INTERNATIONAL JOURNAL OF RESEARCHES IN SOCIAL SCIENCES AND INFORMATION STUDIES
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www.vmsindia.org

ROLE OF NUTRITIONAL GUIDANCE IN ENHANCING SPORTS ENDURANCE OF AMATEUR WOMEN SWIMMERS

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ABSTRACT
Sporting activity combines exercise with recreation. Nutrition plays an important role in any exercise by supplying the necessary energy as well as enhancing the endurance. The study was therefore, aimed at assessing nutritional knowledge, dietary practices and physical endurance of 40 amateur women swimmers of age group 25 – 35 years, from Akola city; before and after imparting nutrition guidance to them. 85% of the respondents had low knowledge level about general nutrition at pre guidance stage. The guidance helped 65% respondents to achieve high knowledge level while medium level was achieved by another 22.5% swimmers. Nutritional guidance related to endurance resulted in a shift from 100% respondents at low level pre guidance to 77.5% of them at high level post guidance, showing significant (0.1067) improvement at 0.01 level of significance. Only 1 of the swimmers practiced consumption of carbohydrate rich diet, instead a high percentage 65% consumed fat rich diet while 30% fat & protein rich diet. 15% respondents started consuming carbohydrate and protein rich diet. Nutritional guidance induced 70.00% respondents to shift to carbohydrate rich diet. The dietary practices improved significantly due to knowledge gained through the nutritional guidance. At post guidance stage; good sport endurance was observed in 82.5% respondents, 72.5% had good general stamina, good body weight status was achieved by 87.5% respondents, while 77.5% of the swimmers had good level of psychological well being. Nutritional guidance, appropriate for the sports women enabled them in improving their nutrition resulting in improvement in their nutritional knowledge, dietary practices and health parameters related to physical endurance, thereby improving their sports activity.

Keywords: Amateur Women Swimmers, Nutritional Guidance, Nutritional Knowledge, Dietary Practices, Endurance, Health Parameters.

Introduction

Sports combine exercise and recreation, especially for amateur sports person. Physical exercise and nutrition are essential components of any planned sports activity.[1] Urban women are, increasingly, taking up swimming as a sporting activity to achieve good health and figure in addition to the recreation. Nutrition, not only enables a swimmer to carry out physical activity but it also gradually builds up the endurance, if properly implemented. The specific needs vary with age, gender, type of sports, climate etc. Different nutritional agents in the body, perform the function of generating caloric energy at different time phases of a sporting activity. Carbohydrates play a vital role in production of caloric energy while fats are utilized to a much lesser extent and at a much later stage of such activity[2]. Proteins are usually spared[3]. Knowledge of sports nutrition and implementation of appropriate dietary practices are essential for optimum sports performance.

Women, as amateur swimmers, usually intend to gradually increase their stamina / endurance so that they can swim for a longer duration and take part in swimming competitions. They are, usually, unaware of a rational approach to sporting activity. They follow what they perceive as routine & implement suggestions of untrained colleagues or relatives. Consequently they do not attain / achieve their goals related to the game, stamina, health & weight management. The study was therefore aimed at assessing the role of nutritional guidance on sports endurance of amateur women swimmers.

OBJECTIVES

1. To assess nutritional knowledge, dietary practices and physical endurance of the respondent swimmers.
2. To impart relevant nutritional guidance
3. To assess role of the nutritional guidance.

Materials and Methods

From a larger pool of amateur swimmers in Akola city, 40 women swimmers in age group of 25 - 35 years were studied. A schedule was prepared to elicit initial information about the level of their nutritional knowledge, their dietary practices & physical endurance related to swimming. Nutritional knowledge level was assessed with the help of 20 questions each on general nutrition, and role of carbohydrates in sports nutrition and 10 questions on nutrition for sports endurance. The respondents were divided in three groups of knowledge level on the basis of percent score obtained.

