

Nutrition Habits of Women in Karapınar (Central Anatolia): Corrects and Incorrects

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Abstract

The correct and incorrect management of food preparation, cooking and storage habits of women in Karapınar, Central Anatolia were determined by questionnaires. Majority of the women were obese with grade I, II and III body type. Although socio-economic level of housewives are relatively high, incorrect practices were determined while using and storing vegetables, legumes, dairy products, oil and eggs that are all common in their daily nutrition. However, use of steel pan, single use of frying oil and timing of sugar use for puddings were correct practices. Thus, nutrition habits and knowledge of women in Karapınar are somewhat within standards. However, enhancing the current knowledge is requested for better food processing and good health which can be only available with education courses. Since interviews revealed housewives willingness to education courses, improper nutritional habits can be corrected by educational courses.

Key words: Karapınar, nutrition habits, nutrition knowledge, food preparation, Central Anatolia

1. Introduction

Nutrition culture and habits of humans, directly effecting health, are shaped by society and affected by climate, agriculture, industrialization, migration, urbanization, media and technological developments. Nutrition can be defined as use of foods for growth, sustaining life and health, and nutrition aimed to provide required energy and elements according to age, gender, activity and special conditions (Lloyd, McDonald, & Crampton, 1978; Geissler & Powers, 2009). Majority of the people has insufficient and/or incorrect knowledge on nutritive value, preparation, cooking and conservation/storing of foods as well as choosing healthy ones (Friedman, 1996; Sabbağ, Sürücüoğlu, Özçelik, & Akan, 2006). Housewives knowledge on food influence household's nutrition status. Thus, training is a basic precaution for mitigating and avoiding nutrition problems that may arise due to incorrect knowledge of women on food preparation and cooking (Brown, McKenzie, & Yudkin, 1963; Walker, Walker, Jones, Duvenhage, & Mia, 1982; Hakeem, Asar, & Shaikh, 2004). Training can lead development of sufficient and balanced nutrition habits, getting rid of bad nutrition habits, protecting foods from deterioration which may all result efficient use of food sources (Potter, & Hotchkiss, 1995; Lentz, 1999; Topçu, Köksal, & Bilgili, 2003; Entis, 2007; Baysal, 2009). Moreover, food type, stability of nutrient elements, cooking water and time along with cooking gadgets are affecting loss of nutrients during cooking.

Whatever the development level of the society and increasing women responsibility out of house do not change the traditional role of women even enhanced its position (Kumar, 2005), and main responsibility of women in Turkey are still nutrition of the households wherever they live (Akpınar, Talay, Ceylan, & Gündüz, 2004).

2. Material and methods

Study on food preparation of housewives is undertaken in Karapınar town, Konya (C. Anatolia). Karapınar has a population of 48.200 out of which 51% is women. Housewives constitute 86% of the female population (TUIK, 2010). Main income of the region is agriculture with animal husbandry. Average income of the per capita in Karapınar in terms of buying power is app. 6.800 US\$ (TUIK, 2010). Thus, interviewed women's income is within the average of the country which is 8.500 US\$ (TUIK, 2010).

The body mass indexes were evaluated according to WHO (World Health Organisation standards, 2000). Interview was undertaken with 50 housewives in summer of 2010. The data was evaluated by SPSS 17.0 software.

3. Results

3.1. Sample Characteristics of Women in Karapınar

Ages of the women varied from 36 to 51 years with 1 to 3 children (Table 1). The body mass indexes (BMI) of surveyed women were generally obese with Grade I, II and III body type (World Health Organisation standards, 2000). The frequency of obesity increased with development of the country due to excess consumption of high energy foods and lack of daily exercise (King & Wofford, 2000). Thus, intensive agriculture practices in Karapınar since 1990s increased income of the household. The increase both in income and obesity in Karapınar confirmed King and Wofford's (King & Wofford, 2000) overall suggestions on linear relation of health problems and economical welfare.

The prevalence of obesity ($BMI \geq 30 \text{ kgm}^2$) is 33.9% in Central Turkey among women aged 15 to 49, which is 31.9 in Western part and is 27.3% in Eastern part of the country (Koruk, & Şahin, 2005; Arslan, & Ceviz, 2007) whereas Flegal et al. (2005) determined that obesity rate is 30.5% in USA for similar aged females and 20% of all adults in most European countries already obese (James, 2008). Thus, the obesity rate in Karapınar is the highest within the country even higher than developed regions of the world which is an alarming state.

