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Exploring the level of awareness about sports-nutrition knowledge among football players belonging to different ethnic groups of North Bengal, India

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Abstract

The aim of the present study was to investigate the level of awareness about sports-nutrition knowledge among football players belonging to different ethnic groups living in North Bengal, India. Based on positivistic approach, the present study revealed that the football players of this region possess inadequate knowledge of nutrition both in terms of general nutrition knowledge and in terms of the timing and type of nutrients to be consumed before, during, and after competition. Moreover, the habit of consuming protein (meat) during and immediately after sports competition seems to be a traditionally perceived way of food consumption and practice, which is needed to be changed. And, such a low level of sports-nutrition knowledge among football players of present study highlights the importance to introduce special educational program on sports-nutrition to enhance their knowledge and thereby performance and health.

Keywords: *Sports-nutrition knowledge, Football, Ethnic groups*

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Introduction

Football is an endurance sport having intense exercise interspersed with continuous activity over 90 minutes and more. The estimated energy requirements for a football game are between 5 to 17 kcl min^{-1} (MacLaren, 2003). And, if nutrition is given inadequate attention, it is not possible for a player to give 100% effort in training or during a match. Therefore, it is essential for the soccer/football players and coach to have an adequate knowledge of sports nutrition (MacLaren, 2003). Sports-Nutritional practices such as 55% of the energy intake should be in the form of carbohydrate and a protein intake of 1.4 to 1.7 gkg^{-1} body weight. Pre-competition meal should be consumed 2.5 to 3 hrs before playing. The post- competition meals should be consumed within 2 hrs after playing. Also, the general nutritional knowledge like balance diet; food pyramid etc. are the most important nutritional knowledge and practices players must know for their proper development (MacLaren, 2003:73-93).

For proper development of athletic performance and health the acquisition of knowledge about sports nutrition, as described in the foregoing paragraph, is unavoidable to every player, coach, parents and stake holders involved therein. However, the acquisition of nutrition knowledge by players depends on many factors, such as the availability of qualified coach, lecture on sports science in schools and colleges through physical education curriculum, technical support sought by the local sports clubs, research on developmental issues of athletes belonging to rural area, support from parents and educational institutions, tradition and culture etc,. In this

context, it can be postulated at the outset that the players belonging to different ethnic groups living in North Bengal, India may not possess an adequate knowledge of sports nutrition for their progressive development.

Football shares a symbiotic relation with the people of North Bengal. When we reflect upon the local narratives about football, we find memories of the Raja of Coochbihar ingrained in the century old Coochbihar Gold Cup football tournament organised even today by the people. Moreover, during the colonial period, through cultural diffusion, the culture of football was spread wide across India. And undoubtedly, the western invaders not only spread sports they also tried to impart the knowledge about sports science by establishing Physical Education Institution such as YMCA College of Physical Education in Madras and by introducing Physical Education and sports in public schools as important part of the curriculum. But, at times the country was undergoing social reform movements that prioritise other aspects of development then sports. As a result of this, the scientific development of sports, except cultural diffusion, could not be reached among the different communities of the country irrespective of their class, religion, region, ethnicity etc. And there is no exception in this regard among the ethnic people living in North Bengal, India.

Of the different ethnic groups of West Bengal, India; Toto, Mech, Rajbongshi or Koch-Rajbongshi and Adivasi are mostly found in the northern part of West Bengal.Toto is atribal group lives in the Alipurduar district of west Bengal.The Mechanother ethnic group belonging to Bodo-kachari group of people. They also live in parts of Jalpaiguri district and Cooch Behar district of West Bengal.The Rajbongshi or Koch-Rajbongshi another ethnic group also inhabiting in the northern part of West Bengal. The Koch Rajbongshi community has an oral tradition of agriculture, dance, music, medical practices, song, the building of house, culture and language. The Koch Rajbongshi community had traditionally been an agricultural community, cultivating mainly rice, pulses, and maize. Adivasi community, on the other hand, is a collective term used for tribes of Indian subcontinent. In North Bengal, people from Adivasi community mainly work as daily wage labourers in Tea Estates owned by private companies.

Although different tribes/ethnic/Adivasi communities have different traditional food habits and practices and have different socio-economic background, but sportspersons across the globe must acquire sports nutrition knowledge such as pattern, timing and type of food for their professional development. Therefore, using positivistic approach, the present study aims to investigate the level of awareness of sports-nutrition knowledge among football players belonging to different ethnic group living in North Bengal, India.

Methodology Used:

Subjects of the study

For assessing the sports nutrition knowledge of football players, a total sample of 80 participants was collected from Doars area of North Bengal. Out of 80 participants belonging to four different ethnic groups, 20 Toto,20 Meche, 20 Rajbangshi and20Adivasiwere selected for the present study. The age of the participants were ranging from 20 to30 years.