Nutritional knowledge, generally, has direct effect on a person's dietary practices which in turn are related to his / her physical endurance[4]. Endurance depends on nutritive support to the muscle by glycogen stored in it. A person on high carbohydrate diet stores far more glycogen in muscles than a person on either a mix diet, or a high fat diet[5]. The rate of muscle glycogen replenishment after exercise depends on type of diet[6]. Recovery from exhaustive muscle glycogen depletion often requires days rather than hours in time[7]. A high energy diet rich in carbohydrates is essential for recovery as well as energy for training and endurance[8]. The nutritional guidance to be imparted was therefore prepared to include mainly basic nutrition information, sports nutritional knowledge, physiology of metabolism, nutritional physiology of muscular activity, dietary practices and endurance enhancing nutrition. The education was imparted through lectures, group discussions, and power point presentation etc. over a period of 30 days. It was refreshed after a fortnight over a period of 7 days. Personal queries were answered. Reassessment of the players' characteristics under study was done at the end of 6 months from initiation of the study. Hemoglobin levels of all the respondents were checked and rectified by treatment of General Medicine Consultant.

Results

- **NUTRITIONAL KNOWLEDGE**

Nutritional knowledge of the respondents, pre and post nutritional guidance sessions is shown in Table 2. Table 2 reveals that a large majority (85%) of the respondents had low knowledge level about general nutrition at pre guidance stage. The guidance helped 65% respondents to achieve high knowledge level while medium level was achieved by another 22.5% swimmers. The improvement in general nutrition knowledge level was significant (0.1067) at 0.01 level of significance.

The importance of role of carbohydrates in sports nutrition was known to only 3 (7.5%) of the respondents at pre guidance level, which improved to 70% respondents achieving high knowledge level and 12.5% achieving medium knowledge level at post guidance stage. The improvement was significant (0.1126) at 0.01 level of significance. Nutritional guidance related to endurance resulted in a shift from 100% respondents at low level pre guidance to 77.5% of them at high level post guidance, showing significant (0.1121) improvement at 0.01 level of significance.

- **DIETARY PRACTICES**

Dietary practices were assessed in terms of consumption of carbohydrate rich diet, fat rich diet, fat + protein rich diet & carbohydrates + protein rich diet. The results are depicted in Fig. 1. Fig. 1 reveals that one (5%) of the swimmers practiced consumption of carbohydrate rich diet, instead a high percentage 65% consumed fat rich diet while 30% consumed fat & protein rich diet. Nutritional guidance induced 70% respondents to shift to carbohydrate rich diet. The dietary practices improved significantly due to knowledge gained through the nutritional guidance. Carbohydrates + protein rich diet was initiated by 15% respondents.

- **HEALTH PARAMETERS**

Physical endurance of the swimmers is likely to be affected by different health parameters. The respondents were assessed for physical endurance based on 4 health parameters namely sports endurance, general stamina, body weight status and feeling of psychological well being. The results are presented in Table 3.

Table 3 reveals that at pre guidance stage, majority of the respondents had poor sports endurance (77.5%), poor general stamina (85%), poor body weight status (67.5%) and poor level of sense of well being (82.5%). At post guidance stage good sport endurance was observed in 82.5% respondents, 72.5% had good general stamina, good body weight status was achieved by 87.5% respondents, while 77.5% of the swimmers had good level of psychological well being.

The amateur women swimmers involved in the study had wished to achieve good level of health parameters when they started swimming. Majority of them achieved their major objectives when appropriate sports nutritional guidance was combined with the swimming activity itself.

Discussions

Nutritional guidance enabled the respondent players to get adequate insight of general nutritional aspects pertinent to physical health & endurance. Many of them were unaware of the extremely important role of carbohydrates in the diet of players. The emphasis that needs to be given to sports endurance cannot be ignored by sportspersons and their guides. Appropriate nutrition gave boost to sports endurance of respondents and the knowledge gained through the guidance ensured sustained benefits to the respondents.

