ergogenic aids felt that it helps in improve performance, increased energy levels, muscle gain and it helps in preventing illness each constitute 5% respectively.

Table 3: Percentage distribution of the respondents according to their hydration status before nutrition education (N=40)

S.No	Symptoms	Before Event (n=40)		During Event (n=40)		Immediately After Event (n=40)	
		Yes %	No %	Yes %	No %	Yes %	No %
1	Dry mouth	5	45	15	-	30	5
2	Thirst	-	15	50	5	30	-
3	Unable to spit	-	30	5	30	25	10
4	Irritable	5	40	5	15	5	30
5	Headache	5	45	5	15	-	30
6	Bored or disinterested	15	70	-	5	-	10
7	Dizziness	5	70	5	10	5	5
8	Cramps	5	40	5	-	45	5
9	Excessive Fatigue	5	30	15	5	40	5
10	Not able to play	-	15	25	10	25	25

From the above table 3 it is clear that majority of the subjects lack in hydration status assessment. Dehydration may cause performance to decrease. To prevent this, players must be educated about the importance of fluid intake before, during and after events. So from this study the results clearly reveal that nutrition intervention is much needed to these subjects.

V. CONCLUSION

Sports nutrition is tailored to each individual's needs and objectives. A sports nutrition diet can change every day to meet specific energy needs. According to the findings of this study, soccer players who lacked knowledge about sports nutrition and thus engaged in poor diet, physical activity, and personal hygiene practices lacked access to nutrition education interventions. Food trends

and practices vary depending on the sport, indicating the strong influence of peers, coaches, and tradition. During a competition, if you don't eat right, it could hurt your performance. There is still room for improvement when it comes to their eating habits and food preferences. This can be accomplished through nutrition interventions, diet counselling, or by practicing healthy eating habits and making good food choices. As a result, player's nutritional knowledge, attitude, and practices can be improved by providing on-going nutrition education through workshops and courses.

VI. ACKNOWLEDGEMENT

The authors would like to express deep sense of gratitude to all soccer players who willingly participated in the study.

REFERENCES

1. Amanat Ali, Muhammad S. Al-Siyabi, Mostafa I. Waly and Hashem A. Kilani, (2015), Assessment of Nutritional Knowledge, Dietary Habits and Nutrient Intake of University Student Athletes, *Pakistan Journal of Nutrition*, 14: 293-299.
2. Aragon-Vargas, L.F., J. Moncada-Jimenez, J. Hernandez-Elizondo, A. Barrenechea, M. Monde-Alvarado (2009), Evaluation of pre-game hydration status, heat stress, and fluid balance during professional soccer competition in the heat. *Eur. J. Sport. Sci.* 9:269–276.
3. Clark Nancy (2008), *Sports nutrition guide book: The 1st Nutrition resources for active people*. Health work fitness center chestnut hill, MA, USA, pp. 103-105.
4. Daneshvar P, Hariri M, Ghiasvand R, Askari G, Darvishi L, Iraj B, et al. Dietary behaviors and nutritional assessment of young male isfahani wrestlers. *Int J Prev Med.*2013; Apr; 4(Suppl 1):S48-52.
5. Decher, N.R., D.J. Casa, S.W. Yeargin, M.S. Ganio, M.L. Levreault, C.L. Dann, C.T. James, M.A. McCaffrey, C.B. Oconnor, S.W. Brown (2008) Hydration status, knowledge, and behavior in youths at summer sports camps. *Int J Sports Physiol Perform.* 3(3):262-78.
6. Gumucio, S. (2011), *The KAP survey model*. Retrieved September 6, 2014, from <http://www.google.com.ph/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1>
7. Maiti, S., Ali, K. M., De, D., Bera, T. K., Ghosh, D., Paul, S., Jana, K. (2011), A Comparative Study on Nutritional Status of Urban and Rural Early Adolescent School Girls of West Bengal, India. *Journal of Nepal Paediatric Society*, 31(3), 169-174. <http://dx.doi.org/10.3126/jnps.v31i3.5352>
8. Shirreffs, S.M., M.N. Sawka, M. Stone (2006), Water and electrolyte needs for football training and match play. *J. Sports Sci.* 24, 699-707.
9. Shirreffs, SM Sawka MN (2011), *Nutrition for endurance sports*™ marathon, triathlon, and road cycling, New Delhi, P-101-107.
10. Tamiru, D., Argaw, A., Gerbaba, M., Nigussie, A., Ayana, G., & Belachew, T. (2016). Improving dietary diversity of school adolescents through school based nutrition education and home gardening in Jimma Zone: Quasi-experimental design. *Eating Behaviors*, 23, 180–186. <https://doi.org/10.1016/j.eatbeh.2016.10.009>
11. Wang, Y., Chen, H. J., Shaikh, S., & Mathur, P. (2009). Is obesity becoming a public health problem in India? Examine the shift from under- to over nutrition problems over time. *Obesity Reviews*. <http://dx.doi.org/10.1111/j.1467-789X.2009.00568.x>