Sampling Method

As the objective of the study was to examine the level of sports nutrition knowledge among football players belonging to different ethnic groups living in Doars area of North Bengal, convenient sampling method was adopted for data collection.

Questionnaire Used

Sports-nutrition knowledge particularly the pattern, timing and type of food are supposedly common to all athletes across the globe as it is scientifically recommended for the athletes. Although the traditional knowledge and practice of food and diets are relatively different from culture to culture, but the practice of sports nutrition across all players and places may technically be the same. Therefore, a standard questionnaire, prepared and validated by several experts such as Isam Denna,Ali Elmabsout, Ashmisa Eltuhami, Shehab Alagory, Tahani Alfirjani, Fatima Barakat andSaif Aleslam Almajouk of Libyan Football Federation Medical Committee, and

Mustafa Y. G. Younis of the department of Bio-chemistry, University of Benghazi, (2018,pp.21-24), (available at http://www.ijmbs.org),was used for this present study.

Procedure for collection of data

The participants were given the questionnaire and were asked to answer all the questions. The questionnaire covers: personal data, general nutrition knowledge, nutrition knowledge of pre-competition, during competition, and post-competition meals.

Statistical Analysis used

Simple descriptive statistics (mean and percentage) was calculated to fine out the level of awareness regarding the nutrition knowledge among football players of different ethnic groups living in North Bengal.

Result and Discussion:

Table 1: Formal education and physical characteristics of participants as well as occupation and formal education of their parents:

Formal education level of subject:	Percentage
Illiterate and primary	38
Secondary	37
Graduation and above	25
Physical characteristics of subjects:	**Mean**
Age (years)	24
Height (cm)	170
Weight (kg)	62
BMI (kg/m^2)	22
Formal education level of parents:	**Percentage**
Illiterate and primary	52
Secondary	31
Graduation and above	17
Occupations of parents:	**Percentage**
Businessman	13
Govt. service	05
Farmers	50
Private service	32

As shown in Table-1, the mean age of the subjects were 24 years, mean height 170cm, mean weight 62kg and mean body mass index was 22. In terms of formal education, seventy five (75%) of the subjects were under graduates. With regard to the occupational background of the parents, majority of them were farmers and private service holder. Also, more than fifty percent (52%) parents were having below secondary level of education which means they are either illiterate or just have primary level of education.

Table 2: General nutrition knowledge and practices:

	Yes (%)	**No (%)**
-Do you adhere to special nutrition system while participating in exercises during the season?	21	79
-Do you communicate with dieticians?	10	90
-Have you attended sports nutrition Lectures previously?	19	81
-Do you have knowledge about the food Pyramid?	33	67
-Do you know about balance diet?	44	56

With regard to general nutrition knowledge and practices as shown in the Table-2, seventy nine percent (79%) of the participants do not follow any special nutrition system while participating in exercises during the season.

Moreover, ninety percent (90%) have no communication with dieticians and only nineteen percent (19%) have attended formal nutrition lectures. Regarding the knowledge of food pyramid, sixty seven (67%) do not know what food pyramid is. Similarly, more than fifty percent i.e. 56% have no idea about balance diet.

Table 3: Knowledge of timing and type of meal before competition:

• Time of intake before competition (hrs.):	Percentage
3 hrs-	95%
7 hrs-	05%
10 hrs -	00%
• Type of nutrients before competition:	Percentage
Carbohydrates and minerals -	31%
Carbohydrates and proteins -	60%
Carbohydrates and fat -	05%
Carbohydrates and vitamins -	04%

As shown in Table-3, Ninety five percent (95%) of the participants have knowledge that the pre-competition meal should be consumed 3 hours before the competition. But, only 31% know that these nutrients should consist of carbohydrates and minerals.

Table 4: Knowledge of timing and the type of post-competition meal:

• Time of intake:	Percentage
Immediately -	35%
Within 4 hrs -	51%
After 4 hrs -	14%
• Type of nutrients:	Percentage
Carbohydrates -	20%
Protein -	65%
Fat -	15%

With regard to the knowledge of timing and type of post-competition meal as shown in table-4, the fifty one percent (51%) of the participants know that the post-competition meal need to eat within 4 hours after the end of competition. Participant's choices for the type of nutrients during the post-competition were 65% chose protein,20% chose carbohydrates and 15% chose fat.

Discussion:

The present study was aimed to investigate the level of nutrition knowledge among the football players belonging to different ethnic groups living in North Bengal. The average age of the participants were 24 years and having sound BMI but in terms of attainment of formal education 75% of them were not even graduates. Moreover, more than fifty percent (52%) of their parents were either illiterate or just have primary level of education and more than Eighty percent (Farmers 50% and Private Service holders 32%) of their parents were from low income group occupation. As such, the low level of formal education and poor occupational background of players and their parents seems to have association with their low level of nutrition knowledge.