Dietary practices of respondents underwent necessary modifications because of the knowledge and training obtained through the nutritional guidance of the study. Such changes are extremely important and beneficial for boost to sports endurance.

Health parameters inclusive of physical & psychological up-gradation of the respondents is a natural consequence of nutritional knowledge gained, healthy dietary practices adopted and mental tone up of the players due to the holistic nutritional guidance imparted during the study.

Table 1

S.NO.	PERCENT SCORE	LEVEL
1.	< 33	Low
2.	33 – 66	Medium
3.	> 66	High

Table 2: Distribution of Respondents According to Nutritional Knowledge -

Nutritional Knowledge	Level											
	Low				Medium				High			
	Pre		Post		Pre		Post		Pre		Post	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
General Nutrition	34	85	05	12.5	03	7.5	09	22.5	03	7.5	26	65
Role of Carbohydrate	37	92.5	07	17.5	03	7.5	05	12.5	00	00	28	70
Nutrition for endurance	40	100	01	2.5	00	00	08	20	00	00	31	77.5

Table 3 : Distribution of Respondents According to Health Parameters –

Parameter	Poor				Good			
	Pre		Post		Pre		Post	
	No.	%	No.	%	No.	%	No.	%
Sports endurance	31	77.5	07	17.5	09	22.5	33	82.5
General Stamina	34	85	11	27.5	06	15	29	72.5
Body Weight Status	27	67.5	05	12.5	13	32.5	35	87.5
Psychological well being	33	82.5	09	22.5	07	17.5	31	77.5

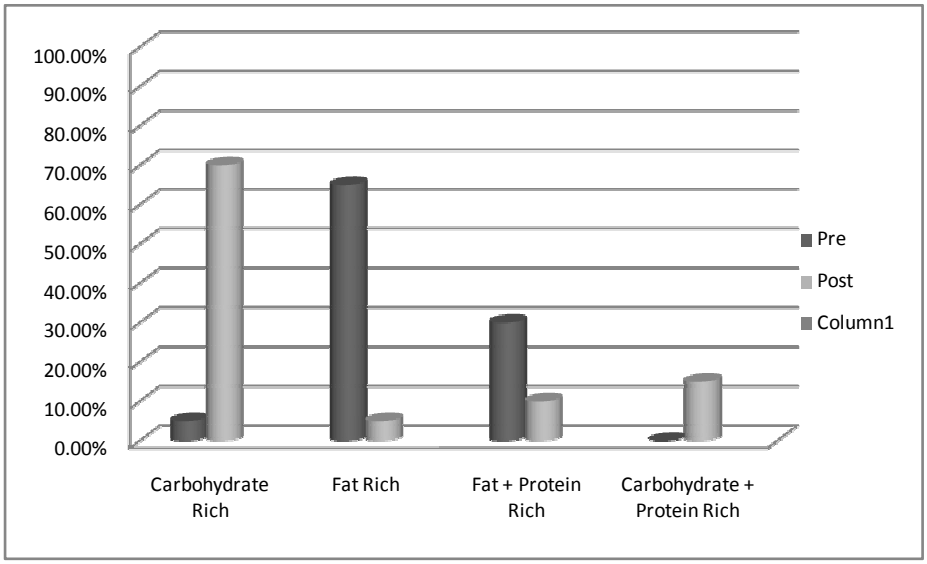

Figure 1 : Distribution of Respondents According to Dietary Practices -

Conclusions

Amateur women swimmers usually do not follow dietary practices appropriate for their sports activity because they lack necessary nutritional knowledge. Consequently they fail to achieve their targets related to sports endurance. Nutritional guidance, appropriate for the sports women enabled them in improving their nutrition resulting in improvement in the health parameters related to physical endurance.

Sports persons need nutritional guidance along with sports training to achieve improvement in their sports performance.

Nutritional guidance should be imparted to sports persons.

Acknowledgements

The author acknowledges, the cooperation received from the study respondents and others during the study.

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