3.2. Education, Career and Marital Status

The mean educational level among is lower than high school (82%) with 62% elementary school education. Most of the women are housewives and 92% is married (Table 2).

3.3. Exercise and Sport Habits of Females in Karapınar and Health Issues

Following mechanization in agriculture and availability of electronic house appliances in Karapınar, females' physical workload at farm and house were significantly reduced which negatively affected energy expenditure that all increased BMI (Sabbag, 2012). Balanced and adequate diet should be supported by daily exercises for maintaining body activities (Rolls, Drewnowski & Ledikwe, 2005). Increasing BMI causes several health issues particularly hypertension, cardiovascular diseases, diabetes and joint diseases (Flegal, 2005). However, only 8% were getting daily exercise by walking. Complains on health was 56% and mostly on muscle, bone and joint diseases along with hypertension (Table 3).

3.4. Eating Habits of Women

Most of the women use own plates, only 6% used shared-plates for eating, however 12 % uses own plate when there is a guest at home (Table 4). Mothers decide food type and cooking style for the family (86%). Cheese and yogurt are generally prepared at home by housewives with 68%. More than half of the participants indicated their eating speed normal and had 3 meals a day (Table 4). This eating habit ie 3 meals a day is a common practice in Turkey (Sevenay, 1996; Sabbağ, Sürücüoğlu, Özçelik, & Akan, 2006).

3.5. Vegetable processing and storage practices

Vegetables are consumed either raw or cooked in Karapınar traditional kitchen. However, cooking or processing at either consumption causes loss in vitamin constituents, particularly loss of vitamin C is related to amount of cooking water, time and type, type of casserole along with open or closed lid during cooking. 74% of the studied women shell-wash-chop vegetables before cooking, 58% closed casserole lid while cooking and 50% stored vegetables in fridge following washing (Table 5). However, the right process which is washing-shelling-chopping was practiced only by 26%. This low figure is also valid for several parts of the country (Sevenay, 1996; Güler, & Özçelik, 2002).

Majority of the women poured away boiled water of vegetables, pasta and legumes (Table 4) and cooked pilaf by frying. However, sugar is added to milk puddings close to ripening which is a right practice. Cooking practice is of utmost importance for preventing nutrition quality of foods (Contento, 2010). Thus, women are informed to stew or grill meat, cook legumes with boiling water, add vegetables immediately after cutting to hot water, and vaporize boiling water of pasta for cooking for right cooking practices. Ünver (1985), suggested 7 minutes of boiling in 800ml of water in casserole best practice for conserving vitamin C. Moreover, as vitamin B and lysine are degraded due to high temperature during frying of rice along with occurrence of hazardous materials following molecule deterioration, pilaf should be cooked by boiling (Gershwin, German, & Keen, 2000). Saving boiling water of legumes while cooking is crucial for saving nutrition quality of meal (Contento, 2010). Thus, current food preparation in Karapınar is not in accordance with healthy food preparation techniques.

3.6. Use of frying oil, whey and yogurt water

Frying generally decreases nutrition value and deteriorates oil properties. Thus, fried foods should not dominate in daily diet, however, for preventing negative effects of frying, contact with air should be prevented by deep frying and should not be used more than three times (Contento, 2010). Fifty six percent of the interviewed women stated one time use of frying oils, 68% poured away whey and stored eggs in fridge following washing. Table 6 shows that 38% of the participants cooked meat in oven, and 56% thought that oven cooked meat are more delicious. Stewing generally known as healthy cooking method for meat, poultry and fish, but there will be 70% of loss in vitamin B if no boiling water is used (Ruzi Roso, 1998). However, this loss decreased to 20% when oven, grill or microwave is used. Similar studies revealed majority of the housewives throughout the world cook meat by frying or grilling (West, Joy, Murphy, Hudes, Bunch, & Wright, 1999). Most of the participants, 62%, keep boiled milk in fridge in closed pots.

3.7. Casseroles used for cooking

In general, women prefer steel casserole for cooking however other casseroles are also used for different cooks for example 60% used polytetrafluoroethylen (PTFE) casseroles for pilaf cooking (Table 7). Therefore, casserole types used for cooking in Karapınar is healthy. Studies on use of casseroles in the country revealed that steel casserole use is common which is followed by PTFE (Sevenay, 1996; Güler, & Özçelik, 2002; Topçu, Köksal, & Bilgili, 2003).

3.8. Storage of Foods

Storing food until consumption is as important as production. Participants of the survey indicated that most of the food such as bread, cereals, legumes and sugar containing are stored primarily in kitchen cabinets then fridge (Table 8).

