



Examining the Nourishment Status of Employees of One of the Military Universities of Tehran in the Month of Ramadan

Fateme Rahmati Najjarkalayi ¹, Hossein Dini Talatape ^{1,2}, Farhad Tavakkolian ², Parvin Rahnama ^{3*}, Islam Aghapour ⁴

¹ The Military Health Research Center, Medical University of Baghiatallah, Tehran, IR Iran

² Department of Health, Health and Medical Education Command of the Military of Islamic Republic of Iran, Tehran, IR Iran

³ Midwifery Group, Shahed University, Tehran, IR Iran

⁴ Medicine and Religion Research Center, Medical University of Baghiatallah, Tehran, IR Iran

ARTICLE INFO

Article type:
Original Article

Article history:
Received: 28 Jul 2011
Revised: 07 Oct 2011
Accepted: 30 Nov 2011

Keywords:
Eating
Ramadan Month
Eating Habits

ABSTRACT

Background: Emphasis on planning for having proper food consumption in order to have healthy nourishment in days of Ramadan month has greatly drawn attention.

Objectives: It is essential to be aware of the usual behavior of people before planning an educational program. Therefore, this research has been done in order to examine nourishment status of employees of one of the military universities of Tehran.

Materials and Methods: This research is a descriptive sectional research. Sampling from among the employees of one of the military universities of Tehran has been done randomly. The groups under research were groups who did not have limitations in fulfilling their duty to fast, and at the last day of Ramadan month the sampling was done randomly. SPSS program has been used in order to investigate and analyze the data.

Results: 117 persons were studied in this research. The results of the research shows that there is a meaningful relation between person's weight and how much he consumes food ($P = 0.001$). Among food materials, for the persons under research there is a meaningful relation between meat consumption and weight ($P = 0.005$). In most of the persons (41.2 percent) consumption of sugary materials was between 40 to 100 grams. This shows that meat consumption in 44.4 percent of those persons is between 200-300 grams. Liquid consumption in 40/9 percent of the persons has been reported to be between 6-8 glasses a day. Also consumption of bread is between 100-200 grams in 46/5 percent of the cases. 44.4 percent of the persons under research used less than one glass of milk in one day. Most of the people under research (34.1 percent) consumed between 2 to 3 units of fruit a day.

Conclusions: Regarding the achieved results of this study it seems like precise policy making is essential in order to offer theory-based educational programs and controlling and evaluating them in order to improve manners of eating in Ramadan month.

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► Implication for health policy/practice/research/medical education:

Health and nourishment policy making for military staff and university employees.

► Please cite this paper as:

Rahmati Najjarkalayi F, Dini Talatape H, Tavakkolian F, Rahnama P, Aghapour I. Examination of the nourishment status of employees of one of the military universities of Tehran in the month of Ramadan. *Quran Med.* 2011; 1(2):25-9. DOI: 10.5812/quranmed.4975

* Corresponding author: Parvin Rahnama, Midwifery Group, Shahed University, Tehran, IR Iran. Tel: +98-2166418580, Fax: +98-2166418580, E-mail: prahnama@shahed.ac.ir

1. Background

The role of eating and food in the general health of the society is a known matter and there is no doubt in its effect on quality of life and economy of the society (1). Still, Fasting in Ramadan month, the sacred month of Islam, is a duty for all Muslims. Muslims have to refuse to eat or drink until after sunset. Most of people consume two meals in a day, one after sunset and the other before sunrise (2). However, not only eating habits change in this month, but also the amount and kind of the consumed food at night differs from other months of the year. In most cultures foods enriched with protein and fat or containing a lot of sugar are consumed. While in other countries factors like poverty result in reduction of energy received by the body and therefore reduction of body fat in this month (3).

Fasting in Ramadan is a unique kind of continuous daily fasting in one month and differs from experimental fasting. In Islamic fasting, food and drinks are not consumed but in experimental fasting only food is not consumed. Fasting in Ramadan is continuous from dawn to sunset and also ears, tongue, and reproductive system have to restrain from certain things and acts explained in the divine law. Staying awake at some hours of night also differentiates between Islamic and experimental fasting (4).

Many researches have been done on the subject of the effect of fasting on health and nourishment of people, one of which is the study of Ziaee and assistants about the metabolic effects and weight changes in Ramadan month which concludes that fasting reduces glucose, weight, and the number of meals (5). The study of Larijani and assistants also showed that in this month consumption of calorie and blood glucose reduces in this month (6). The study of Durdi Qujeq and assistants also indicates the relation between fasting and reduction of fat consumed by the body which is related to reduction of cholesterol level (7).

According to these studies, examination of meals in Ramadan month and planning healthy nourishment at these times is of great importance in order to be able to both avoid gluttony and unplanned eating and also be safe from lack of nutrients by dividing energy and calories needed by the body. In eating recommendations it is always said that there should be a balance and moderation in consumption along with variety in eating, especially in Ramadan month that Muslims are empty stomach from dawn to sunset. In order to stay healthy one of the most important points is to consume the main groups of food. Usually nutrients consumed in this month are less than nutrients consumed in ordinary days.