More specifically, with regard to the general nutrition knowledge and practices seventy nine percent (79%) of the participants do not follow any special nutrition system while participating in exercises during the season, Moreover, ninety percent (90%) have no communication with dieticians, and only 19% have attended formal nutrition lectures. This indicates that the football players of this study, though being professional, are unaware about the nutritional knowledge required for professional athletes or players. Similar observation, though outside of the country, about poor understanding of sports nutrition and neglect of following dietary recommendations appropriate for sports was also reported by Isam Denna1, Ali Elmabsout1, Ashmisa Eltuhami1 and et.al. (2018).

Regarding the knowledge of food pyramid sixty seven percent (67%) do not know what food pyramid is. Similarly, majority of the subjects i.e. fifty six percent (56%) have no idea about balance diet. This further indicates a lack of nutrition knowledge among football players. Such inadequate knowledge about sports nutrition makes football players difficult to grow and develop professionally. The above results, therefore, indicate some lacuna from institutional side, be it teaching, coaching and parenting specially on the grounds of dissemination of nutrition knowledge to aspiring sportspersons for their professional growth. Such cases of negligence were also observed in other part of the globe. For example, Kemal Goral, et al. (2010, pp.836-856) in their study on Turkey Super League football players, reported a significant differences in statistical values of skipped meal, period between the match and the last meal, how many meals to be needed a day for an athlete and mostly needed minerals and in the values of source of knowledge about sports nutrition and fluid intake during the exercise. This again further substantiates that youths are playing football without scientific knowledge required for being professional and there is no exception in the case of football players living in North Bengal, India.

Many studies have shown that carbohydrate should be consumed 3-4 hours before the exercise or competition and that pre-exercise or competition meal should be high in carbohydrates, as it extends time to fatigue and improve total work done. For soccer/football players, at least a 3 hours interval between a full meal and competition is recommended. It helps to minimize gastrointestinal problems such as nausea and a feeling of fullness, and the stomach should be reasonably empty at the time of the match since the digestion and absorption of food will compete with the muscles for a good amount of blood supply(Maclaren, 2003,pp.73-92). However, in our present study only 31% of participants know that these nutrients should come from carbohydrates and minerals. Majority of participants were found unaware about the type of nutrients to be taken before the competition. Moreover, the results also show that the majority of participants (60%) prefer to eat carbohydrate and protein before competition. This indicates that the knowledge of nutrition among the players seems more traditional than scientific.

American Dietetic Association have recommended the athletes' diet having 60-65% of calories coming from carbohydrate, 10-15% from protein, and no more than 30% from fat (Fahey, Insel& Roth, 2005). Similarly, a nutritionist, Don MacLaren, recommends the consumption of carbohydrate as soon as possible after exercise or competition as it helps in complete glycogen restoration. He further advocated that the first 2 hours post-exercise period is the most crucial period for the ingestion of carbohydrates as the glycogen-synthesizing enzymes are very active during this time.He recommends to consume 1.5g kg^{-1} body weight of carbohydrate within 30 minutes after competition or exercise (MacLaren, 2003,p.78)

However, in our present study more than fifty one percent (51%) of participants have no idea that carbohydrate rich diet need to be taken immediately within 30 minutes after competition. Moreover, the majority of participants (65%) indicated protein as the proper nutrients to consume after competition. This again highlights the traditionally perceived way of eating protein (meat) during cultural events or rituals including sports, but such traditional belief about nutrition become detrimental and unscientific for athletes and their performance. Furthermore, the failure of choosing carbohydrates as the recommended constituents of the post-competition meal by the players of this study indicates the alarming low level of nutrition knowledge among football player belonging to different ethnic groups living in North Bengal, India.

Conclusion:

It is an established fact that athletes/players should acquire adequate knowledge of nutrition in order to have optimal athletic performance and healthy dietary habits. However, our pilot investigation on football players belonging to different ethnic groups namely Toto, Mech, Rajbongsi and Adivasi living in Doars area of North Bengal, India found that the football players of this region possess inadequate nutrition knowledge both in terms of general nutrition knowledge and in terms of the timing and type of nutrients to be consumed before, during, and after competition. Moreover, the habit of consuming protein (meat) during and immediately after sports

competition seems to be a traditionally perceived way of food consumption and practice, which is needed to be changed. And, such a low level of nutrition knowledge among football players of present study highlights the importance to introduce special educational program on sports-nutrition to enhance their knowledge and thereby performance and health. Such educational programs, however, need to consider the fact that many of these players and their parents have low level of formal education and poor occupational background.

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