3.9. Food storage containers

Majority of the women in Karapınar prefers plastic bags for storing meat, milk and dairy products, oils in their original pack, eggs in fridge shelves (Table 9). However, the increase in use of plastic bags for storage is challenging since storing liquid and semi-liquid foods in plastic bags that are not designed for food storing is dangerous for health. Although plastic bags should be used only once for storing foods multiple uses causes transition of hazardous chemicals to foods. This is more recognized for storing yogurt in its original package.

3.10. Nutrition Knowledge of women in Karapınar

Majority of the women in Karapınar replied true answers to; milk as the most healthy drink (90%), citrus fruits are good for protecting flu (92%), foods should be consumed in the morning, afternoon and evening ie as three meals a day (90%), milk and dairy products provide calcium (60%). However, answers on types foods that should be banned for high tension (60%), best practices for losing weight (78%), foods effecting tooth decaying (66%), mistakes of cooking and storing foods (76%), illness related to excess use of oil (60%) were inaccurate (Table 10).

4. Discussions

Global population increase incredibly boosted demand on foods. Thus, besides production of food, proper cooking and storing practices are utmost important for global food security. Arid and semi-arid regions such as Karapınar in Central Turkey are/will face food security issues more than humid regions of the world due to limitations in agricultural production. Traditional knowledge notwithstanding household income on food processing may sometimes inaccurate particularly by women with lower education level alike Karapınar. Consequently, education is the main action from preventing nutrition problems which will lead to balanced and sufficient nutrition as well as getting rid of mistakes and inaccurate practices that will case deterioration of foods. The study undertaken in Karapınar revealed that although income of women is relatively high, knowledge on food cooking and storing is not sufficient. Moreover, wrong food preparation in Karapınar leads development of illnesses such as high tension and high BMI. However, acquiescence of women on education courses on food is pleasing. By education courses, focusing on women that are choosing and planning food programs of the house, plenty of food can be saved and consumed in a proper way that will have positive effect both on limited food supply of globe and households health life.

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Table 1. Obesity and demographic characteristics of women

Data	N	%
Age (years)		
20-35	18	36.0
36-51	26	52.0
51-70	6	12.0
BMI kg/m ²		
Underweight	4	8.0
Healthy weight	15	30.0
Pre-obese state	12	24.0
Obesity Grade I	12	24.0
Obesity Grade II	3	6.0
Obesity Grade III	4	8.0
Number of households		
1-3	14	28.0
4-6	32	64.0
7-9	4	8.0
Number of child		
None	3	6.0
1-3	38	76.0
4-7	9	18.0

Table 2. Education, occupation and marital status of women

	N	%
Level of education		
Illiterate	3	6.0
Literate	3	6.0
Primary	31	62.0
Secondary	4	8.0
High	6	12.0
University	3	6.0
Occupation		
Housewife	42	84.0
Employe	4	8.0
Public officer	3	6.0
Retired	-	-
Self-employed	1	2.0
Marital status		
Married	46	92.0
Divorced-widow	4	8.0

Table 3. Exercise and health issues of women

Regular Exercise Habits	N	%
Always	4	8.0
Frequently	26	52.0
Never	20	40.0
Type of Exercise		
None	20	40.0
Walking	25	50.0
Running	2	4.0
Physical exercise	3	6.0
Health Complaints		
Exists	28	56.0
None	22	44.0
Total	50	100.0

Table 4. Eating Habits of women

	N	%
Table Meals		
Own plate	41	82.0
Shared-plate	3	6.0
Own plate when there is a visitor	6	12.0
Decision of meal type		
Mother	43	86.0
Father	4	8.0
Child	3	6.0
Convenience Food		
Available	16	32.0
None	34	68.0
Eating speed		
Fast	14	28.0
Very slow	9	18.0
Normal	27	54.0
Number meals in a day		
Two	6	12.0
Three	39	78.0
Four	1	2.0
Five	4	8.0
Total	50	100.0

Table 5. Vegetable processing, cooking and storing habits of women

	N	%
Before cooking vegetables		
Shelling-washing-chopping	37	74.0
Washing-shelling-chopping	13	26.0
Do not care	-	-
Storing vegetables		
In plastic bag, unwashed	10	20.0
In fridge, washed	25	50.0
In fridge, unwashed	15	30.0
Boiling water of vegetables		
Poured away	21	42.0
Keeps	16	32.0
Cooks without boiling	12	24.0
Irregular	1	2.0
Boiling water of legumes		
Poured away	27	54.0
Keeps	23	46.0
Cooking pilaf		
Soaked in water	3	6.0
Frying	44	88.0
Wetted and in water	3	6.0
Cooking Pasta		
Vaporized boiling water	27	54.0
Poured away	23	46.0
Adding sugar to milk puddings		
Before boiling of milk	7	14.0
When milk boils	12	24.0
Just before ripening	26	52.0
Does not care when	5	10.0