Balanced eating in addition to improving blood cholesterol level, reduces gastric acid and prevents constipation and other digestive problems and ultimately results in a way of life that is healthy and active.

There is no need to eat so much at sunset, for dinner,

and at dawn because the body has an adjusting mechanism that during fasting consumes fat effectively. If there is too much food consumption and imbalanced eating, it might result in health issues and insufficient sleep (8).

Recommended amount of each food group: According to the great Prophet's method and data achieved from different researches, these recommendations are offered:

- 1- Group of bread and grains: 6 to 11 units a day
- 2- Group of meat: 2 to 3 units a day
- 3- Group of milk and dairy: 2 to 3 units a day
- 4- Group of vegetables: 3 to 5 units a day
- 5- Group of fruits: 2 to 4 units a day
- 6- Sugary materials: 20 grams a day

2. Objectives

The goal of this study was to examine nourishment status of employees of one of the military universities of Tehran in the month of Ramadan.

3. Materials and Methods

After doing the needed studies and researches on this subject, a questionnaire was prepared by knowledgeable specialists in the domain of nourishment. The contents of the questionnaire was decided by ten of the specialists in the group of nourishment sciences and health education. Constancy was evaluated by the usage of Cronbach's alpha on thirty persons of the society with the similar conditions which obtained measure 0/87. The aforesaid questionnaire consists of two parts: first part is demographic information of the persons (age, gender, education, etc) and the next part contains information on the amount of food consumption in them, and on the whole it includes 22 questions. The sampling was done from employed persons in one of the military medical sciences universities in Tehran who had been invited in one day for the religious speech of the end of the Ramadan month. Among 1200 employees, 500 of them attended the ceremony of the last day of Ramadan.

The method of simple randomization was used for the sampling. Ultimately 117 questionnaires were collected after being filled. The units under study contained persons who did not have any limitations for fulfilling their duty of fasting and were studied at the last day of the Ramadan month.

4. Results

In this study 117 of employees of the military medical sciences university in Tehran were studied.

The average age of 28.6 (standard deviation = 7.6), average height of 175.04 (standard deviation = 8.22), average weight of 73.00 kilograms (standard deviation = 13.28) were seen in the studied group (Table 1).

Sugary materials consumptions in most of the studied persons (41.3 percent) was between 40 to 100 grams and only 12 percent of the persons used less than 40 grams of

sugar a day. The results show that consumption of meat in 44/4 percent of the persons was between 200 to 300 grams and in 41 percent of the persons it was more than 200 gram a day. Liquid consumption in 40.9 percent of the persons was between 6 to 8 glasses a day. Also consumption of bread was reported to be between 100 to 200 grams in 46.5 percent. 44.4 percent of the studied persons consumed less than one glass of milk a day. Most of the studied persons (34.1 percent) used between 2 to 3 units of fruit a day and only 20 percent of them consumed 4 units of fruit or more a day (Table 2).

Among food materials there is a meaningful relation between consumption of meat and the weight of the person ($P = 0.005$) (Table 3). The results of the study showed that there is a meaningful relation between persons' weight and the amount of food consumption in them ($P < 0.001$) (Table 4).

5. Discussion

Fasting not only brings healthiness to the body and mind but also it is very effective in prevention and treatment of diseases. According to the researches fasting by healthy people adjusts the amount of their blood fat and increases the level of HDL and reduces LDL level which protects the Cardiovascular system (9).

Regarding meat consumption, according to the favorable amount of meat consumption which is between 60 to 90 grams a day, more than 75 percent of the studied persons consumed the proper amount of meat and some even more than that. As said in the results section, there has been a meaningful relation between consumption of meat and the weight of the persons studied.

Regarding milk and dairies consumption: according to favorable milk and dairies consumption which is about 2 to 3 glasses of milk or 60 to 90 grams of yoghurt or other dairies, from among the studied group less people used the said above amounts and only 6/8 percent of these people consumed milk and only 10/4 percent of the dairies mentioned above was consumed by them. The results of the studies show that acid linoleic that is basically found

in milk and dairies and meat has a very important role in prevention of Atherosclerosis diseases, all types of cancer, and increase of blood pressure, and operation of the immune system (10, 11).

Regarding vegetable consumption: according to the favorable consumption of vegetables in a day which is between 300 to 500 grams, the amount of vegetable consumption in 24 percent of the cases was less than 300 grams a day.

Regarding sugary materials consumption: the favorable consumption of sugary materials in a day is reported to be maximum 20 grams a day and in this study, in most of the cases the amount of sugar usage is reported to be more than 40 grams. Studies show that a few hours after fasting the amount of glucose in blood reduces but due to the operation of Gluconeogenesis reduction of blood sugar stops (12, 13). The high prevalence of diabetes in Iran has been reported in the population-based study of Esteghamati and assistants (14). In other words 2 million (7/7 percent) of the population of age 24 to 64 suffer from this disease. In research of Azimi Nejad and assistants also the prevalence of this disease is reported to be 5/5 percent (15). According to high consumption of sugary materials like the study of Kimiagar and assistants (16), in the future there should be arrangements made in order to reduce the ongoing process of development of this disease. Since sugary materials are simple sugars, they get absorbed very fast and immediately turn into energy.

Regarding the conditions of fasting and the hot season, consumption of liquids need to be at the highest level. In half of the cases consumption of 6 to 8 glasses of liquids has been reported. The results show that consumption of liquids and lots of food materials with fiber can prevent constipation and cure it (17).

In 20 percent of the studied persons more than 4 units of fruit was consumed at dawn and after sunset. Fruit consumption improves cardiovascular diseases (18), reduces the possibility of increase in blood pressure (19) and some types of cancer (20).

Table 1. Demographic Characteristics of the Studied Persons

Demographic Characteristics	Mean	SD
Age	28.61	7.64
length	17.5	8.22
Weight	73	13.28
Education		
Graduates	25	21.4
Diploma	36	30.7
Degree	47	40.2
MA	9	7.7
Gender		
Female	19	16.2
Male	98	83.8

Abbreviation: SD, standard deviation; MA, Master student

Table 2. The Amount of Consumption of Different Groups of Food in the Studied Persons

Food Group	Frequency	Percentage
Fluids Consumption		
Less than 6 Glasses	19	16.52
Between 8-6 Cups	47	40.87
10-8 Glass	43	37.39
<10 Cups	6	5.22
Meat Consumption		
> 120 g	17	14.53
200-120 g	52	44.44
300-200 g	36	30.77
<300 g	12	10.26
Vegetables Consumption		
> 300 g	27	23.68
400-300 g	46	40.35
500-400 g	23	20.18
<500 g	18	15.79
Sugar Consumption		
> 40 g	14	12.07
100-40g	48	41.38
140-100 g	29	25.0
<140 g	25	21.55
Dairy Consumption		
> 30 g	40	42.61
40-30 g	37	32.17
90-40 g	12	10.43
<90 g	13	11.30
No Consumption	4	3.48
Fruit Consumption		
> 2 Units	25	21.3
Unit 3-2	40	34.1
Unit 4-3	20	17.0
<4 Units	15	12.8
No Consumption	8	6.8

Table 3. The Relation Between Consumption of Meat and Weight of the Persons

The Consumption of Meat	Weight Loss		Weight Gain		No Change		P- Value
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	
> 120 ,g	14	18.9	0	0.0	3	11.1	K ² =18.2
200-120, g	32	43.2	7	43.8	13	48.1	
300-200, g	26	35.2	6	37.5	4	14.8	P=0.005
<300, g	2	2.7	3	18.7	7	25.9	
Total	74	100	16	100	27	100	

Table 4. The Relation Between Reduction in Consumption of Food and Weight Loss

	Weight Loss		Weight Gain		No Change		P- Value
	Frequency	Percentage	Frequency	Abundance	Frequency	Abundance	
Reduced	66	89.2	1	6.3	12	44.4	K ² =88.04 P ≤ 0.001
Increased	1	1.4	13	81.2	3	11.1	
No change	7	9.4	2	12.5	12	44.4	
Total	74	100	16	100	27	100	

Ultimately regarding that there is a meaningful relation between weight loss and reduction in usage of food materials, it seems like weight loss and reduction in receiving food because of fasting need to be thoroughly controlled. In the research done by soylem (1992) about body and energy metabolism at the time of resting and exercising while being fast at the Ramadan month, the results showed reduction in receiving food, weight loss, reduction in fat percentage and metabolism in the body at the time of resting (21).

Reviewing the existing studies, we see that fasting not only is not harmful but also can be useful if the right eating habits are used. Therefore we should achieve precise information about the eating habits of fasting people so that based on those information there will be theoretical education on consumption of the right food materials. The programs should contain points about consumption of different kinds of food materials. Since this study had the limitation of choosing certain kinds of people of the society and because of not having objective criterion in order to examine the eating habits, it is recommended that more vast studies be carried out to cover the whole society, so that there can be precise policy making for arranging educational programs and controlling and evaluating it.

Acknowledgments

None declared.

Authors' Contribution

The authors greatly thank all the employees of the university and the assistant soldiers in this project and appreciate their help.

Farhad Tavakkolian: Assistant in collecting the questionnaires

Parvin Rahnama: Analyser, writer, and editor of the article

Hamidreza Tavakkoli: Supervisor of the implementation of the study

Islam Aghapour: Editor and counselor in writing the article

Financial Disclosure

There was no case consisting of conflict of interest.

Financial /Support

This project was carried out with the financial support of Nutrition and Food Hygiene Bureau of Health and Medical Education Department of the Army of the Islamic Republic of Iran.

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