Table 6. Use of fried oils, whey and yogurt water by women

	N	%
Frequency of fried oil use		
Once	28	56.0
Twice	17	34.0
Three times	4	8.0
Four times	1	2.0
Whey and yogurt water		
Uses	16	32.0
Poured away	34	68.0
Storing egg		
Stores unwashed	18	36.0
Stores washed	32	64.0
Meat Cooking		
Grill	7	14.0
Stew	14	28.0
Fried	10	20.0
Oven	19	38.0
Reasons of meat cooking		
More delicious	28	56.0
For saving nutrient quality	3	6.0
Cooks faster	-	-
Preference	19	38.0
Milk storage		
Boiled, open lid, fridge	6	12.0
Boiled, closed lid, fridge	31	62.0
Raw, fridge	6	12.0
No storage	7	14.0
Total	50	100.0

Table 7. Casseroles types and preference of casseroles for certain food cooking by women

Casserole Type	Aluminum		Steel		Pottery		PTFE	
	S	%	S	%	S	%	S	%
Vegetables	5,0	10,0	33,0	66,0	5,0	10,0	7,0	14,0
Meat	1,0	2,0	21,0	42,0	14,0	28,0	14,0	28,0
Legume	3,0	6,0	37,0	74,0	3,0	6,0	7,0	14,0
Pilaf	3,0	6,0	16,0	32,0	1,0	2,0	30,0	60,0
Pasta	4,0	8,0	40,0	80,0	1,0	2,0	5,0	10,0
Milk pudding	3,0	6,0	40,0	80,0	2,0	4,0	5,0	10,0
Soup	5,0	10,0	40,0	80,0	1,0	2,0	4,0	8,0

Table 8. Storing food

	Kitchen cupboard		Fridge		Deep freezer		Cellar		Total	
	N	%	N	%	N	%	N	%	N	%
Bread	35	70.0	11	22.0	-	-	4	8.0	50	100.0
Cereals and legume	35	70.0	7	14.0	-	-	8	16.0	50	100.0
Fresh vegetables and fruits	7	14.0	43	86.0	-	-	-	-	50	100.0
Meat and meat products	1	2.0	25	50.0	24	48.0	-	-	50	100.0
Milk and dairy products	1	2.0	48	96.0	1	2.0	-	-	50	100.0
Egg	2	4.0	48	96.0	-	-	-	-	50	100.0
Oils	6	12.0	38	76.0	-	-	6	12.0	50	100.0
Sugar and sugar products	27	54.0	13	26.0	-	-	10	20.0	50	100.0

Table 9. Food storage containers

	Plastic		Fabric		Grease-proof paper		Own package		Fridge shelf		Canister		Glass Jar	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Bread	42	84	-	-	-	-	2	4	6	12	-	-	-	-
Cereals and legume	12	24	14	28	-	-	3	6	10	20	-	-	11	22
Vegetables and fruits	8	16	-	-	2	4	30	60	6	12	-	-	4	8
Meat and meat products	15	30	-	-	3	6	22	44	9	18	-	-	1	2
Milk and dairy products	3	6	-	-	2	4	21	42	12	24	6	12	6	12
Egg	4	8	-	-	3	6	4	8	37	74	2	4	-	-
Oils	3	6	-	-	8	16	21	42	7	14	3	6	8	16
Sugar and sugar products	19	38	-	-	-	-	13	26	11	22	2	4	5	10

Table 10. Nutrition Knowledge of women

		N	%
Which foods should be banned for high tension?	T	20	40.0
	F	30	60.0
What is the best practice for losing weight?	T	11	22.0
	F	39	78.0
Which food is effective on tooth decay?	T	17	34.0
	F	33	66.0
Which is the best drink for health	T	45	90.0
	F	5	10.0
Which is the wrong practice for cooking and storing vegetables and fruits?	T	12	24.0
	F	38	76.0
Which one protects against flu	T	46	92.0
	F	4	8.0
When should foods consumed?	T	45	90.0
	F	5	10.0
What kind of illness develops following excess oil consumption?	T	20	40.0
	F	30	60.0
What milk and dairy products provide to humans?	T	30	60.0
	F	20	40.0

T: True

F: False